REPORT TO NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

Channel Island Power Station WDL212-03 Annual Monitoring Report

Issued: 21 December 2023

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EXECUTIVE SUMMARY

In accordance with Waste Discharge Licence WDL212-03 Conditions 39 and 40, this Monitoring Report is prepared by Trop Water Pty Ltd on behalf of Territory Generation (TGen) for the period December 2022 – November 2023. Details relating to the wastewater and sediment monitoring programs, including interpretation of results from in-situ and laboratory analysis of physical and chemical parameters, are provided in this report.

Monitoring results for Channel Island Power Station (CIPS) wastewater and sediment monitoring programs are summarised as follows:

- The total wastewater discharge volume from the Cooling Tower was 26.05 ML from December 2022 – November 2023. Discharge data at the Cooling Ponds could not be reported. The inability to report this data is attributed to either a faulty flow meter (repaired in May 2023) or the absence of measurable discharge at ADP2.
- All Total Phosphorous (TP), Total Nitrogen (TN) and Total Suspended Solids (TSS) were below their respective trigger values specified in WDL212-03 at ADP1 and ADP2.
- With the exception of Total Nitrogen (TN), Total Phosphorous (TP), Total Suspended Solids (TSS), Total Arsenic (As), Total Chromium (Cr), Total and Filtered Copper (Cu), and Total and Filtered Zinc (Zn), all other reported contamination loads for other contaminants in wastewater at ADP1 and ADP2 were estimated with the absolute value of the respective laboratory limit of reporting (LOR).
- All sediment monitoring results at NODH2 and SODH2 were less than the trigger values specified in WDL212-03.
- Dissolved Oxygen Saturation (DO % Sat) was below the trigger of >80 % specified in WDL212-03 on 23 January 2023 (**75.8** %), 20 March 2023 (**77** %), 9 May 2023 (**61.2** %), and 19 October 2023 (**75.5** %) at ADP1. Similarly, DO % Sat was below the trigger of >80 % on 23 January 2023 (**64.7** %), 27 February 2023 (**58.5** %), 17 April 2023 (**49.3** %), 13 July 2023 (**52.9** %) and 3 August 2023 (**24.4** %) at ADP2.
- pH was outside the WDL212-03 pH trigger value range of 6.00 – 8.50 pH units at ADP1 on 9 May 2023 (**8.78** pH units) and 3 August 2023 (**8.85** pH units).
- Except for Filtered Copper concentration of **13** µg/L and **22** µg/L recorded at ADP1 on 13 July 2023 and 3 August 2023, respectively, and Filtered Zinc concentration of **44** µg/L recorded at ADP2 on 20 March 2023, all Filtered metals concentration remained below the specified trigger values outlined in WDL212-03.

Any instances of exceedance were either less than three times the specified trigger values in WDL21203 or did not occur on three consecutive sampling occasions from December 2022 to November 2023 monitoring events. As such, no notifiable incident was reported during this monitoring period.

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1 INTRODUCTION

Power Generation Corporation, trading as Territory Generation (TGen) operates the Channel Island Power Station (CIPS), the largest power station in the Northern Territory, Australia. TGen is a corporation owned by the Northern Territory Government. Since its commissioning in 1986, CIPS has been the main source of electricity for the Darwin-Katherine Interconnected system. CIPS currently has 278.4 MW of installed capacity generated by four (4) heavy industrial gas turbines, three (3) aeroderivative gas turbines, two (2) dual fuel and one (1) steam turbine.

Wastewater is a byproduct of the electricity generation processes at CIPS. The wastewater from CIPS electricity generation facility is discharged into Darwin Harbour through two authorised discharge points (Authorised Discharge Point 1 (ADP1) and Authorised Discharge Point 2 (ADP2). Subsequently, the wastewater is discharged via two outlets to Darwin Harbour (Figure 1). These two outlets receive effluent from different sources as indicated in Figure 2 (Cooling Tower, Cooling/settling Ponds, and stormwater). CIPS also manage on-site sewage, via a sewage treatment plant which is licenced and managed under DD2016/08353 the NT Department of Health *Wastewater Work Design Approval,* (WWDA, 2016).

The Northern Territory Environmental Protection Authority (NTEPA) granted CIPS the first Waste Discharge Licence (WDL 212), for the period November 2015 to November 2017. From June 2018 to June 2020, discharge was managed under WDL 212-01. Wastewater discharge was managed under WDL212-02 from June 2022 to November 2022. Wastewater discharged from the CIPS facility to Darwin Harbour is currently being managed under the renewed Waste Discharge Licence WDL212-03 issued on 12 December 2022 and is valid until 12 December 2032.

Trop Water Pty Ltd (TW, formerly Tropical Water Solutions Pty Ltd) was contracted by TGen in April 2016 to undertake the required monitoring program and to manage the waste discharge licence activities. The current licence (WDL212-03) provides conditions or approvals for the management of wastewater discharge from the CIPS facility. It requires the monitoring of wastewater on CIPS property boundaries (all land based) and sediment in the marine receiving environment.

This report is prepared by TW on behalf of TGen as a part of WDL212-03 annual reporting requirements (conditions 39 and 40). It gives details of the wastewater and sediment monitoring program and provides interpretation of *in-situ* and laboratory analysis results for physicochemical and chemical parameters. The reporting period for this report is from December 2022 to November 2023.

Wastewater discharge from Channel Island Power Station

CIPS has two authorised wastewater discharge points (Figure 1 and Figure 2); ADP1, and ADP2. ADP1 receives wastewater from the Cooling Tower (Figure 3). This wastewater subsequently flows through a drainage line which feeds into the Northern Stormwater Drainage, and out to Darwin Harbour. The Northern Outlet to Darwin Harbour monitoring point (NODH1) is located at the Northern Stormwater Drainage end of pipe (Figure 4). Discharge quality at ADP1 is dependent on the water chemistry of the cooling tower water and can vary due to operational conditions of the power generation infrastructure on site.

ADP2 receives wastewater from the two cooling or settling ponds (Figure 3). This wastewater flows into a drainage line and feeds into the Southern Stormwater Drainage then out to Darwin Harbour. The Southern Outlet to Darwin Harbour (SODH1) monitoring point is located at the Southern Stormwater Drainage end of pipe (Figure 4).

As shown in Figure 4, the settling ponds receive water from the Neutralization Basin and from the Oil and Water Separator plant.

In addition to water from ADP2, SODH1 receives stormwater from the CIPS onsite premises (roofing) and the southern side of the CIPS site (Figure 4).

Discharge from the Cooling Tower mixes with stormwater during rain events and drains within the Northern Stormwater Drainage, passing through rocks and mangroves before entering Darwin Harbour (Figure 4).

Mangrove population density around both the Southern and Northern Stormwater Drains is relatively low and the distance of the receiving water body from both stormwater drains is not more than 30 metres.

Figure 1: CIPS Authorised Discharge Point 1 (ADP1) or Compliance Point 1.

Figure 2: CIPS Authorised Discharge Point 2 (ADP2) or Compliance Point 2.

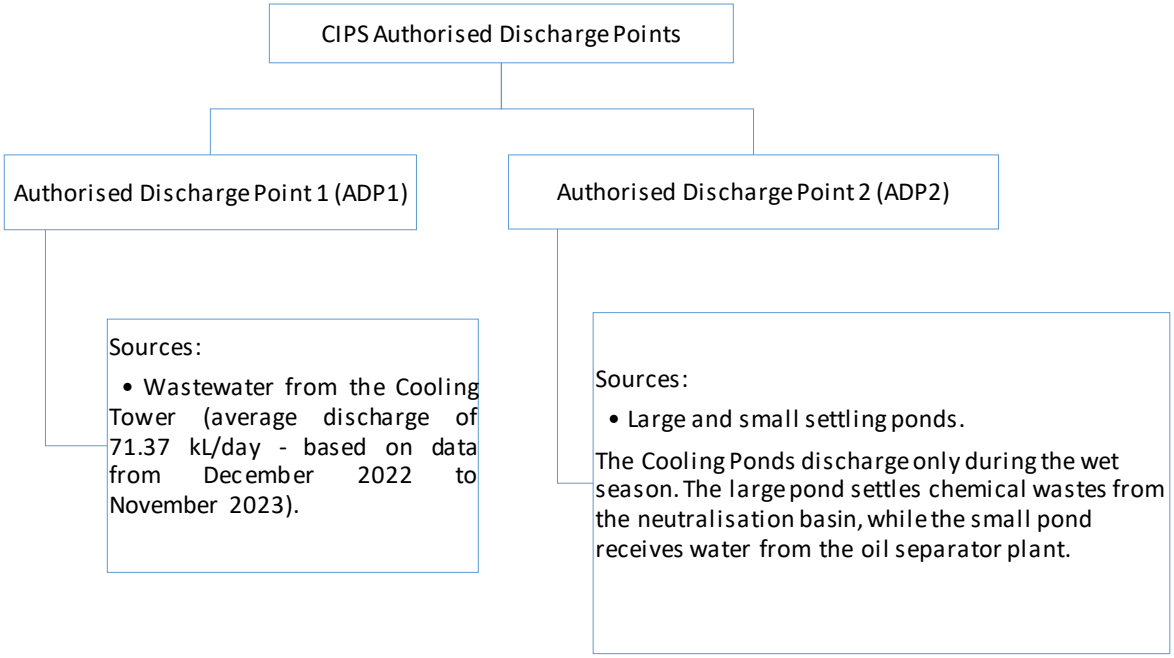

Figure 3: Wastewater sources at CIPS Authorised Discharge Points.

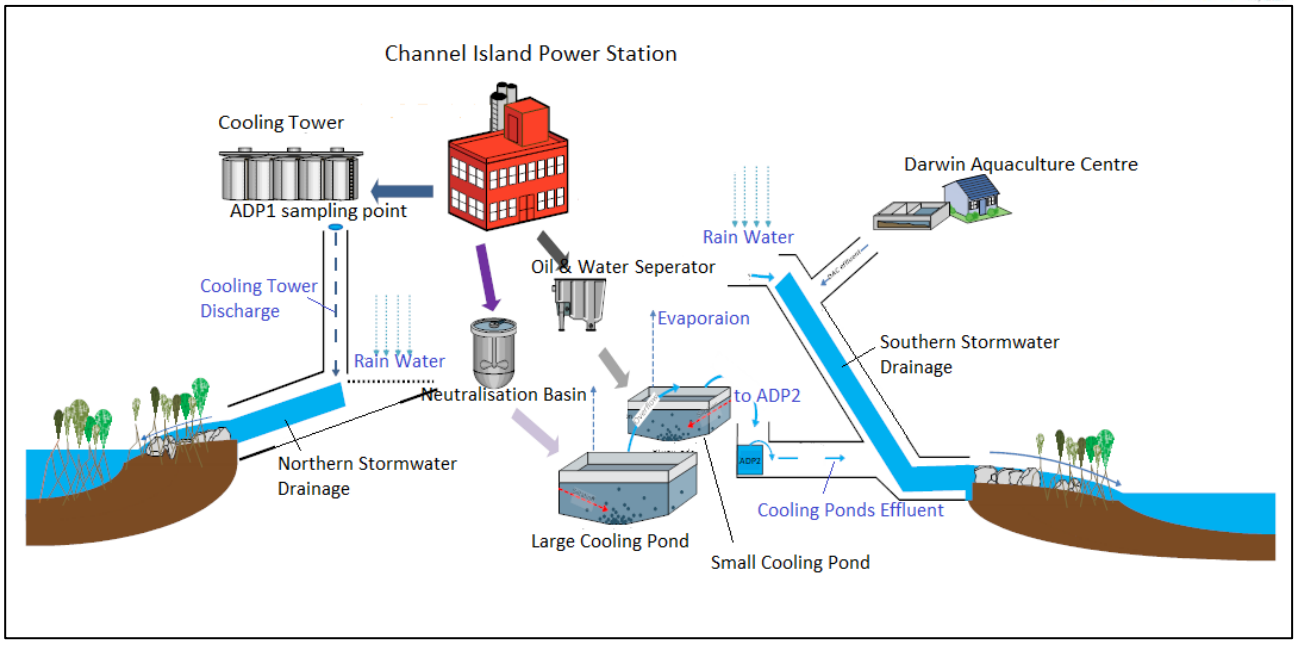

Figure 4: Channel Island Power Station wastewater discharge facility.

Climate

Darwin experiences tropical climate with distinct wet and dry seasons. The dry season typically occurs between May to September, which is dominated by dry south easterly trade winds, creating conditions of relatively low humidity, clear skies, and cooler temperatures. Rainfall is rare during the dry season. The wet season (late-December to April) is characterized by warm temperatures, high humidity Northwest winds from the coast and frequent rainfall events. Rain is usually associated with monsoonal troughs, although tropical cyclones also produce strong winds and heavy rain over localized areas. The 'build-up' period (October to mid-December) describes the transitional phase between the end of the dry and the onset of the wet seasons. It is characterized by high temperatures and high humidity, with sporadic convective storms of varying intensity.

Rainfall events during the build-up and wet seasons typically result in increased stormwater infiltration into CIPS stormwater drainage networks as well as the cooling ponds. This leads to a substantial increase in water levels in the cooling ponds as rainfall generally exceeds evaporation rates.

2 METHODS

CIPS Monitoring sites under WDL212-03

2.1.1 Water and wastewater monitoring sites

Wastewater monitoring was undertaken at six (6) sites from April 2016 to May 2018 under WDL 212. Four marine water sites located in Darwin Harbour were added to the monitoring program from July 2018 under WDL 212-01. All ten (10) sites including the four additional marine sites continued to be monitored under WDL212-02. However, under WDL212-03, the four marine sites were removed from the monitoring program leaving only the six (6) land-based sites. Nevertheless, Darwin Harbour water monitoring sites were continued to be monitored on a quarterly basis in the interest of environmental health of the receiving environment. The data is not presented in this Annual report but can be provided to the NTEPA upon request. All site codes, site descriptions and site coordinates for the present monitoring program are shown in Table 1. Figure 5 shows the relative location of all monitoring sites defined in WDL212-03. Signage identifying each land-based sampling site are shown in Figure 6.

Table 1: Water and Wastewater Monitoring Sites

Site Code	Description	Coordinates (degrees)
SODH1	Southern Outlet to Darwin Harbour (Drain prior to mixing in receiving environment)	Lat: -12.560474 Long: 130.862878
NODH1	Northern Outlet to Darwin Harbour (Drain prior to mixing in receiving environment)	Lat: -12.554271 Long: 130.863497
ADP1	Cooling Tower Wastewater Discharge (Representative of discharge from cooling tower to drainage system that flows to NODH1)	Lat: -12.554760 Long: 130.864906
ILCP	Large Cooling Pond Influent	Lat: -12.555856 Long: 130.86405
ISCP	Small Cooling Pond Influent	Lat: -12.556194 Long: 130.863885
ADP2	Cooling Ponds Wastewater Discharge (Representative of discharge from cooling ponds to drainage system that flows to SODH1)	Lat: -12.556570 Long: 130.863595
SODH3	Southern Discharge Point Mixing Zone (marine)	Lat: --12.560221 Long: 130.863668
SODH4	Southern Receiving Environment Monitoring Point (marine)	Lat: -12.560540 Long: 130.864483
NODH3	Northern Discharge Point Mixing Zone (marine)	Lat: -12.555015 Long: 130.862802
NODH4	Northern Receiving Environment Monitoring Point (marine)	Lat: -12.555441 Long: 130.861803

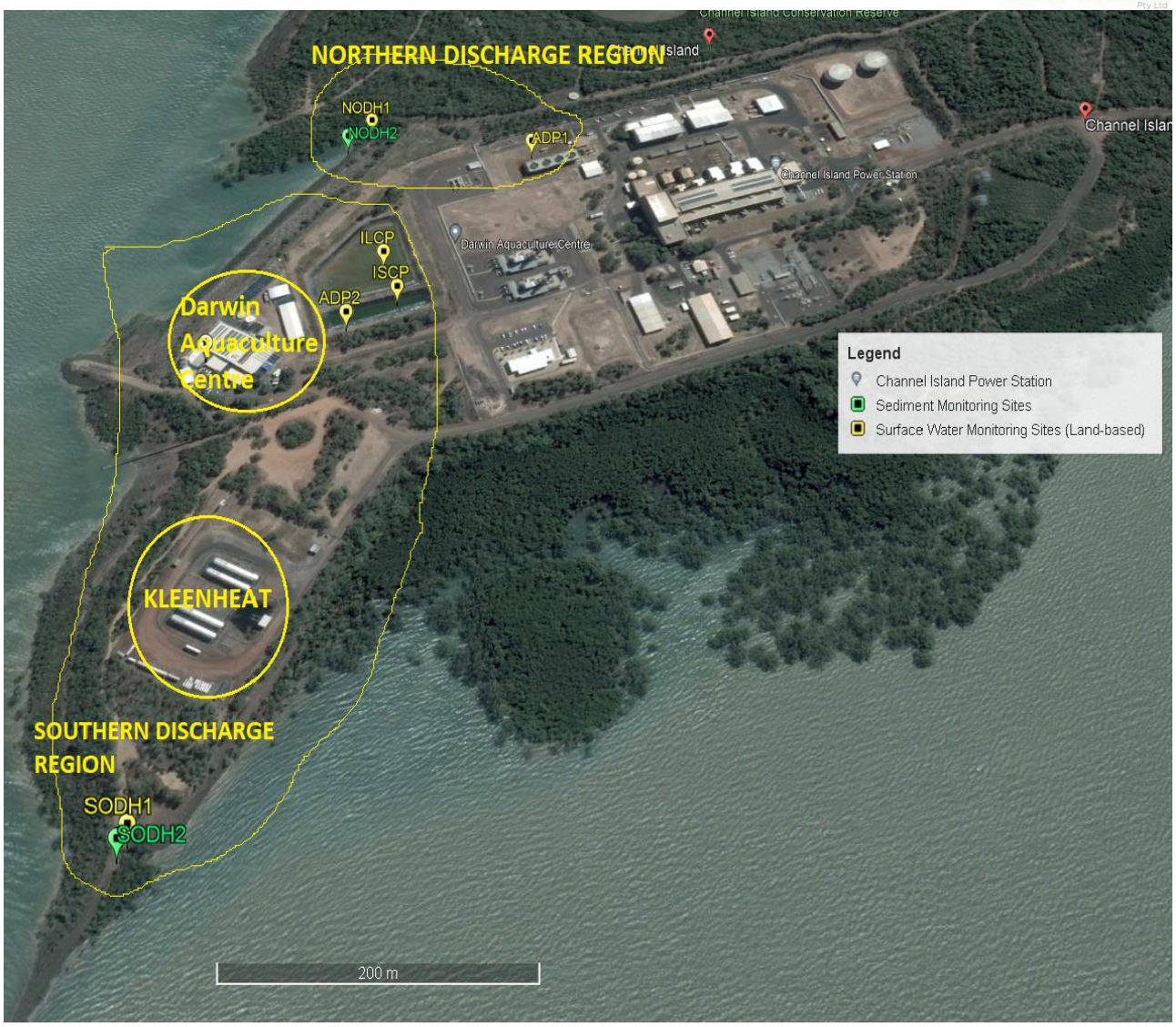

Figure 5: CIPS water and sediment monitoring sites.

Figure 6: Monitoring signs at land-based sites.

2.1.2 Sediment Monitoring sites

Sediment samples in the receiving environment were collected within the area of potential CIPS wastewater discharge impact in Darwin Harbour (i.e., in the vicinity of sites NODH1 and SODH1) (See Figure 5). The monitored sites are as follows:

- NODH2 - outfall from NODH1 (Lat: -12.554453˚ and Long: 130.863358˚)
- SODH2 - outfall from SODH1 (Lat: -12.6560485˚ and Long: 130.862941˚)

Monitoring frequencies and parameters

2.1.3 Water and wastewater monitoring frequencies and parameters

Table 2 shows the water and wastewater monitoring frequencies and parameters analysed under the WDL212-03 monitoring program.

Table 2: Water and wastewater monitoring frequencies and parameters analysed.

Sites	Monitoring frequency	Parameters
SODH1 NODH1 ADP1 ADP2	Monthly	• Total and Filtered Metals (Aluminium, Arsenic, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Nickel, and Zinc) • Nutrients/Suspended Solids (Total Phosphorous, Total Nitrogen and Total Suspended Solids) • Hydrocarbons (Total Petroleum Hydrocarbons, Polycyclic aromatic hydrocarbons, Benzene, Toluene, Ethylbenzene and Xylenes) • In-situ or Field parameters (Flow rate, Temperature, pH, Turbidity, Electrical Conductivity, Free Chlorine, and Dissolved Oxygen % Saturation)
ILCP ISCP NODH3 NODH4 SODH3 SODH4	Quarterly	

2.1.4 Sediment monitoring frequencies and parameters

Sediment monitoring under WDL212-03 is scheduled to be undertaken annually at sites NODH2 and SODH2. Parameters to be analysed for includes metals (Aluminium, Arsenic, Cadmium, Chromium, Cobalt, Copper,

Lead, Mercury, Nickel, and Zinc) and Hydrocarbons (Total Petroleum Hydrocarbons, Polycyclic aromatic hydrocarbons, Benzene, Ethylbenzene, Xylenes and Toluene).

Sampling procedure

As per Waste Discharge Licence WDL212-03, TW undertook sampling and monitoring in accordance with the *Australian Guidelines for Water Quality Monitoring and Reporting* (AS/NZS 5667; ANZECC/ARMCANZ, 2000).

2.1.5 In-situ measurements

In-situ measurements of Temperature, Electrical Conductivity (EC), Dissolved Oxygen, pH and Salinity at the two (2) Authorised Discharge Points, two (2) discharge outlets and two (2) cooling ponds, were achieved using a Horiba U-52G multiparameter probe. A Hach 2100Q Turbidimeter and a Hach DR300 Pocket Colorimeter were used for *in-situ* measurements of Turbidity and Free chlorine, respectively. Samples for *in-situ* measurements were collected from the part of water that provides representative (well mixed) samples at each of the designated sampling points. Field instruments were calibrated prior to each sampling event and post-field checks are undertaken after each sampling event to ensure the instruments' continued operation within the manufacturer's specifications. All calibration records are available upon request.

2.1.6 Sampling for nutrients, metals, and hydrocarbons analyses

The monthly wastewater samples for nutrients, metals, and hydrocarbon analyses from ADP1 and ADP2 sampling points were obtained from the outflow at the installed v-notches, while samples from SODH1 and NODH1 were collected from the outflow of the drainage pipes, all using a sampling pole. The quarterly samples at the cooling ponds ILCP and ISCP sites were obtained 0.2 m below the water surface using a sampling pole.

SODH1 intermittently had significant saltwater influence from the Darwin Aquaculture Centre and/or tidal influence of water pooling at the SODH1 sampling site. Hence, EC or Salinity of the water had to be determined prior to sample collection. This ensured that the appropriate method of analysis (marine or freshwater analysis) was undertaken by the receiving laboratory.

All collected samples were delivered to Australian Laboratory Services (ALS) Darwin – Environmental located at Woolner. ALS Darwin – Environmental arrange overnight transport of the samples to ALS Sydney – Environmental (NATA Accreditation No. 825) for analysis.

2.1.7 Sediment sampling

Annually sediment samples, as per the monitoring program in WDL212-03, at sites NODH2 and SODH2 were obtained using a stainless-steel Ekman grab sampler that can dig up to 15 cm of depth into the sediment. Samples obtained in one successful collection were mixed until the samples were homogenised. An approximately 700 g of sediment sample is collected at each site and stored in two (2) 250 mL glass jars provided by ALS.

Sediment samples obtained were also delivered to Australian Laboratory Services (ALS) Darwin– Environmental located at Woolner on the same day of collection. Analysis for hydrocarbons and metals is undertaken by ALS Sydney – Environmental (NATA Accreditation No. 825).

Quality Assurance/Quality Control

Quality Assurance / Quality Control (QA/QC) measures for the water and sediment monitoring were in accordance with AS/NZS 5667 and ANZECC & ARMCANZ, where applicable and included:

- Appropriate sample labelling, preservation, storage, and transport under chain of custody procedures.

- Laboratory analyses undertaken within appropriate holding times.
- Analysis of laboratory QA/QC samples including duplicates, blanks, matrix spikes, matrix spike duplicates, and surrogates.
- The use of laboratory that holds NATA accreditation for the analyses to be undertaken within the NATA registration of the laboratory.

The QA/QC controls are considered adequate as per the relevant standards and guidelines. The results of the internal quality assurance programs of the laboratory are presented with the NATA test certificates (Appendix).

3 RESULTS

Wastewater Discharge Monitoring Results

A detailed discussion on results obtained during the current reporting period (December 2022 to November 2023) is included in this section. Monitoring results were compared to the trigger values specified in WDL212-03, where available. *Trigger Values for contaminants in water are only applicable to discharges at **ADP1** and **ADP2** for **WDL212-03** incident notification. As detailed in Appendix 2 (Page 20) of WDL212-03; "Trigger Values specified in WDL212-03 for metals and metalloids in water apply to filtered/dissolved fraction only".*

WDL212-03 Licence Item 10 states:

> *Notifiable incidents with this licence include:*
>
> *An exceedance of a trigger value of a limit specified in item 7 at the compliance point in item 8, on three consecutive sampling occasions;*
>
> *(a) A measurement outside the range for pH or DO specified in item 7 at the compliance point in item 8, on three consecutive sampling occasions;*
> *(b) An exceedance of three or more times a trigger value specified in item 7 at the compliance point in item 8;*
> *(c) A discharge at a point not specified on item 5;*
> *(d) A discharge from a source not specified in item 6;*
> *(e) A failure to comply with condition 23.*

Where result of monitoring is outside the range of the relevant Trigger Value specified in WDL212-03 (whether the out of limit requires a "notification" under WDL212-03 or not), the result is shown in **Bold** font. Where result of monitoring is out of range of relevant Trigger Value specified in WDL212-03 and requires "notification" under WDL212-03, the result is shown in **Bold Red** font.

Certificates of Analysis incorporating laboratory Limit of Reporting (LOR) and QA/QC information are provided in the Appendix. Where results are reported as less than (<) a value, this is less than the relevant laboratory LOR. Variations in LOR for the same parameter are generally related to the sample matrix (e.g., saline water compared to non-saline water). Refer to the Appendix for further information relating to laboratory LOR.

Where monitoring results are less than the laboratory Limit of Reporting, results are replaced with a value equal to the LOR for graphing and statistical interpretation. There is no data at some sites due to no discharge occurring at the time of monitoring. Out of the twelve sampling events undertaken during this reporting period, no discharge was reported for ADP1 on five occasions. Subsequently, no discharge at ADP1 resulted in no discharge at NODH1 on three occasions. No flow was also recorded on four occasions at site ADP2 within the twelve sampling events. Further, no flow (or minor flow) at ADP2 resulted in no discharge on six occasions at SODH1. Monitoring results for some parameters at ADP2, NODH1 and SODH1 are not reported for the December 2022 sampling event as samples were damaged in transit and subsequently could not be analysed upon arrival at the receiving laboratory.

3.1.1 Results of in-situ parameters where WDL212-03 Trigger Values are specified

Temperature

Figure 7 and Figure 8 below show the results of water Temperature measured at the discharge/monthly monitoring sites (ADP1, ADP2, NODH1 and SODH1) and the cooling ponds/quarterly monitoring sites (ILCP and ISCP), respectively. Maximum and minimum Trigger Values for Temperature stated in WDL212-03 are

shown in pink and red dash lines, respectively. During the reporting period, Temperature was within the range of 26.5 – 32.6 °C and 26.2 – 33.1 °C at ADP1 and ADP2, respectively. Water Temperature at ADP1 and ADP2 was within the trigger value range specified in WDL212-03 (15 °C – 35 °C). As such, no notifiable incident was recorded for Temperature within the monitoring period (December 2022 to November 2023). Water Temperature ranged between 26.6 °C and 35.7 °C at the outlets of the drains (SODH1 and NODH1) prior to mixing in Darwin Harbour (Figure 7).

As shown in Figure 8, Temperature at the Cooling Ponds (ILCP and ISCP) sites varied between 27.7 and 34.2 °C during the reporting period. All water Temperature data, including results for ADP1, ADP2, NODH1, SODH1, ILCP and ISCP are tabled in Additional data section (Table A1). With the exception of some recorded high Temperatures above the maximum trigger value in at ADP1 in 2016, 2017 and 2019, Temperature at ADP1 and ADP2 remains relatively stable and within the trigger value range from 2016 to 2023.

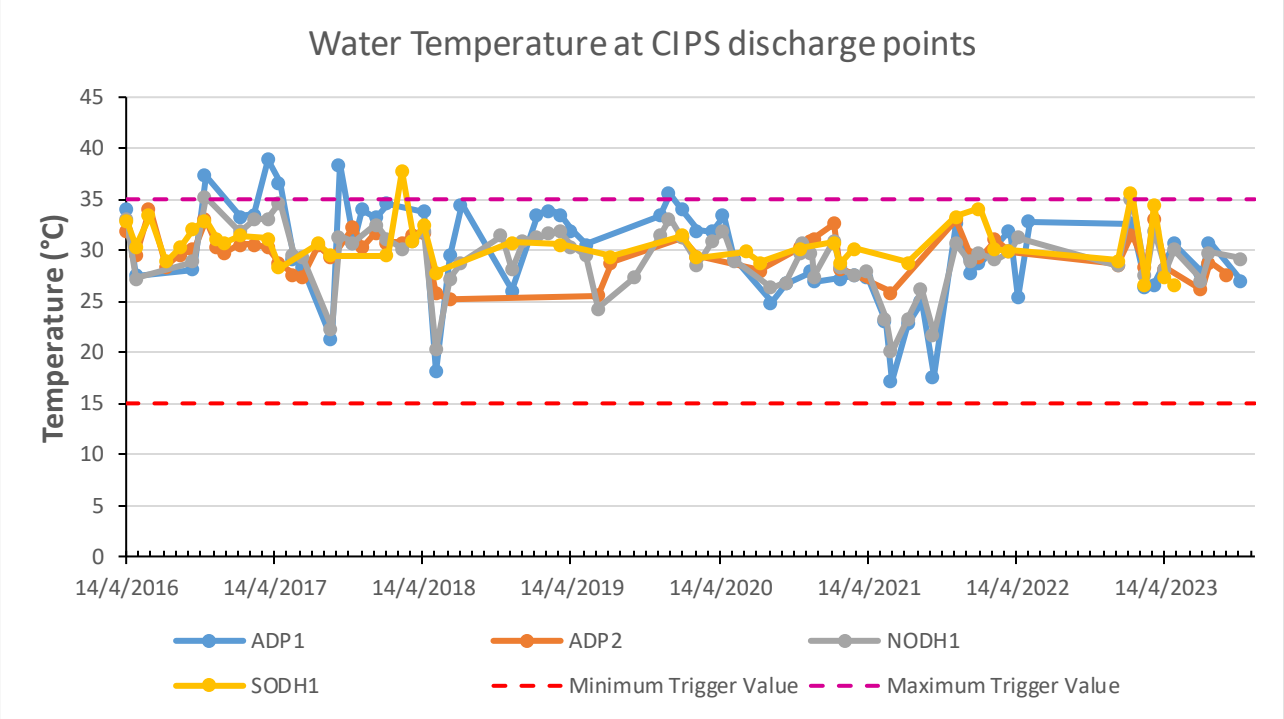

Figure 7: Water Temperature (°C) at monthly monitoring sites from December 2022 to November 2023.

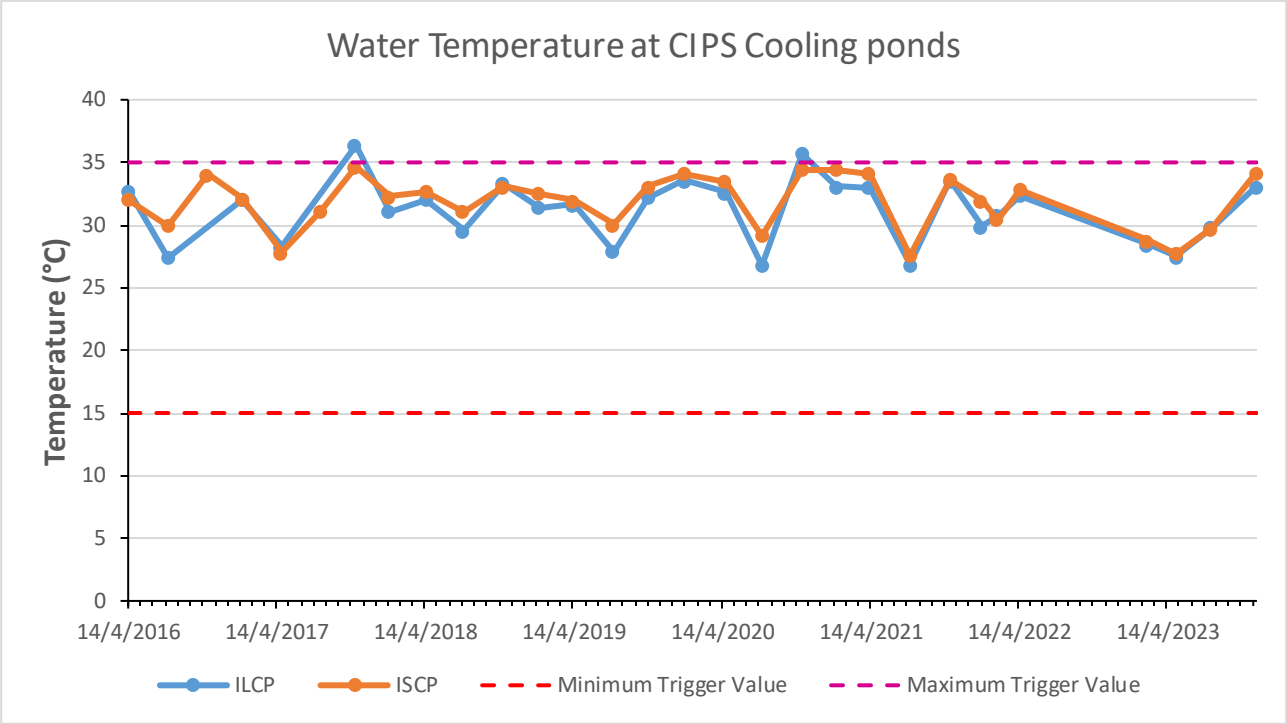

Figure 8: Water Temperature (°C) at quarterly monitoring sites from December 2022 to November 2023.

Dissolved Oxygen

Figure 9 and Figure 10 shows Dissolved Oxygen % Saturation (DO % Sat) at the discharge/monthly monitoring sites (ADP1, ADP2, NODH1 and SODH1) and the cooling ponds/quarterly monitoring sites (ILCP and ISCP), respectively. Maximum and minimum Trigger Values for DO % Sat specified in WDL212-03 are shown in pink and red colours, respectively. DO % Sat varied from 24.4 % to 111.1 % at discharge sites from December 2022 to November 2023. DO % Sat was below the trigger of >80 % specified in WDL212-03 on 23 January 2023 (**75.8** %), 20 March 2023 (**77** %), 9 May 2023 (**61.2** %), and 19 October 2023 (**75.5** %) at ADP1. Similarly, DO % Sat was below the trigger of >80 % on 23 January 2023 (**64.7** %), 27 February 2023 (**58.5** %), 17 April 2023 (**49.3** %), 13 July 2023 (**52.9** %) and 3 August 2023 (**24.4** %) at ADP2. However, DO % Sat measurement was not outside the range for DO trigger value specified in WDL212-03 at the compliance points (ADP1 and ADP2) on three consecutive sampling occasions from December 2022 to November 2023 monitoring events. Hence no notifiable incident at the specified compliance points was recorded for DO % Sat within the monitoring period (December 2022 to November 2023). Several factors including high Temperature, the reduction in nutrient concentrations (decomposition or nitrification) and limiting water contact with the atmosphere could contribute to the reduction of DO saturation at ADP1 and ADP2 (Rounds, 2002).

DO % Sat varied between 56.5 % and 100.4 % at the cooling ponds sites from December 2022 to November 2023. Except for DO % Sat on 3 August 2023 (96 %) at ILCP and on 22 November 2023 (100.4%) at ISCP, the remaining DO % Sat recorded at both ILCP and ISCP was below the trigger of >80 % specified in WDL212-03. Nevertheless, ILCP and ISCP are not compliance points.

Table A2 in Additional data section shows the DO % Sat data at all the CIPS monitoring sites from December 2022 to November 2023 monitoring. DO % Sat has been variable at all monitoring sites from 2016 to date.

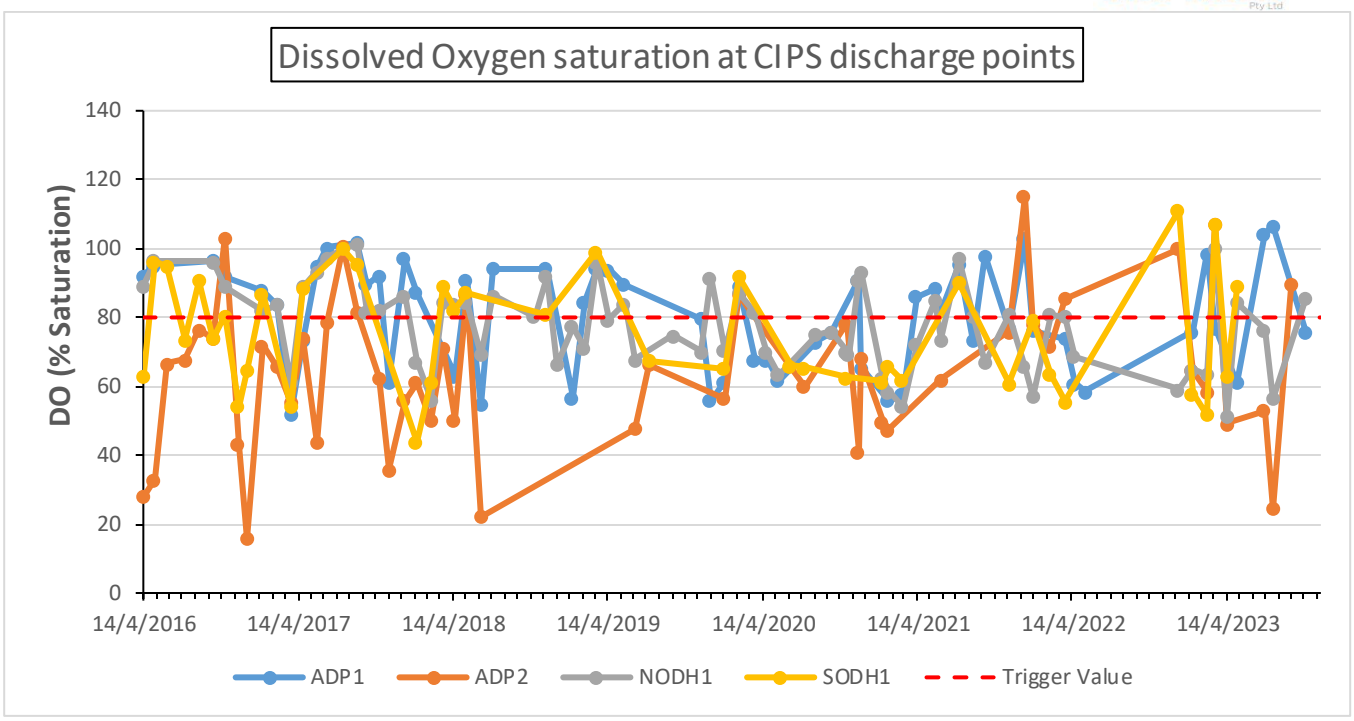

Figure 9: Dissolved Oxygen (% Saturation) at monthly monitoring sites from December 2022 to November 2023.

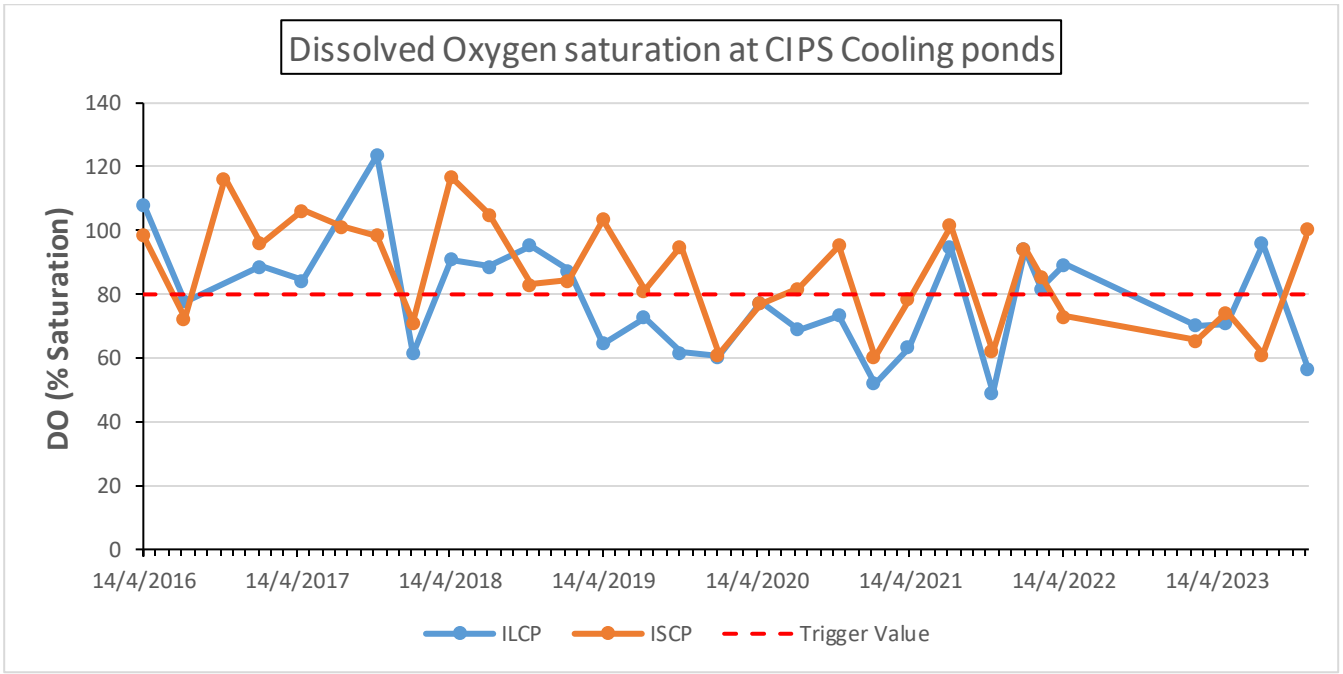

Figure 10: Dissolved Oxygen (% Saturation) at quarterly monitoring sites from December 2022 to November 2023

pH

pH (pH units) at the discharge/monthly monitoring sites (ADP1, ADP2, NODH1 and SODH1) and the cooling ponds/quarterly monitoring sites (ILCP and ISCP), for the sampling events from December 2022 to November 2023 are shown in Figure 11 and Figure 12, respectively. The results were compared with the pH trigger value range specified in WDL212-03 (WDL212-02, 2023). Maximum and minimum Trigger Values for pH in WDL212-03 are shown in pink and red colours, respectively. pH at Authorised Discharge sites (ADP1 and ADP2) varied between 6.16 – 8.85 pH units (Figure 11 and Table A3, in Additional data section) during the reporting period. At the southern and northern outlets (NODH1 and SODH1) sites, pH ranged between 6.45 and 8.84 pH units.

pH was outside the WDL212-03 pH trigger value range of 6.00 – 8.50 pH units at ADP1 on 9 May 2023 (**8.78** pH units) and 3 August 2023 (**8.85** pH units). These exceedances at ADP1 were not recorded on three consecutive sampling occasions. Therefore, there was no notifiable incident at the specified compliance points for pH within the monitoring period (December 2022 to November 2023).

pH at the cooling ponds sites (ILCP and ISCP) varied between 7.95– 9.25 pH units (Figure 12 and Table A3, in Additional data section) during the reporting period. Notification is not required for exceedance of pH units at these sites. Except for low pH recorded at ADP2, NODH1 and ILCP in 2017, Ph variation remains stable at all sites from 2016 to 2023.

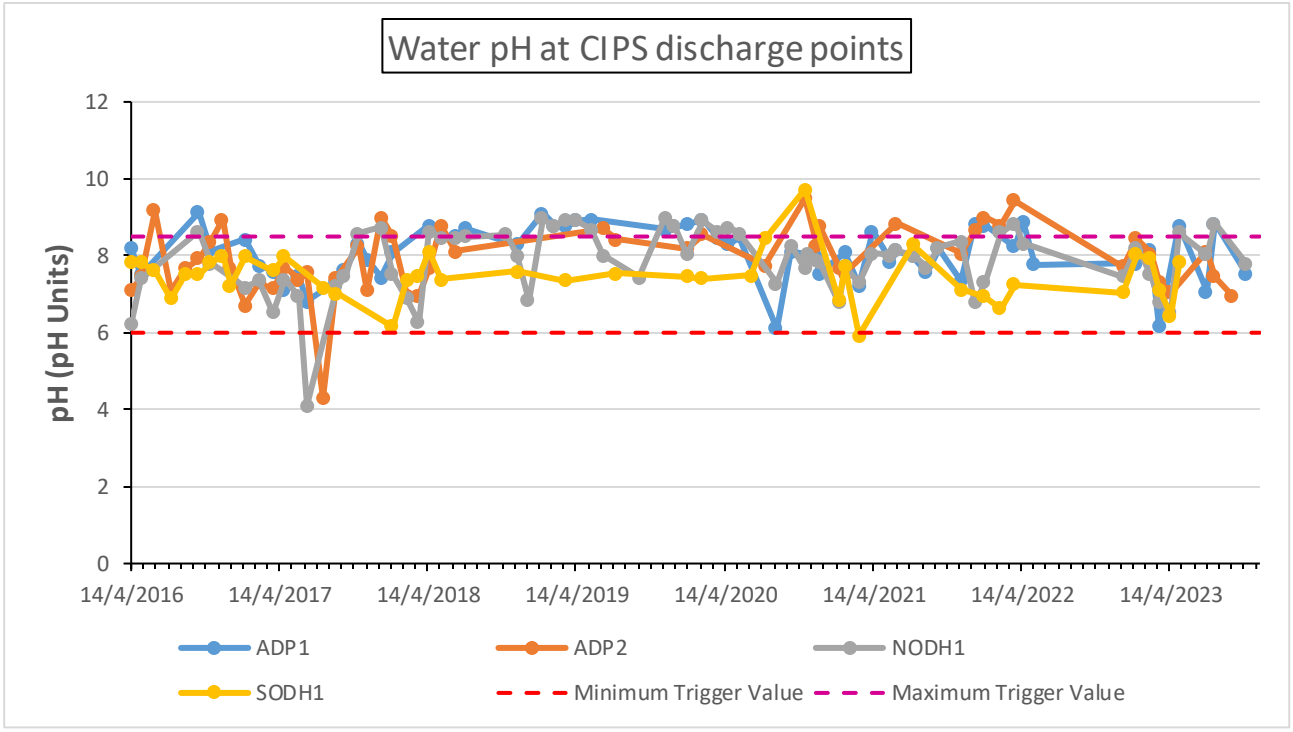

Figure 11: pH (pH units) at monthly monitoring sites from December 2022 to November 2023

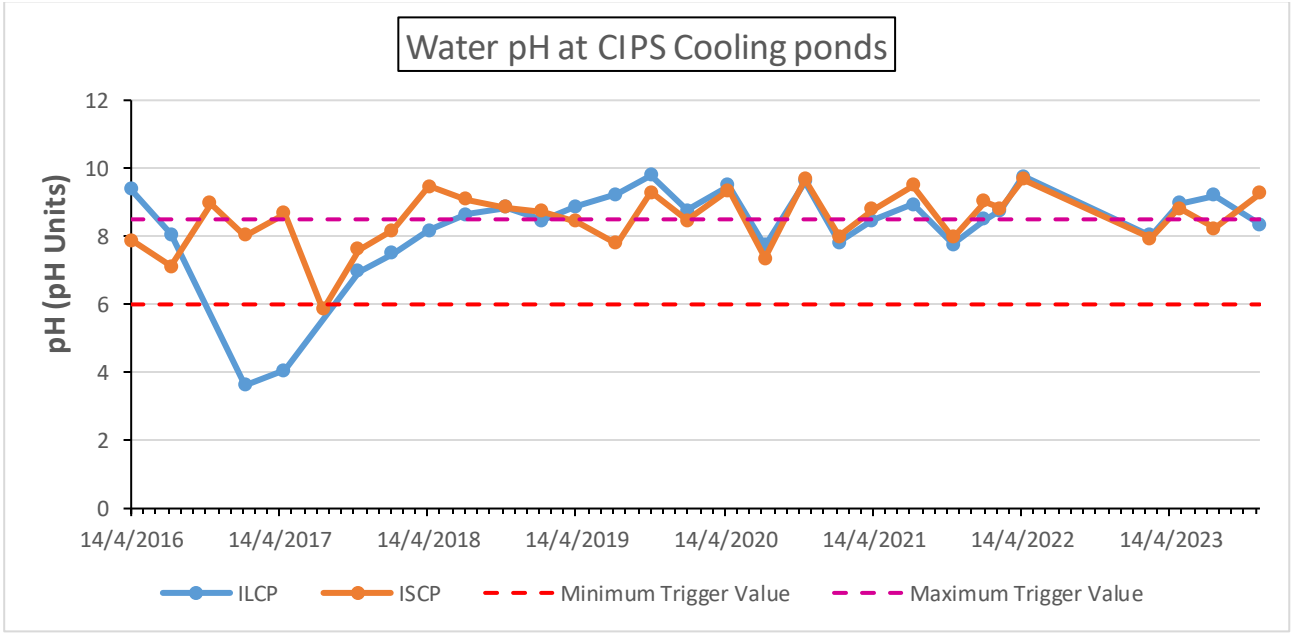

Figure 12: pH (pH units) at quarterly monitoring sites from December 2022 to November 2023

3.1.2 Results of other physical parameters where WDL212-03 Trigger Values are not specified

Electrical Conductivity (EC µs/cm)

The Electrical Conductivity (*EC*) values recorded at all CIPS WDL212-03 water monitoring sites from December 2022 to November 2023 are presented in Figure 13, Figure 14 and Table A4 (in Additional data section). WDL212-03 does not specify trigger value for this parameter. *EC* ranged between 58 – 43100 µs/cm for all sites in this reporting period (December 2022 to November 2023). The lowest *EC* value of 58 µs/cm was recorded on 20 March 2023 at ADP2 while the highest *EC* (43100 µs/cm) was recorded at SODH1 on 9 May 2023. SODH1 intermittently had high EC values because of saltwater influence from the Darwin Aquaculture Centre and/or tidal influence of water pooling at the SODH1 sampling site.

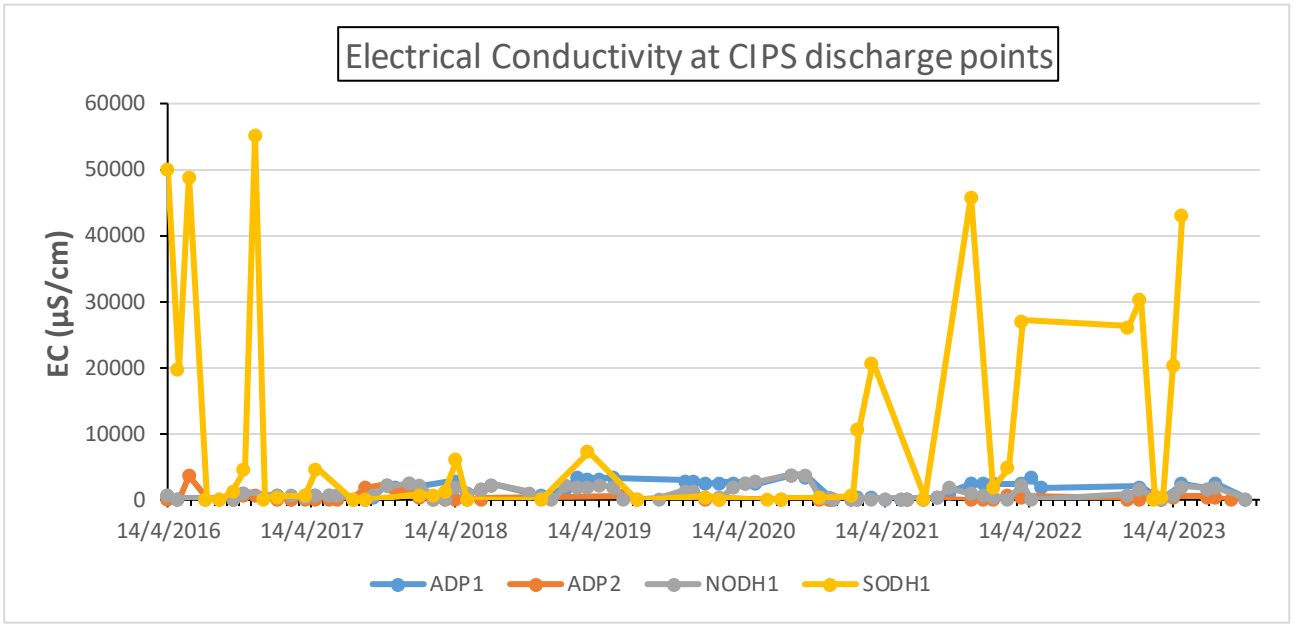

Figure 13: EC (µS) at monthly monitoring sites from December 2022 to November 2023

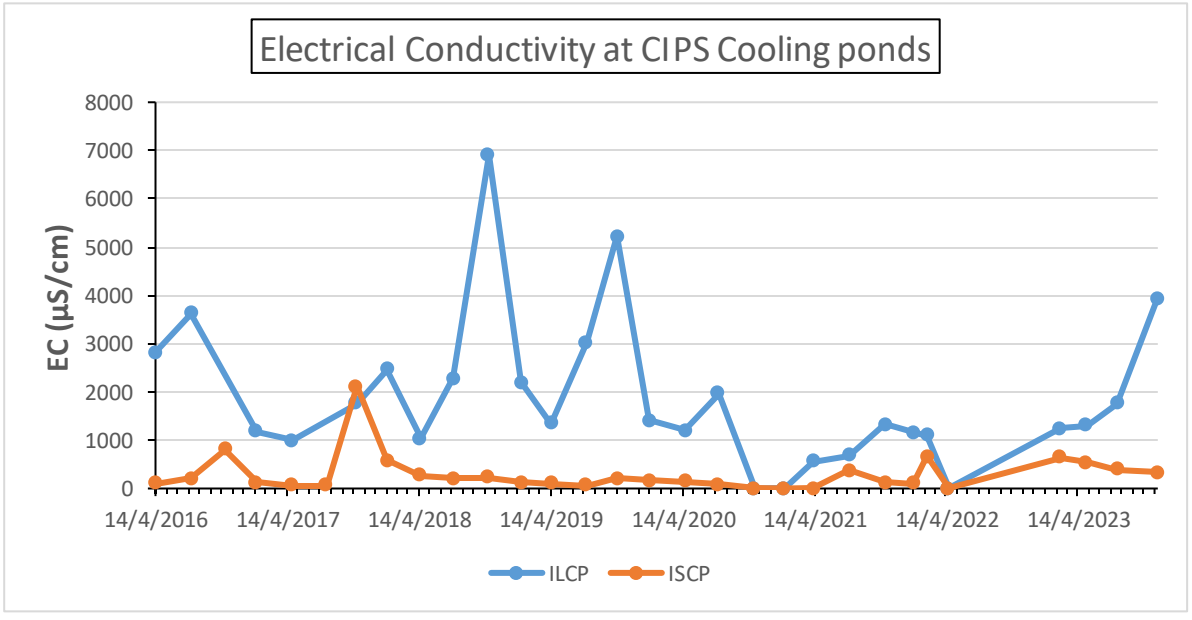

Figure 14: EC (µS) at quarterly monitoring sites from December 2022 to November 2023

Turbidity (NTU)

Recorded Turbidity data from December 2022 to November 2023 at all CIPS WDL212-03 water monitoring sites is shown in Figure 15, Figure 16 and Table A5 (see Additional data section). Turbidity varied between 1.05 NTU and 68.3 NTU from December 2022 to November 2023. The highest Turbidity value (68.3 NTU) was recorded at SODH1 on 27 February 2023. On the other hand, the least Turbidity was recorded on 19 October 2023 at ADP1. WDL212-03 does not specify a trigger value for this parameter. Turbidity remains variable from 2016 to date.

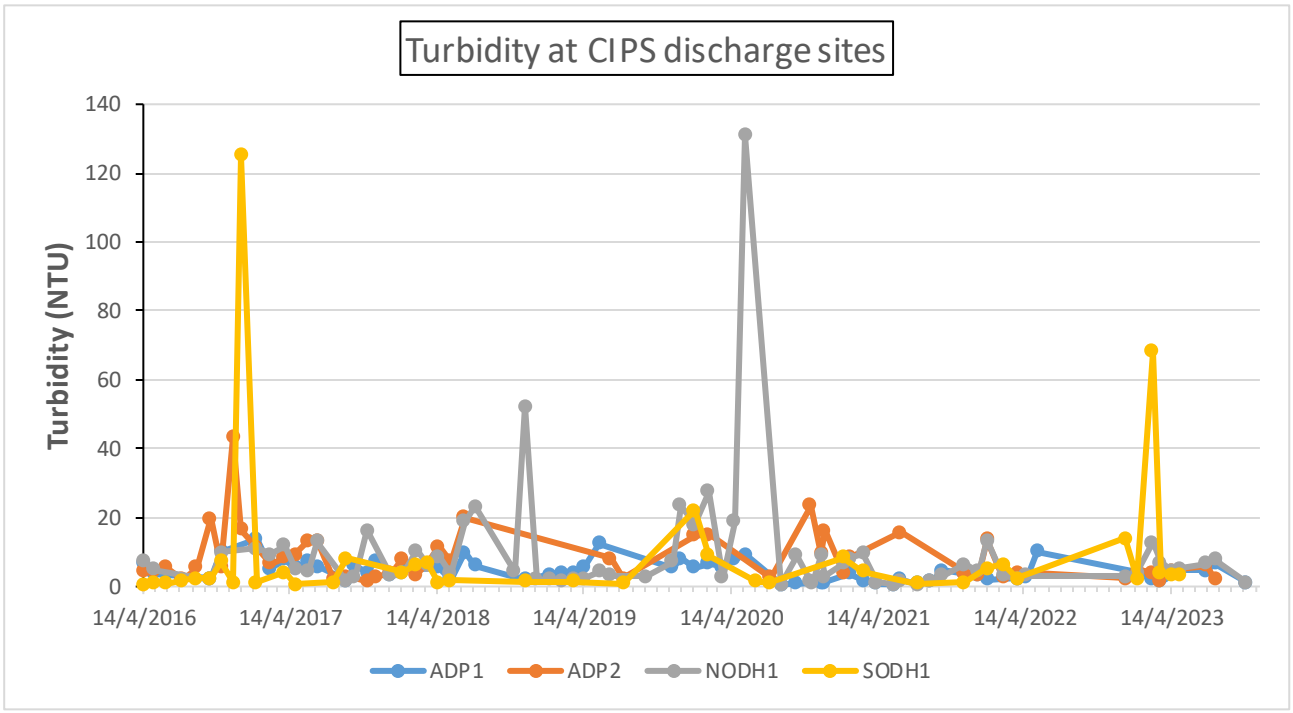

Figure 15: Turbidity (NTU) at monthly monitoring sites from December 2022 to November 2023

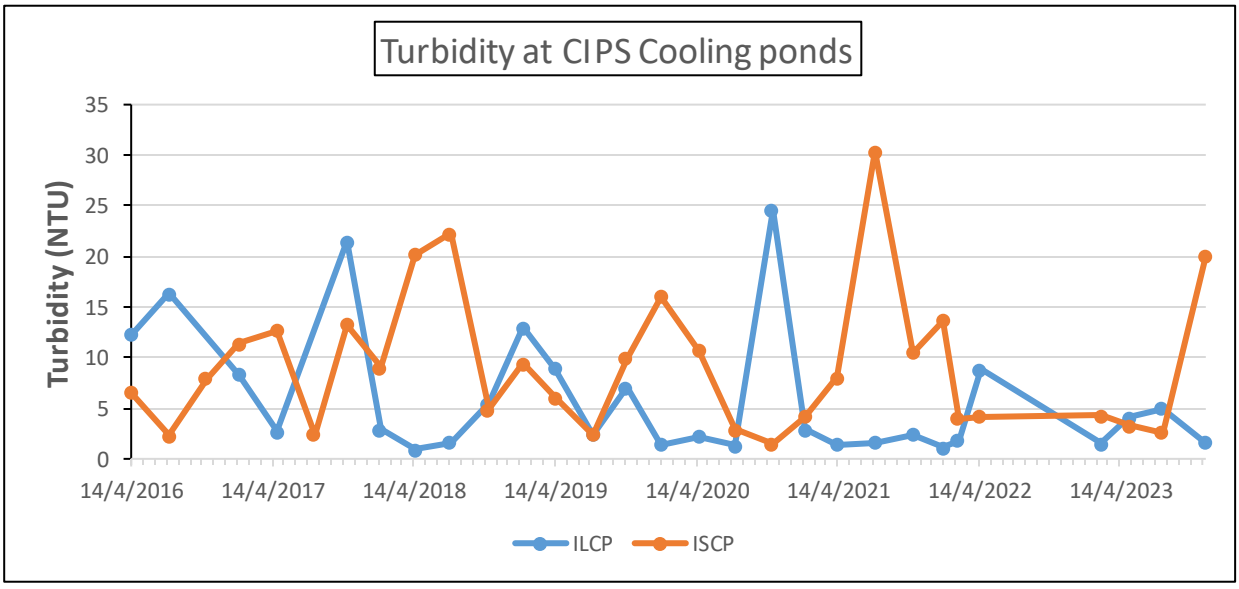

Figure 16: Turbidity (NTU) at quarterly monitoring sites from December 2022 to November 2023

Free Chlorine (mg/L)

Figure 17, Figure 18 and Table A6 (in Additional data section) show Free Chlorine concentrations at all CIPS WDL212-03 water monitoring sites from December 2022 to November 2023. WDL212-03 does not specify a trigger value for this parameter. Free Chlorine concentration varied from below instrument detection limit (0.01 mg/L) to 1.3 mg/L. except for high free chlorine concentration recorded at ADP1 and NODH1 between April 2020 and March 2023, all recorded free chlorine concentration remains below 1.5 mg/L at all monitoring site from 2018 to 2023.

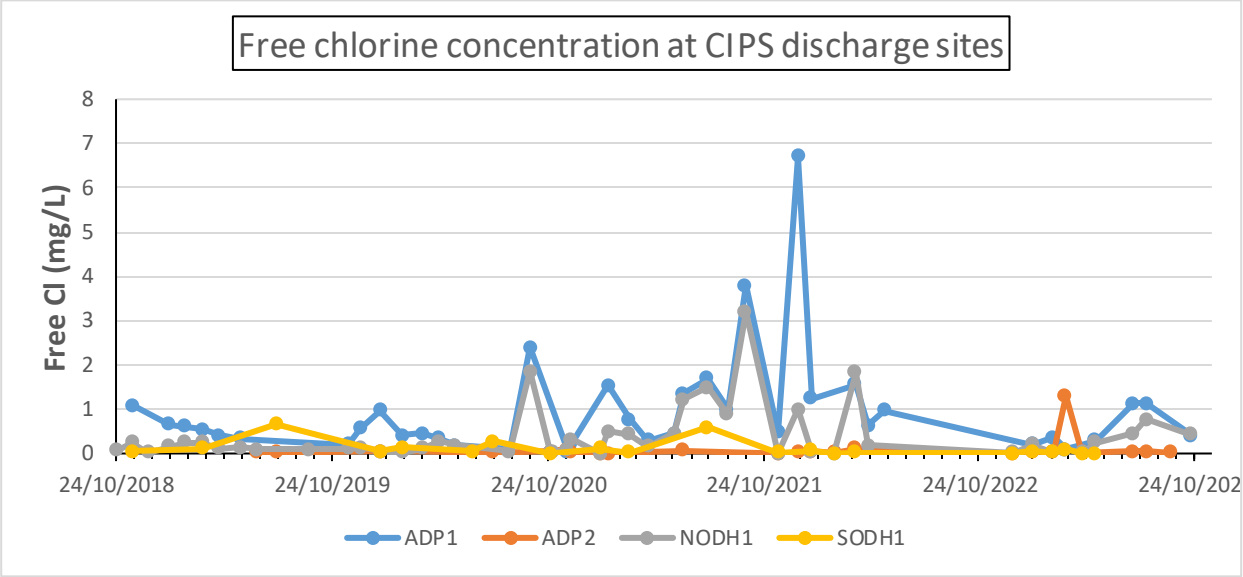

Figure 17: Free Cl (mg/L) at monthly monitoring sites from December 2022 to November 2023

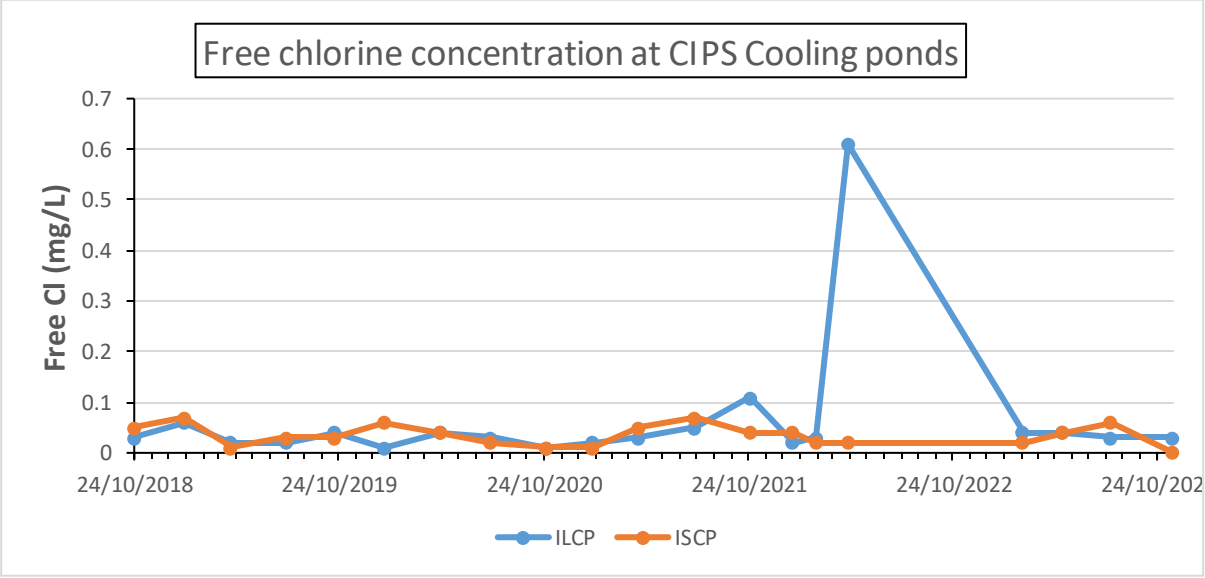

Figure 18: Free Cl (mg/L) at quarterly monitoring sites from December 2022 to November 2023

3.1.3 Results of nutrient and Total Suspended Solids analysis

Figure 19 to Figure 24 and Table A7 to A9 show concentrations of Total Suspended Solids (TSS), Total Phosphorous (TP) and Total Nitrogen (TN) at all CIPS WDL212-03 water monitoring sites (ADP1, ADP2, NODH1, SODH1, ILCP and ISCP). The concentrations were compared with triggers values specified in WDL212-03. Trigger Values for TSS, TP and TN stated in WDL212-03 are shown in red colour, while the pink colour denotes LOR, respectively.

Apart from TSS concentration at SODH1 (**18** mg/L) on 23 January 2023 and at ISCP (**31** mg/L) on 22 November 2023, all TSS, TP and TN concentrations from December 2022 to November 2023 were either below or equal to their respective trigger values (10 mg/L (TSS), 30 mg/L (TP) and 300 mg/L (TN)) specified in WDL212-03 (2022). The exceedance of TSS trigger value at SODH1 and ISCP does not constitute a notifiable incident under WDL212-03. As such, no notification was reported for TSS, TP and TN in this monitoring period (December 2022 to November 2023). TN and TP remain stable throughout the years while TSS shows a decreasing trend in this reporting period.

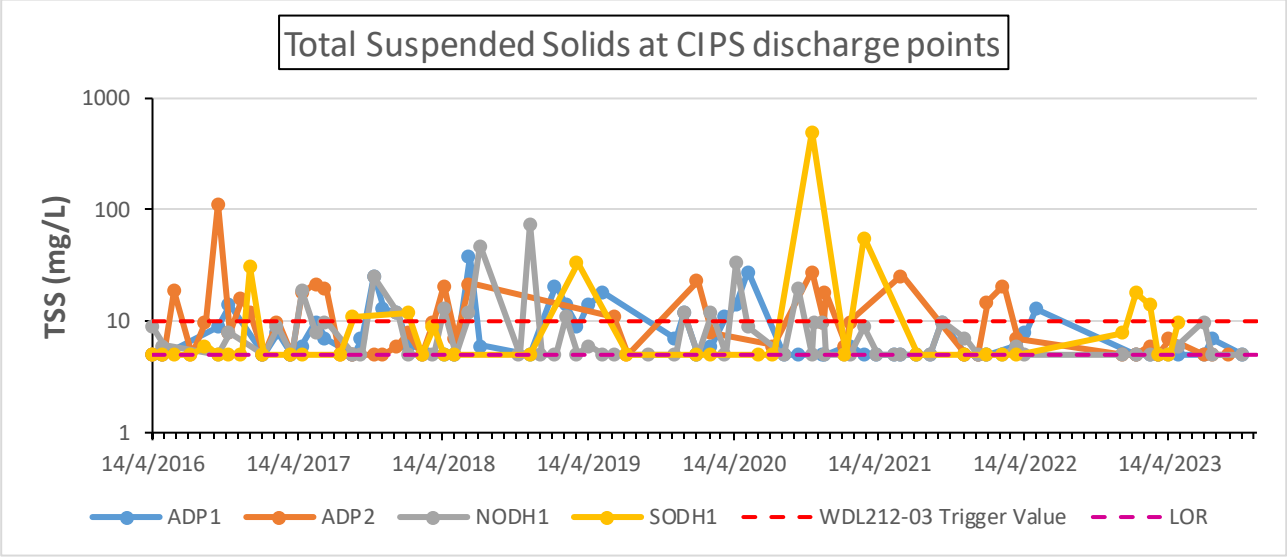

Figure 19: Total Suspended Solids (TSS, mg/L) at monthly monitoring sites from December 2022 to November 2023

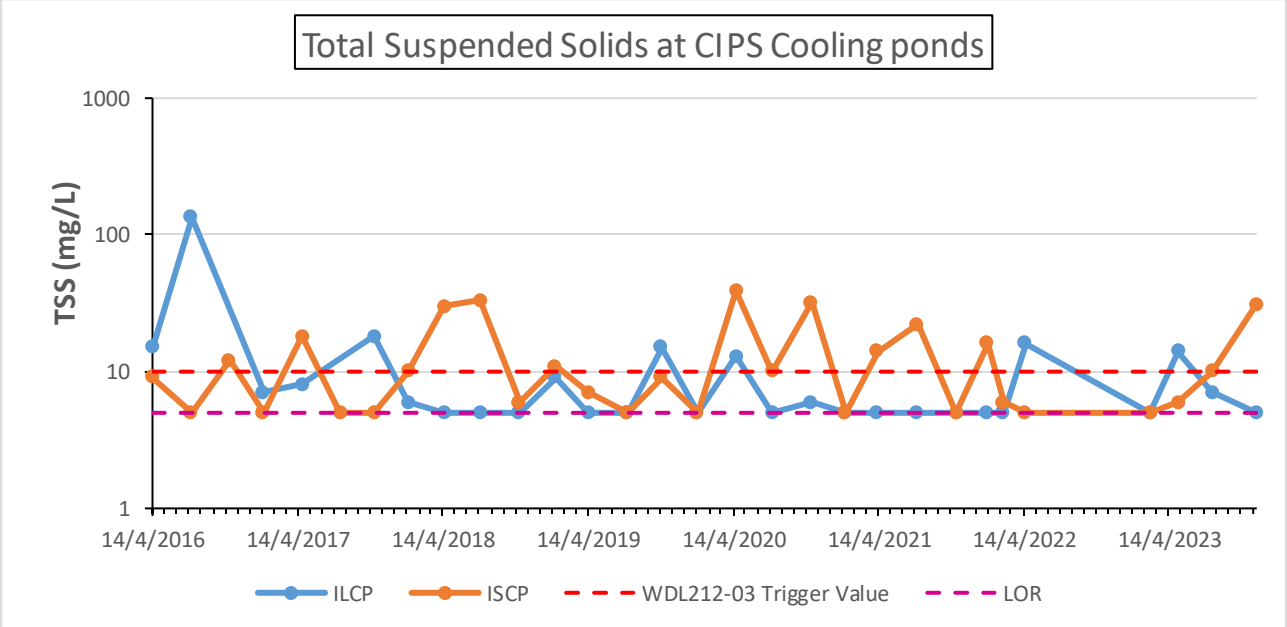

Figure 20 Total Suspended Solids (TSS, mg/L) at quarterly monitoring sites from December 2022 to November 2023

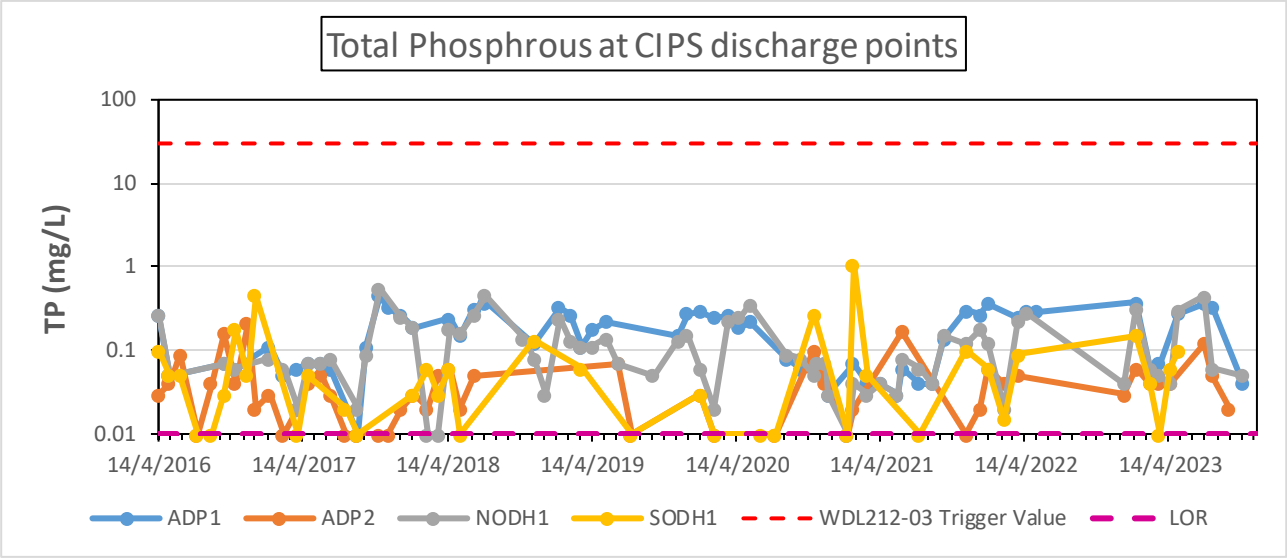

Figure 21: Total Phosphorous concentration (TP, mg/L) at monthly monitoring sites from December 2022 to November 2023

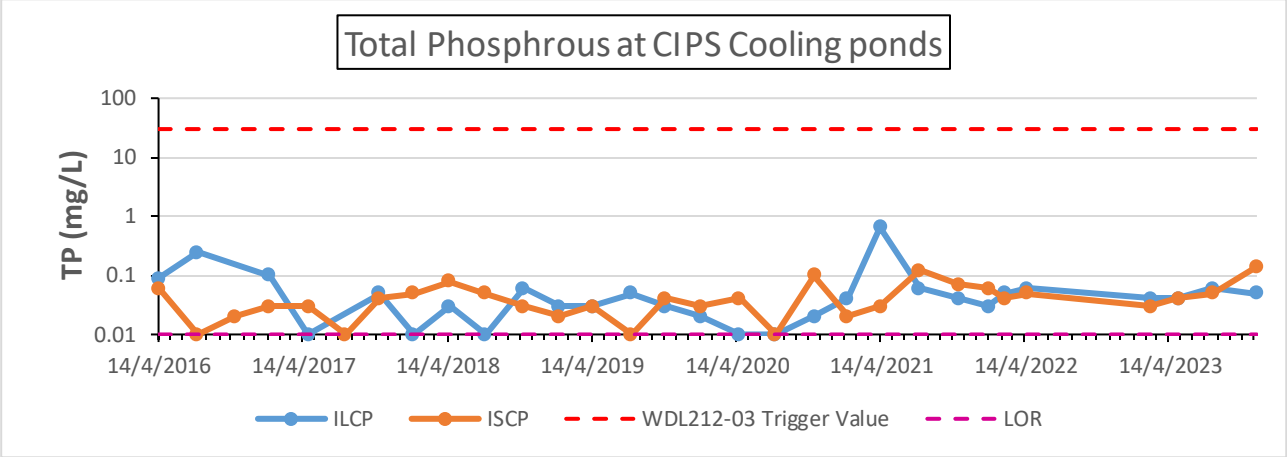

Figure 22: Total Phosphorous concentration (TP, mg/L) at quarterly monitoring sites from December 2022 to November 2023

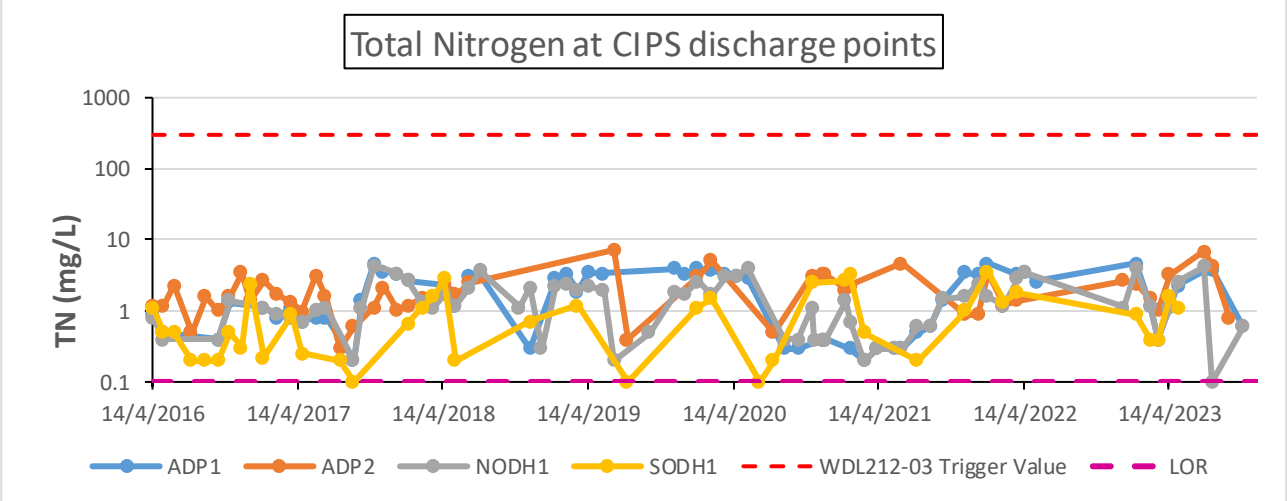

Figure 23: Total Nitrogen concentration (TN, mg/L) at monthly monitoring sites from December 2022 to November 2023

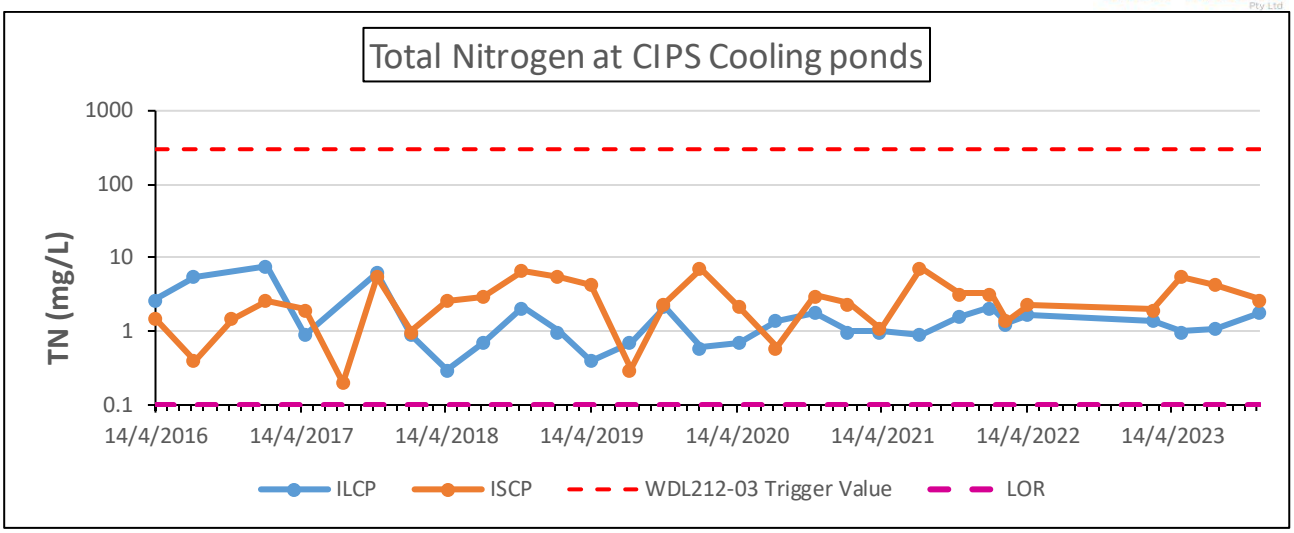

Figure 24: Total Nitrogen concentration (TN, mg/L) at quarterly monitoring sites from December 2022 to November 2023

3.1.4 Results of metal analysis

Water samples were analysed for 10 metal elements (Total and Filtered) as part of the monitoring program and results are shown in Table A10 – A20 (see Additional data section). As detailed in Appendix 2 (Page 20) of WDL212-03; *"Trigger Values specified in WDL212-03 for metals and metalloids apply to filtered/dissolved fraction only"*. Where Laboratory LOR for metals are greater than the specified trigger Values under WDL212-03, the results do not allow for comparison with the trigger Values and are not discussed. These values are denoted with "*".

Trop Water became aware of episodic/irregular contamination of samples consigned for filterable Zinc analysis. The contamination was isolated to filterable Zinc only, whereby filterable results were substantially higher than total Zinc concentrations. The analysing Laboratory (ALS – Environmental, Sydney) advised and assessed that the filterable Zinc results were beyond accepted variation in analytical methods. There was no consistent pattern to this contamination. It is sporadic in nature and occurred across multiple projects, field teams and equipment stocks. Trop Water investigated the potential contamination sources via sampling equipment, techniques, individual staff members, point sources and intermediate consumables. Furthermore, Trop Water involved the analysing Laboratory to assist in determining the source of the contamination. In accordance with Trop Water's commitment to providing samples of the highest possible standard, Trop Water systematically isolated and analysed ultra-pure water in contact with all intermediary consumables (leaching test). Analytical results indicated that the source of contamination was from non-sterile syringes supplied by ALS since mid-October 2022. As such, Trop Water isolated and/or removed all non-sterile syringes supplied by ALS from service.

Therefore, where Filtered Zinc concentrations exceed the corresponding Total Zinc concentration at the same sampling site, the result is not a true representation of the Filtered Zinc concentration. Such results are denoted with "*" and are not compared with Zinc trigger value (21 µg/L) in WDL212-03.

Except for Filtered Copper concentration of **13** µg/L and **22** µg/L recorded at ADP1 on 13 July 2023 and 3 August 2023, respectively, and Filtered Zinc concentration of **44** µg/L at ADP2 on 20 March 2023 (Table A10 and A11), all Filtered metal concentrations were below the trigger values specified for each metal in WDL212-03 at the compliance points (ADP1 and ADP2) (Table A10 and Table A11). These exceedances are less than three times the trigger value of Copper (8 µg/L) or Zinc (21 µg/L) or did not occur in three consecutive sampling period. Therefore, the exceedances do not constitute notifiable incidents under WDL212-03. No

incident notification was reported for metals in surface water in this monitoring period (December 2022 to November 2023).

In general, all filtered metals concentrations in the present monitoring period (December 2022 to November 2023) are comparable to that of from 2019 to 2022 but lower than that from 2016 to 2018.

3.1.5 Results of hydrocarbons analysis

Hydrocarbons concentrations at all the CIPS surface water monitoring sites are given in Table A21 to Table A25, additional data section. WDL212-03 does not specify trigger values for hydrocarbons in water. All hydrocarbons were below the LOR for each chemical at all CIPS water monitoring sites except for C6 – C9 Fraction of Total Petroleum Hydrocarbons (30 µg/L) recorded at SODH1 on 20 March 2023, C10 – C14 Fraction of Total Petroleum Hydrocarbons at ADP2 (260 µg/L (23 January 2023) and 140 µg/L (13 July 2023)), C15 – C28 Fraction of Total Petroleum Hydrocarbons at ADP2 (640 µg/L (23 January 2023), 340 µg/L (17 April 2023), 310 µg/L (13 July 2023) and 370 µg/L (3 August 2023)), ILCP (2160 µg/L (9 May 2023) and 1220 µg/L (3 August 2023) and ISCP (210 µg/L (9 May 2023), 260 µg/L (3 August 2023) and 580 µg/L (22 November 2023)) and C29 – C36 Fraction of Total Petroleum Hydrocarbons at ILCP (60 µg/L (9 May 2023)) and ISCP (100 µg/L (22 November 2023).

The concentration of key hydrocarbons of environmental interest (Benzene, Ethylbenzene, Toluene, and Xylenes (BTEX) as well as Polycyclic Aromatic Hydrocarbons (PAHs)) were all below their respective laboratory LOR. The predominant contributors to Total Petroleum Hydrocarbon (TPH) concentrations recorded were identified within specific fractions. The C6 – C9 Fraction was attributed to petrol range organics (PRO), the C10 – C28 Fraction was considered as diesel range organics (DRO), and the C29 – C36 Fraction was ascribed to motor oils, according to Collins (2007)

Sediment Monitoring Results

Results of sediment monitoring at NODH2 and SODH2 are presented in Table 3. Trigger Values specified for these sites under WDL212-03, are also provided. The sediment samples were collected during the monitoring event undertaken on 3 August 2023.

Certificates of Analysis incorporating laboratory Limit of Reporting (LOR) and QA/QC information are provided in the Appendix. Where results are reported as less than (<) a value, this is less than the relevant laboratory LOR.

Where results of monitoring are elevated above the trigger value (whether or not the result requires "notification" under WDL212-03), the result is shown in **Bold** font. Where results of monitoring are elevated above the trigger value and requires "notification" with WDL212-03, the result is shown in Bold Red font.

3.1.6 Results of metal analysis

Metal concentrations in sediment at SODH2 and NODH2 are shown in Table 3 below. All the metal results for the current reporting period are below WDL212-03 specified trigger values. Also, metals concentrations for the December 2022 to November 2023 period are less than or equal to that of the previous three (3) years, indicating that water/sediment transport from the CIPS facility has not influenced metals concentrations in the sediment of Darwin Harbour.

3.1.7 Results of hydrocarbon analysis

Total Petroleum Hydrocarbons (TPHs), Polynuclear Aromatic Hydrocarbons (PAHs) and BTEX (Benzene, Toluene, Ethylbenzene, Xylenes) concentrations at SODH2 and NODH2 in the December 2022 to November 2023 period and that of the preceding three (3) years were less than the LOR and WDL212-03 specified trigger values for hydrocarbons. On this basis, there is no evidence of influence on Darwin Harbour sediment quality

in terms of hydrocarbon contamination from CIPS discharge. The hydrocarbon results are provided in Table 3 below.

Table 3: Sediment-Chemicals concentrations at NODH2 and SODH2 (Annual monitoring).

			NODH2							SODH2						
Units	WDL212-0	LOR	21/01/2021	13/04/2021	22/07/2021	28/10/2021	13/01/2022	22/02/2022	3/08/2023	21/01/2021	13/04/2021	22/07/2021	28/10/2021	13/01/2022	22/02/2022	3/08/2023
mg/kg	18800	50	12500	6440	11000	22000	15000	19300	10600	6810	4900	9910	8210	13300	14600	10600
mg/kg	20	5	13	11	14	12	10	13	9	9	**10**	**14**	**9**	**13**	11	11.4
mg/kg	1.5	1	1	1	1	1	1	1	1	1	**1**	**1**	**1**	**1**	1	0.1
mg/kg	80	2	28	27	30	41	33	41	28	16	**16**	**27**	**16**	**29**	31	25.3
mg/kg	8	2	6	7	6	8	6	7	6	4	**4**	**6**	**3**	**5**	6	5.4
mg/kg	65	5	7	6	6	11	6	11	6	5	**5**	**6**	**5**	**6**	7	4.6
mg/kg	50	5	10	8	9	11	15	14	6	7	**5**	**9**	**5**	**12**	8	8.5
mg/kg	0.15	0.1							0.1							0.01
mg/kg	21	2	9	9	9	12	10	14	8	5	**5**	8	5	8	10	7.4
mg/kg	200	5	28	32	34	34	27	68	33	13	**17**	**22**	**11**	**21**	24	21.4
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.8	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.5
mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
mg/kg	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
mg/kg	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
mg/kg	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
mg/kg	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
mg/kg	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
mg/kg	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
mg/kg	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
mg/kg	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
mg/kg	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
mg/kg	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
mg/kg	0.5	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.2
mg/kg	0.2	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.5
mg/kg	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Wastewater Discharge and Contamination load

3.1.8 Wastewater discharge at ADP1 and ADP2

Figure 25 and Figure 26 shows the daily discharge (kL/day) and monthly average flow rate (kL/month) of Wastewater discharged from ADP1 (Cooling Tower) from December 2022 to November 2023. For the purpose of calculating contamination loads from a single monthly sample, monthly discharge averages were used. Wastewater discharged from ADP1 feeds into CIPS' Northern Drainage system to the outlet at NODH1 and subsequently to Darwin Harbour.

No discharge occurred (no flow) at ADP1 in December 2022, July 2023 and October 2023. There is no record of discharge for November 2023, as the level transmitter of the flow meter installed at ADP1 developed a fault (Figure 25). Wastewater is discharge at ADP1 when specific water chemistry conditions are met. This is highly unpredictable and dependent on a wide variety of operational conditions of the power generation infrastructure on site. The sporadic and unpredictable nature of discharge from ADP1, results in operational conditions where compliance with condition 30 *(Resample if flow is not occurring)* will not be achieved for a significant number of monitoring events.

The monthly flow rate varied from no discharge (i.e. 0 kL/month) to 12276.83 kL/month during the reporting period (December 2022 – November 2023). The highest discharge occurred in April 2023, while there was no

discharge in December 2022, June 2023 and October 2023 (Figure 26). The total wastewater discharged at ADP1 for the past 12 months was 26.05 ML compared to the preceding year of 43.21 ML. This is because of the increase in the number of cycles the Cooling Tower undergoes prior to discharge, thereby reducing water consumption.

On the other hand, no record of discharge was reported for ADP2 as the installed flow meter developed a fault and was rectified in May 2023. However, no significant discharge that could be detected and measured by the installed flow meter has occurred at ADP2 since May 2023. Discharges occurring at ADP2 after May 2023 were in drips aided by strong winds Discharge at ADP2 typically occurs during the wet season when settling ponds are impacted by rainfall and inflow exceeds evaporation rates. i.e., Flow from ADP2 in the dry season is limited by evaporation rates, which results in the small cooling pond level dropping over one meter below the outfall to ADP2. The seasonally influenced discharge from ADP2, results in operational conditions where compliance with condition 30 (*Resample if flow is not occurring*) will not be achieved for a significant number of monitoring events, and subsequently compromises condition 30 of WDL212-03.

In total, CIPS discharged 26.05 ML of recorded wastewater for the 12-month reporting period (December 2022 to November 2023) from ADP1.

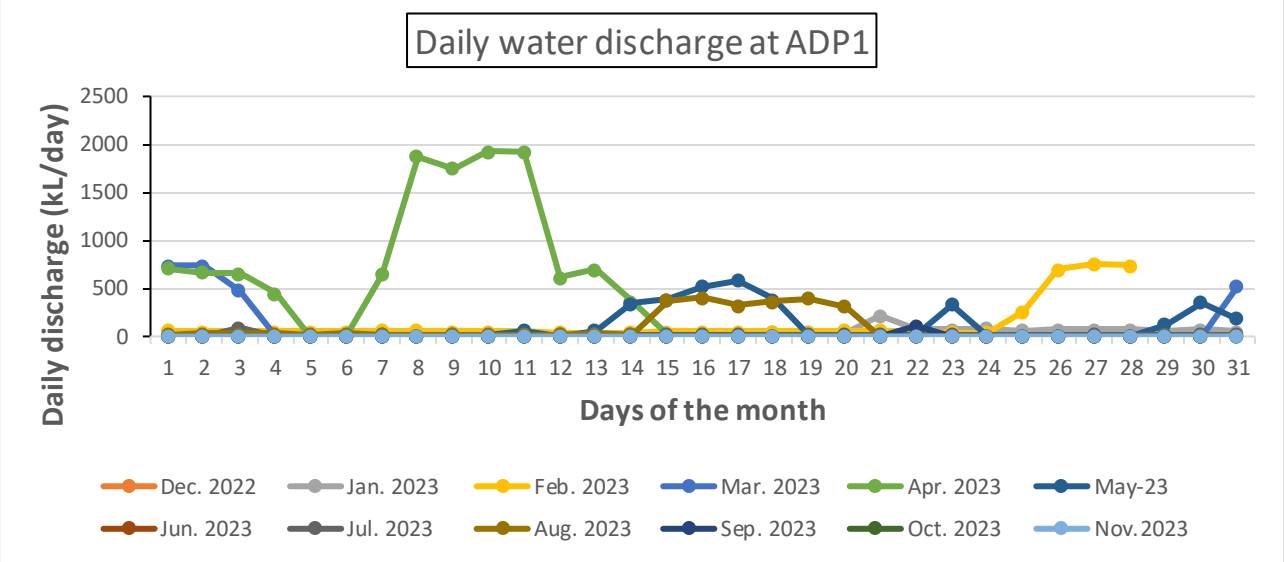

Figure 25: Daily wastewater discharge rate at ADP1 (Cooling Tower) from December 2022 to November 2023.

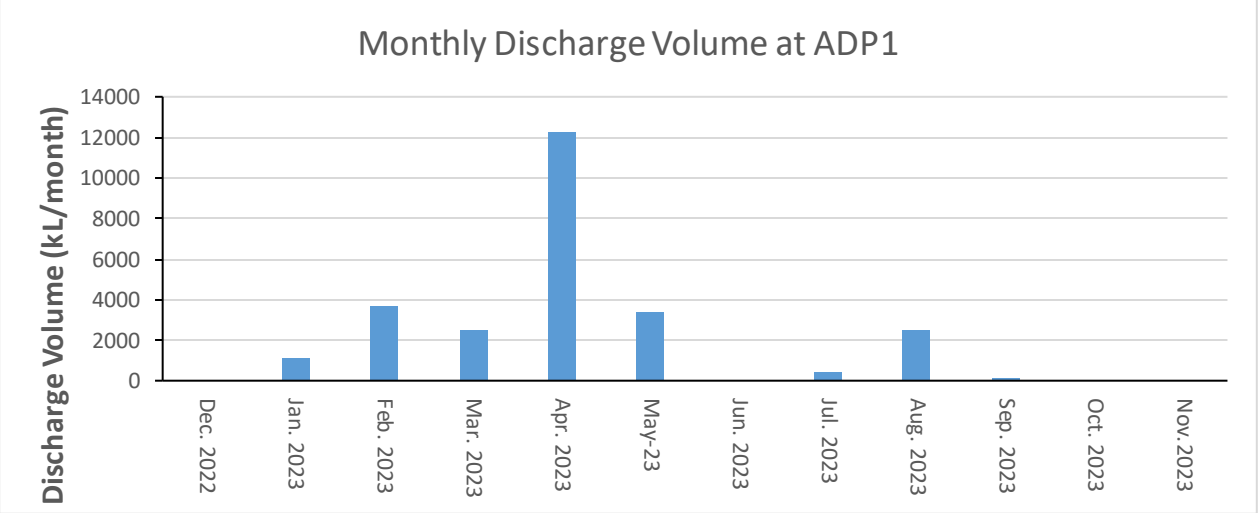

Figure 26: Monthly average wastewater discharge rate at ADP1 (Cooling Tower) from December 2022 to November 2023.

3.1.9 Contamination loads at ADP1 and ADP2

Monthly contamination loads for nutrients, metals and hydrocarbons at ADP1 and ADP2 are shown in Table 4 below. Contamination loads are based on the discharge volume and concentration of contaminants present at ADP1 and ADP2 on the day of monitoring. Days where discharge occurred but no monitoring was undertaken, linear interpolation was used to estimate the contamination loads. Where concentration of contaminant is less than the LOR or it has been established that contamination exist (i.e. concentration of filtered Zinc is more than total Zinc), the absolute value of the LOR was used in the estimation of the contamination loads.

Apart from the estimated contamination loads for Total Nitrogen (TN), Total Phosphorous (TP), Total Suspended Solids (TSS), Total Arsenic (As), Total Chromium (Cr), Total and Filtered Copper (Cu), and Total and Filtered Zinc (Zn), all other reported contamination loads for other contaminants were estimated with the absolute value of their respective LOR.

Since no discharge data was recorded at ADP2 during the reporting period, contamination loads could not be estimated for the contaminants discharged at ADP2.

Based on the estimated contamination loads, coupled with the fact that all sediment monitoring results for the reporting period were below the specified trigger values in WDL212-03, wastewater discharged from CIPS at ADP1 and ADP2 have had no observable impact on the receiving environment (Darwin Harbour). Trop Water (on behalf of TGen) will continue to monitor wastewater and sediment quality condition in accordance with the monitoring program specified in WDL212-03.

Table 4: Annual and monthly contamination loads for nutrients, metals and hydrocarbons at ADP1 from December 2022 to November 2023.

	Contaminant	Unit	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Annual
Nutrients and Suspended Solids	Total Nitrogen (TN)	g		9598.40	10908.34	10762.64	18579.57	11480.12		1814.52	4755.37	220.25			68119.22
	Total Phosphorus (TP)	g		799.20	795.11	837.29	1077.38	860.77		178.35	318.98	15.18			4882.26
	Total Suspended Solids (TSS)	g		5502.65	18478.75	12527.50	61384.15	16856.60		2344.80	15031.50	672.31			132798.26
Filtered Metals	Aluminium	g		11.01	36.96	25.06	122.77	33.71		4.69	27.90	1.23			263.32
	Arsenic	g		9.33	7.58	8.89	5.51	8.62		1.50	1.85	0.09			43.39
	Cadmium	g		0.11	0.37	0.25	1.23	0.34		0.05	0.28	0.01			2.63
	Chromium	g		8.20	9.24	9.15	15.57	9.74		1.47	3.33	0.15			56.86
	Cobalt	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Copper	g		12.93	12.94	13.59	17.77	13.99		6.48	16.87	0.85			95.41
	Lead	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Mercury	g		0.11	0.37	0.25	1.23	0.34		0.05	0.28	0.01			2.63
	Nickel	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Zinc	g		5.50	18.48	12.53	61.38	16.86		2.85	13.95	0.62			132.16
Total Metals	Aluminium	g		11.01	36.96	25.06	122.77	33.71		4.69	33.31	1.51			269.01
	Arsenic	g		12.93	12.94	13.59	17.77	13.99		1.47	3.87	0.18			76.74
	Cadmium	g		0.11	0.37	0.25	1.23	0.34		0.05	0.28	0.01			2.63
	Chromium	g		8.20	9.24	9.15	15.57	9.74		1.47	3.33	0.15			56.86
	Cobalt	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Copper	g		17.66	16.64	18.02	19.97	18.24		7.98	20.12	1.01			119.64
	Lead	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Mercury	g		0.11	0.37	0.25	1.23	0.34		0.05	0.28	0.01			2.63
	Nickel	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Zinc	g		5.50	18.48	12.53	61.38	16.86		2.34	23.15	1.09			141.34
Polycyclic Aromatic Hydrocarbons	Naphthalene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Acenaphthylene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Acenaphthene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Fluorene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Phenanthrene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Anthracene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Fluoranthene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Pyrene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Benz(a)anthracene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Chrysene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Benzo(b+j)fluoranthene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Benzo(k)fluoranthene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Benzo(a)pyrene	g		0.55	1.85	1.25	6.14	1.69		0.23	1.39	0.06			13.17
	Indeno(1.2.3.cd)pyrene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Dibenz(a.h)anthracene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Benzo(g.h.i)perylene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Sum of polycyclic aromatic hydroc	g		0.55	1.85	1.25	6.14	1.69		0.23	1.39	0.06			13.17
	Benzo(a)pyrene TEQ (zero)	g		0.55	1.85	1.25	6.14	1.69		0.23	1.39	0.06			13.17
Total Petroleum Hydrocarbons	C6 - C9 Fraction	g		22.01	73.92	50.11	245.54	67.43		9.38	55.79	2.47			526.64
	C10 - C14 Fraction	g		55.03	184.79	125.28	613.84	168.57		23.45	139.49	6.17			1316.60
	C15 - C28 Fraction	g		110.05	369.58	250.55	1227.68	337.13		46.90	278.97	12.34			2633.20
	C29 - C36 Fraction	g		55.03	184.79	125.28	613.84	168.57		23.45	139.49	6.17			1316.60
	C10 - C36 Fraction (sum)	g		55.03	184.79	125.28	613.84	168.57		23.45	139.49	6.17			1316.60
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	g		22.01	73.92	50.11	245.54	67.43		9.38	55.79	2.47			526.64
	C6 - C10 Fraction minus BTEX	g		22.01	73.92	50.11	245.54	67.43		9.38	55.79	2.47			526.64
	C10 - C16 Fraction	g		110.05	369.58	250.55	1227.68	337.13		46.90	278.97	12.34			2633.20
	C16 - C34 Fraction	g		110.05	369.58	250.55	1227.68	337.13		46.90	278.97	12.34			2633.20
	C34 - C40 Fraction	g		110.05	369.58	250.55	1227.68	337.13		46.90	278.97	12.34			2633.20
	C10 - C40 Fraction (sum)	g		110.05	369.58	250.55	1227.68	337.13		46.90	278.97	12.34			2633.20
	C10 - C16 Fraction minus Naphtha	g		110.05	369.58	250.55	1227.68	337.13		46.90	278.97	12.34			2633.20
BTEXN	Benzene	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Toluene	g		2.20	7.39	5.01	24.55	6.74		0.94	5.58	0.25			52.66
	Ethylbenzene	g		2.20	7.39	5.01	24.55	6.74		0.94	5.58	0.25			52.66
	meta- & para-Xylene	g		2.20	7.39	5.01	24.55	6.74		0.94	5.58	0.25			52.66
	ortho-Xylene	g		2.20	7.39	5.01	24.55	6.74		0.94	5.58	0.25			52.66
	Total Xylenes	g		2.20	7.39	5.01	24.55	6.74		0.94	5.58	0.25			52.66
	Sum of BTEX	g		1.10	3.70	2.51	12.28	3.37		0.47	2.79	0.12			26.33
	Naphthalene	g		5.50	18.48	12.53	61.38	16.86		2.34	13.95	0.62			131.66

4 CONCLUSIONS

Wastewater discharged from Channel Island Power Station (CIPS) and sediment in Darwin Harbour receiving environment were monitored in accordance with WDL212-03 to assess environmental harm (if any) resulting from the wastewater discharged. Monitoring results for the reporting period, December 2022 to November 2023 is presented and discussed in this report.

The monitoring results at the authorised discharge points (ADP1 and ADP2) showed that:

- DO % Sat was below the trigger of >80 % specified in WDL212-03 on 23 January 2023 (**75.8** %), 20 March 2023 (**77** %), 9 May 2023 (**61.2** %), and 19 October 2023 (**75.5** %) at ADP1. Similarly, DO % Sat was below the trigger of >80 % on 23 January 2023 (**64.7** %), 27 February 2023 (**58.5** %), 17 April 2023 (**49.3** %), 13 July 2023 (**52.9** %) and 3 August 2023 (**24.4** %) at ADP2.
- pH was outside the WDL212-03 pH trigger value range of 6.00 – 8.50 pH units at ADP1 on 9 May 2023 (**8.78** pH units) and 3 August 2023 (**8.85** pH units).
- All TP, TN and TSS were below their respective trigger values specified in WDL212-03 at ADP1 and ADP2.
- Except for Filtered Copper concentration of **13** µg/L and **22** µg/L recorded at ADP1 on 13 July 2023 and 3 August 2023, respectively and Filtered Zinc concentration of **44** µg/L at ADP2 on 20 March 2023, all Filtered metals concentration were below the trigger values specified for each metal in WDL212-03.

However, these exceedances were either less than three times the specified trigger values in WDL212-03 or did not occur on three consecutive sampling occasions from December 2022 to November 2023 monitoring events. As such, there were no notifiable incidents in this monitoring period.

Sediment monitoring results at NODH2 and SODH2 consistently fell below the trigger values specified in WDL212-03. Also, apart from the estimated contamination loads for Total Nitrogen (TN), Total Phosphorous (TP), Total Suspended Solids (TSS), Arsenic (As), Chromium (Cr), Copper (Cu) and Zinc (Zn), all other reported contamination loads for other contaminants were estimated with the absolute value of their respective LOR. It is important to note that this method, applied as a 'worst-case scenario,' leads to an overstatement of contamination loads. Consequently, the reported contamination loads for these specific contaminants, estimated using the absolute value of their LOR, could potentially be significantly lower than what has been presented. Based on the monitoring results obtained during the reporting period, there is a strong indication that wastewater discharged from CIPS has not had an impact on the receiving environment (Darwin Harbour) water and sediment quality. Trop Water (on behalf of TGen) will continue to monitor wastewater and sediment quality condition in accordance with the monitoring program specified in WDL212-03.

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WDL212-03 (2022): Channel Island Power Station-Waste Discharge Licence, December 2022.

ADDITIONAL DATA

A.1 Temperature

Table A 1: Temperature (°C) at CIPS monitoring sites.

			Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	WDL212-03 Trigger Value	ADP1	ADP2	NODH1	SODH1		Date	ILCP	ISCP
14/4/2016			34.14	31.9	33.03	32.96		14/4/2016	32.79	32.03
10/5/2016			27.55	29.51	27.21	30.37		21/7/2016	27.4	29.99
9/6/2016				34.12		33.45		25/10/2016		34.06
21/7/2016				28.37		28.87		19/1/2017	32.04	32.12
25/8/2016				29.56		30.27		27/4/2017	28.31	27.84
27/9/2016			28.07	30.11	28.93	32.11		31/7/2017		31.1
25/10/2016			37.37	33.03	35.19	32.89		24/10/2017	36.36	34.66
24/11/2016				30.23		31.06		18/1/2018	31.12	32.25
15/12/2016				29.75		30.81		19/4/2018	32.04	32.68
19/1/2017			33.35	30.52	31.87	31.42		19/7/2018	29.53	31.1
23/2/2017			33.53	30.54	32.99			24/10/2018	33.33	33.11
30/3/2017			38.87	30.24	33.14	31.11		22/1/2019	31.42	32.53
27/4/2017			36.61	28.72	34.71	28.3		16/4/2019	31.61	31.97
30/5/2017			29.15	27.62	29.55			23/7/2019	27.89	30.04
22/6/2017			28.45	27.35	29.41			17/10/2019	32.22	33.11
31/7/2017				30.47		30.65		14/1/2020	33.52	34.13
31/8/2017			21.22	29.31	22.29	29.48		23/4/2020	32.6	33.46
21/9/2017			38.42		31.38			23/7/2020	26.77	29.17
24/10/2017			30.76	32.32	30.76			29/10/2020	35.68	34.45
16/11/2017			33.98	30.24				3/11/2020		
20/12/2017			33.19	31.76	32.48			21/1/2021	33.04	34.4
18/1/2018			34.62	30.8	31.05	29.49		13/4/2021	33.03	34.1
22/2/2018				30.81	30.18	37.78		22/7/2021	26.82	27.56
22/3/2018				31.54	30.97	30.99		28/10/2021	33.57	33.61
19/4/2018			33.85	31.73	31.88	32.43		13/1/2022	29.9	31.95
17/5/2018			18.09	25.77	20.25	27.85		22/2/2022	30.73	30.45
21/6/2018			29.53	25.2	27.19			20/04/2022	32.35	32.83
19/7/2018			34.49		28.78			27/02/2023	28.47	28.75
23/8/2018								9/05/2023	27.49	27.72
20/9/2018								3/08/2023	29.83	29.72
24/10/2018					31.42			22/11/2023	33.06	34.2
20/11/2018			26.08		28.09	30.75				
18/12/2018					30.93					
22/1/2019			33.55		31.27					
19/2/2019			33.88		31.61					
19/3/2019			33.51		31.83	30.55				
16/4/2019			31.96		30.39					
23/5/2019			30.57		29.51					
20/6/2019				25.54	24.28					
23/7/2019				28.81		29.36				
26/8/2019										
17/9/2019					27.34					
17/10/2019										
21/11/2019	°C	15 - 35	33.42		31.48					
12/12/2019			35.59		33.09					
14/1/2020			33.96	31.21	31.22	31.47				
20/2/2020			31.96	29.36	28.62	29.28				
26/3/2020			31.83		30.85					
23/4/2020			33.44		31.85					
21/5/2020			29.19		28.98					
18/6/2020						29.91				
23/7/2020				28		28.79				
20/8/2020			24.86		26.36					
24/9/2020			26.75		26.85					
29/10/2020				30.31	29.71	30.19				
3/11/2020					30.624					
26/11/2020			27.95	30.97	29.72					
3/12/2020			26.93	31.13	27.48					
21/1/2021				32.64	30.93	30.79				
4/2/2021			27.21	28.2	28.31	28.71				
11/3/2021			27.5		27.5	30.2				
13/4/2021			27.33		27.9					
27/5/2021			23.03		23.35					
10/6/2021			17.17	25.85	20.04					
22/7/2021			22.82		23.34	28.84				
24/8/2021			25.03		26.18					
23/9/2021			17.61		21.78					
28/10/2021										
18/11/2021			32.62	33.04	30.65	33.36				
23/12/2021			27.81	29.62	28.88					
13/1/2022			28.66	29.33	29.67	34.12				
22/2/2022				31.06	29.11	30.11				
29/3/2022			31.91	29.91	29.89	29.98				
20/4/2022			25.42		31.26					
17/5/2022			32.81							
22/12/2022				28.57	28.51	28.97				
23/01/2023			32.61	31.5	35.05	35.65				
27/02/2023			26.45	28.29	27.52	26.64				
20/03/2023			26.63	33.09	31.9	34.52				
17/04/2023				28.2	28.16	27.32				
9/05/2023			30.7		30.05	26.56				
15/06/2023										
13/07/2023			27.79	26.17	27.07					
3/08/2023			30.79	28.78	29.74					
14/09/2023				27.64						
19/10/2023			27.02		29.15					
22/11/2023										

A.2 Dissolved Oxygen

Table A 2: Dissolved Oxygen (% saturation) at CIPS monitoring sites.

			Monthly monitoring sites				Quarterly monitoring sites		
Date	Units	WDL212-03 Trigger Value	ADP1	ADP2	NODH1	SODH1	Date	ILCP	ISCP
14/4/2016			92.1	**28**	89.2	**62.9**	14/4/2016	108.2	98.5
10/5/2016			95.1	**33**	96.6	96.3	21/7/2016	77.8	72.3
9/6/2016				**66.6**		94.9	25/10/2016		116.4
21/7/2016				**67.8**		**73.6**	19/1/2017	88.9	96.1
25/8/2016				**76.5**		90.6	27/4/2017	84.4	106.3
27/9/2016			96.5	**73.9**	96.2	**73.9**	31/7/2017		101.4
25/10/2016			91.8	103.1	89.1	80.7	24/10/2017	123.6	98.5
24/11/2016				**43.1**		**54.1**	18/1/2018	61.6	71.2
15/12/2016				**15.7**		64.5	19/4/2018	90.9	116.9
19/1/2017			87.8	**71.9**	82	87	19/7/2018	88.8	105.1
23/2/2017			83.8	**65.8**	83.8		24/10/2018	95.2	83
30/3/2017			**51.7**	**55.4**	**61.2**	**54.1**	22/1/2019	87.6	84.3
27/4/2017			**73.2**	**73.8**	88.9	88.8	16/4/2019	64.56	103.4
30/5/2017			94.9	**43.6**	93.3		23/7/2019	72.7	81.2
22/6/2017			100.4	**78.6**	97.3		17/10/2019	61.8	95
31/7/2017				100.5		99.9	14/1/2020	60.6	61
31/8/2017			101.9	81.6	101.6	95.3	23/4/2020	77.6	77.1
21/9/2017			89.6		81.6		23/7/2020	68.9	82
24/10/2017			92.1	**62.7**	82		29/10/2020	73.5	95.3
16/11/2017			61.3	**35.8**			3/11/2020		
20/12/2017			97	**55.8**	86.3		21/1/2021	52.2	60.3
18/1/2018			87.1	**61**	**67.2**	**43.8**	13/4/2021	63.5	78.4
22/2/2018				**50.1**	**56.1**	**61.5**	22/7/2021	94.6	101.5
22/3/2018				**71.4**	84.7	89	28/10/2021	49.2	62.1
19/4/2018			**63.2**	**50.3**	83.7	82.2	13/1/2022	94	94.4
17/5/2018			90.9	86.9	84.2	87.2	22/2/2022	81.9	85.7
21/6/2018			**54.6**	**22.1**	**69.1**		20/04/2022	89.5	73
19/7/2018			94.3		86.3		27/02/2023	**70.3**	**65.6**
23/8/2018							9/05/2023	**71**	**74.3**
20/9/2018							3/08/2023	96	**61**
24/10/2018					80.3		22/11/2023	**56.5**	100.4
20/11/2018			94.1		91.8	80.9			
18/12/2018					**66.3**				
22/1/2019			**56.8**		**77.5**				
19/2/2019			84.5		**71.1**				
19/3/2019			94.1		96.2	99.1			
16/4/2019			93.8		**79.5**				
23/5/2019			89.6		84.1				
20/6/2019				**47.7**	**67.8**				
23/7/2019				**66.4**		**67.5**			
26/8/2019									
17/9/2019					**74.8**				
17/10/2019									
21/11/2019	%	>80%	79.7		70.1				
12/12/2019			**56**		91.5				
14/1/2020			**61.5**	**56.5**	**70.4**	**65.1**			
20/2/2020			88.9	86.6	87.3	91.8			
26/3/2020			**67.9**		81.3				
23/4/2020			**67.8**		**69.9**				
21/5/2020			**61.7**		**63.4**				
18/6/2020						**66.1**			
23/7/2020				**59.9**		**65.6**			
20/8/2020			**73.1**		**75.1**				
24/9/2020			**75.5**		**75.8**				
29/10/2020				78.3	**70.2**	**62.5**			
3/11/2020					**69.2**				
26/11/2020			90.9	**41**	91.1				
3/12/2020			**65.4**	**68.1**	93.4				
21/1/2021				**49.9**	**62.2**	**61.5**			
4/2/2021			**55.8**	**47.4**	**58.4**	**65.7**			
11/3/2021			**57.6**		**54.1**	**61.8**			
13/4/2021			86.2		**72.1**				
27/5/2021			88.4		84.9				
10/6/2021			81.9	**62.1**	**73.5**				
22/7/2021			95.5		97.1	90.2			
24/8/2021			**73.4**		80.5				
23/9/2021			98		67				
28/10/2021									
18/11/2021			**76.8**	**75.8**	80.9	**60.8**			
23/12/2021			103	115.1	**65.9**				
13/1/2022			**76.1**	**77.9**	**57**	**79**			
22/2/2022				**71.8**	81	**63.3**			
29/3/2022			**73.9**	85.6	80.2	**55.6**			
20/4/2022			**60.9**		**68.8**				
17/5/2022			**58.5**						
22/12/2022				100	**59**	111.1			
23/01/2023			**75.8**	**64.7**	**64.9**	**58**			
27/02/2023			98.6	**58.5**	**63.3**	**51.8**			
20/03/2023			**77**	107.2	100.2	107.2			
17/04/2023				**49.3**	**51.2**	**63.1**			
9/05/2023			**61.2**		84.2	89			
15/06/2023									
13/07/2023			104.5	**52.9**	**76.6**				
3/08/2023			106.6	**24.4**	**56.6**				
14/09/2023				89.8					
19/10/2023			**75.5**		85.7				
22/11/2023									

A.3 pH

Table A 3: pH at CIPS monitoring sites.

			Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	WDL212-03 Trigger Value	ADP1	ADP2	NODH1	SODH1		Date	ILCP	ISCP
14/4/2016			8.2	7.1	6.25	7.84		14/4/2016	**9.37**	7.89
10/5/2016			7.52	7.47	7.41	7.83		21/7/2016	8.05	7.12
9/6/2016				9.17		7.62		25/10/2016		**8.98**
21/7/2016				7.09		6.89		19/1/2017	**3.62**	8.04
25/8/2016				7.68		7.52		27/4/2017	**4.06**	**8.66**
27/9/2016			**9.13**	7.94	**8.63**	7.52		31/7/2017		**5.84**
25/10/2016			8.13	8.36	7.81	7.82		24/10/2017	6.98	7.6
24/11/2016				8.95		8.02		18/1/2018	7.51	8.16
15/12/2016				7.69		7.23		19/4/2018	8.18	**9.46**
19/1/2017			8.42	6.72	7.18	7.98		19/7/2018	**8.65**	**9.07**
23/2/2017			7.75	7.31	7.35			24/10/2018	**8.84**	**8.84**
30/3/2017			7.59	7.16	6.53	7.62		22/1/2019	8.46	**8.74**
27/4/2017			7.12	7.7	7.39	7.98		16/4/2019	**8.89**	8.45
30/5/2017			7.47	7.38	6.93			23/7/2019	**9.22**	7.79
22/6/2017			6.81	7.56	4.11			17/10/2019	**9.79**	**9.3**
31/7/2017				4.3		7.17		14/1/2020	**8.75**	8.46
31/8/2017			7.32	7.44	7.2	7.02		23/4/2020	**9.49**	**9.34**
21/9/2017			7.63		7.47			23/7/2020	7.73	7.35
24/10/2017			8.33	8.23	**8.59**			29/10/2020	**9.6**	**9.67**
16/11/2017			7.91	7.1				3/11/2020		
20/12/2017			7.44	**8.99**	**8.74**			21/1/2021	7.81	8
18/1/2018			8.08	8.5	7.51	6.17		13/4/2021	8.48	**8.79**
22/2/2018				6.97	6.9	7.38		22/7/2021	**8.93**	**9.49**
22/3/2018				6.97	6.26	7.47		28/10/2021	7.76	7.98
19/4/2018			**8.78**	7.66	**8.64**	8.1		13/1/2022	8.5	**9.03**
17/5/2018			**8.51**	**8.8**	8.48	7.39		22/2/2022	**8.75**	**8.82**
21/6/2018			**8.54**	8.1	8.45			20/04/2022	**9.77**	**9.67**
19/7/2018			**8.72**		8.51			27/02/2023	8.03	7.95
23/8/2018								9/05/2023	**8.96**	**8.82**
20/9/2018								3/08/2023	**9.21**	8.24
24/10/2018					8.55			22/11/2023	8.34	**9.25**
20/11/2018			8.29		8.01	7.59				
18/12/2018					6.84					
22/1/2019			**9.11**		**8.98**					
19/2/2019			**8.78**		**8.77**					
19/3/2019			**8.77**		**8.95**	7.37				
16/4/2019			**8.92**		**8.93**					
23/5/2019			**8.95**		8.69					
20/6/2019				8.72	8					
23/7/2019				8.42		7.54				
26/8/2019										
17/9/2019					7.44					
17/10/2019										
21/11/2019	pH unit	6 - 8.5	**8.69**		9					
12/12/2019			**8.76**		**8.77**					
14/1/2020			**8.82**	8.18	8.03	7.47				
20/2/2020			**8.95**	8.55	**8.93**	7.4				
26/3/2020			8.47		**8.64**					
23/4/2020			8.3		**8.74**					
21/5/2020			8.49		**8.59**					
18/6/2020						7.49				
23/7/2020				7.75		8.45				
20/8/2020			6.1		7.28					
24/9/2020			8.11		8.27					
29/10/2020				**9.49**	7.67	9.73				
3/11/2020					8.03					
26/11/2020			7.99	8.26	7.9					
3/12/2020			7.53	8.79	7.84					
21/1/2021				7.7	6.79	6.84				
4/2/2021			8.09	7.55	7.73	7.71				
11/3/2021			7.23		7.31	5.93				
13/4/2021			8.64		8.07					
27/5/2021			7.86		8.01					
10/6/2021			8.14	**8.85**	8.14					
22/7/2021			7.98		8.01	8.3				
24/8/2021			7.57		7.7					
23/9/2021			8.2		8.21					
28/10/2021										
18/11/2021			7.37	8.05	8.36	7.12				
23/12/2021			**8.84**	**8.67**	6.79					
13/1/2022			**8.78**	9	7.31	6.93				
22/2/2022				8.8	**8.6**	6.63				
29/3/2022			8.23	9.43	**8.85**	7.25				
20/4/2022			**8.88**		8.31					
17/5/2022			7.77							
22/12/2022				7.72	7.45	7.05				
23/01/2023			7.81	8.46	8.21	8.04				
27/02/2023			8.13	8.07	7.51	7.94				
20/03/2023			6.16	7.32	6.81	7.13				
17/04/2023				7.05	6.56	6.45				
9/05/2023			**8.78**		**8.61**	7.86				
15/06/2023										
13/07/2023			7.07	8.11	8.04					
3/08/2023			**8.85**	7.47	**8.84**					
14/09/2023				6.96						
19/10/2023			7.55		7.79					
22/11/2023										

A.4 Electrical Conductivity

Table A 4: Electrical Conductivity at CIPS monitoring sites.

		Monthly monitoring sites				Quarterly monitoring sites		
Date	Units	ADP1	ADP2	NODH1	SODH1	Date	ILCP	ISCP
14/4/2016		577	111	589	50000	14/4/2016	2810	114
10/5/2016		105	107	206	19800	21/7/2016	3630	214
9/6/2016			3610		49000	25/10/2016		803
21/7/2016			242		209	19/1/2017	1173	117
25/8/2016			106		108	27/4/2017	990	62
27/9/2016		247	177	177	1453	31/7/2017		66
25/10/2016		1042	822	1165	4550	24/10/2017	1770	2120
24/11/2016			740		55100	18/1/2018	2460	579
15/12/2016			561		164	19/4/2018	1044	277
19/1/2017		724	122	647	484	19/7/2018	2270	204
23/2/2017		134	51	707		24/10/2018	6910	238
30/3/2017		647	54	305	632	22/1/2019	2200	131
27/4/2017		642	53	661	4780	16/4/2019	1343	109
30/5/2017		712	70	683		23/7/2019	3020	71
22/6/2017		694	80	666		17/10/2019	5230	201
31/7/2017			148		63	14/1/2020	1409	166
31/8/2017		183	1790	182	62	23/4/2020	1202	140
21/9/2017		551		826		23/7/2020	1970	75
24/10/2017		2250	2300	2140		29/10/2020	0.244	2.91
16/11/2017		2060	1490			3/11/2020		
20/12/2017		2420	1200	2450		21/1/2021	1.011	0.084
18/1/2018		1940	531	2220	790	13/4/2021	559	0.235
22/2/2018			72	147	667	22/7/2021	684	382
22/3/2018			228	195	1407	28/10/2021	1330	120
19/4/2018		2850	263	1960	6050	13/1/2022	1170	103
17/5/2018		915	119	919	51	22/2/2022	1100	665
21/6/2018		1490	164	1520		20/04/2022	1.47	0.547
19/7/2018		2340		2330		27/02/2023	1250	652
23/8/2018						9/05/2023	1310	546
20/9/2018						3/08/2023	1760	401
24/10/2018				1064		22/11/2023	3930	322
20/11/2018		676		323	96			
18/12/2018				98				
22/1/2019		1780		2310				
19/2/2019		3360		1970				
19/3/2019		3200		1830	7350			
16/4/2019		3260		2200				
23/5/2019		3450		2080				
20/6/2019			701	107				
23/7/2019			80		63			
26/8/2019								
17/9/2019				142				
17/10/2019								
21/11/2019	µs/cm	2930		1382				
12/12/2019		2990		1295				
14/1/2020		2490	169	330	542			
20/2/2020		2640	122	334	256			
26/3/2020		2620		2060				
23/4/2020		2580		2410				
21/5/2020		2450		2710				
18/6/2020					74			
23/7/2020			89		260			
20/8/2020		3760		3780				
24/9/2020		3580		3790				
29/10/2020			239	519	299			
3/11/2020				326				
26/11/2020		204	257	288				
3/12/2020		201	237	204				
21/1/2021			79	127	592			
4/2/2021		350	35	220	10670			
11/3/2021		303		207	20800			
13/4/2021		210		188				
27/5/2021		188		184				
10/6/2021		245	269	243				
22/7/2021		200		182	123			
24/8/2021		310		313				
23/9/2021		1170		1830				
28/10/2021								
18/11/2021		2500	73	965	46000			
23/12/2021		2510	122	769				
13/1/2022		2410	110	526	1890			
22/2/2022			671	144	4830			
29/3/2022		2510	556	2380	27100			
20/4/2022		3440		2.13				
17/5/2022		1820						
22/12/2022			181	863	26200			
23/01/2023		2000	145	1620	30500			
27/02/2023		574	676	278	136			
20/03/2023		137	58	119	356			
17/04/2023			483	630	20400			
9/05/2023		2530		1960	43100			
15/06/2023								
13/07/2023		1700	522	1730				
3/08/2023		2500	408	1800				
14/09/2023			119					
19/10/2023		149		148				
22/11/2023								

A.5 Turbidity

Table A 5: Turbidity at CIPS monitoring sites.

		Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	ADP1	ADP2	NODH1	SODH1		Date	ILCP	ISCP
14/4/2016		6.57	4.4	7.43	0.35		14/4/2016	12.3	6.57
10/5/2016		3.66	4.38	4.99	1.18		21/7/2016	16.3	2.34
9/6/2016			5.52		0.89		25/10/2016		7.92
21/7/2016			2.14		1.68		19/1/2017	8.38	11.4
25/8/2016			5.61		2.18		27/4/2017	2.67	12.7
27/9/2016		2.18	19.6	2.02	2.25		31/7/2017		2.45
25/10/2016		10.1	5.83	9.89	7.2		24/10/2017	21.5	13.3
24/11/2016			43.2		1.05		18/1/2018	2.9	9.04
15/12/2016			16.5		125		19/4/2018	0.97	20.2
19/1/2017		13.8	11.2	11.1	1.05		19/7/2018	1.61	22.3
23/2/2017		5.16	6.57	9.22			24/10/2018	5.43	4.91
30/3/2017		7.9	8.3	12	3.94		22/1/2019	13	9.46
27/4/2017		5.46	9.27	5.18	0.52		16/4/2019	8.89	6.06
30/5/2017		7.35	13.5	4.53			23/7/2019	2.41	2.37
22/6/2017		5.9	13.4	13.1			17/10/2019	7.09	9.94
31/7/2017			2.41		1.27		14/1/2020	1.4	16
31/8/2017		1.68	2.99	1.38	8.18		23/4/2020	2.25	10.7
21/9/2017		6.1		2.65			23/7/2020	1.28	2.95
24/10/2017		4.16	1.5	16.4			29/10/2020	24.6	1.49
16/11/2017		7.52	2.91				3/11/2020		
20/12/2017		3.57	3.85	3.17			21/1/2021	2.91	4.23
18/1/2018		4.95	8.21	3.74	3.94		13/4/2021	1.43	8.06
22/2/2018			3.53	10.4	6.26		22/7/2021	1.63	30.4
22/3/2018			6.39	6.27	6.86		28/10/2021	2.37	10.5
19/4/2018		5.61	11.6	8.67	0.8		13/1/2022	1.15	13.7
17/5/2018		2.02	7.25	3.8	1.73		22/2/2022	1.85	3.96
21/6/2018		9.85	19.9	18.8			20/04/2022	8.79	4.18
19/7/2018		6.21		23.2			27/02/2023	1.49	4.27
23/8/2018							9/05/2023	4.12	3.31
20/9/2018							3/08/2023	4.96	2.61
24/10/2018				4.27			22/11/2023	1.59	20
20/11/2018		2.13		52.2	1.42				
18/12/2018				1.9					
22/1/2019		3.59		1.9					
19/2/2019		4.02		1.55					
19/3/2019		3.93		2.15	1.54				
16/4/2019		5.76		2.46					
23/5/2019		12.5		4.32					
20/6/2019			8.12	3.1					
23/7/2019			2.18		1				
26/8/2019									
17/9/2019				2.98					
17/10/2019									
21/11/2019	NTU	5.64		7.23					
12/12/2019		8.05		23.6					
14/1/2020		5.47	14.9	18	22.1				
20/2/2020		6.76	15	27.6	8.86				
26/3/2020		5.92		2.5					
23/4/2020		7.74		19					
21/5/2020		9.3		131					
18/6/2020					1.37				
23/7/2020			2.49		1.11				
20/8/2020		0.72		0.62					
24/9/2020		0.95		8.92					
29/10/2020			23.4	1.45					
3/11/2020				1.22					
26/11/2020		1.25	9.55	8.89					
3/12/2020		1.12	16.4	2.96					
21/1/2021			4.08	6.78	8.3				
4/2/2021		3.84	8.54	8.26					
11/3/2021		1.62		9.6	4.4				
13/4/2021		0.95		1.13					
27/5/2021		0.61		0.62					
10/6/2021		1.96	15.7	1.77					
22/7/2021		0.8		0.71	0.73				
24/8/2021		1.33		1.31					
23/9/2021		4.63		3.22					
28/10/2021									
18/11/2021		3.91	3.96	6.53	1.14				
23/12/2021		3.08	3.47	4.44					
13/1/2022		2.05	13.7	13.3	5.09				
22/2/2022			2.51	3.25	6.45				
29/3/2022		2.44	4.06	2.44	2.29				
20/4/2022		2.61		3.06					
17/5/2022		10.1							
22/12/2022			2.27	2.81	14				
23/01/2023		4.04	4.61	3.93	2.35				
27/02/2023		2.16	4.12	12.8	68.3				
20/03/2023		1.43	1.71	6.91	3.96				
17/04/2023			4.56	4.64	3.15				
9/05/2023		4.6		5.21	3.21				
15/06/2023									
13/07/2023		4.56	6.08	6.78					
3/08/2023		6.69	2.08	7.76					
14/09/2023									
19/10/2023		1.05		1.14					
22/11/2023									

A.6 Free Chlorine

Table A 6: Free Chlorine concentration at CIPS monitoring sites.

		Monthly monitoring sites			
Date	Units	ADP1	ADP2	NODH1	SODH1
24/10/2018				0.06	
20/11/2018		1.08		0.25	0.05
18/12/2018				0.02	
22/1/2019		0.65		0.16	
19/2/2019		0.6		0.24	
19/3/2019		0.55		0.25	0.11
16/4/2019		0.41		0.11	
23/5/2019		0.34		0.13	
20/6/2019			0.03	0.1	
23/7/2019			0.03		0.66
26/8/2019					
17/9/2019				0.1	
17/10/2019					
21/11/2019		0.2		0.11	
12/12/2019		0.56		0.14	
14/1/2020		0.96	0.04	0.04	0.04
20/2/2020		0.41	0.06	0.03	0.13
26/3/2020		0.45		0.11	
23/4/2020		0.33		0.27	
21/5/2020		0.18		0.17	
18/6/2020					0.04
23/7/2020			0.02		0.28
20/8/2020		0.08		0.05	
24/9/2020		2.4		1.85	
29/10/2020			0.04	0.05	0
3/11/2020				0.05	
26/11/2020		0.05	0.08	0.07	
3/12/2020		0.22	0.03	0.32	
21/1/2021	mg/L		0.00	0	0.11
4/2/2021		1.54	0.01	0.5	
11/3/2021		0.76		0.42	0.02
13/4/2021		0.29		0.16	
27/5/2021		0.45		0.45	
10/6/2021		1.36	0.06	1.23	
22/7/2021		1.69		1.49	0.59
24/8/2021		0.99		0.87	
23/9/2021		3.8		3.2	
28/10/2021					
18/11/2021		0.47	0	0	0.03
23/12/2021		6.7	0.03	1	
13/1/2022		1.25	0.04	0.03	0.06
22/2/2022			0.02	0.01	0
29/3/2022		1.56	0.11	1.83	0.02
20/4/2022		0.63		0.18	
17/5/2022		0.97			
22/12/2022			0	0.02	0.01
23/01/2023		0.21	0.03	0.2	0.04
27/02/2023		0.37	0.04	0.02	0.03
20/03/2023		0.1	1.3	0.1	0.1
17/04/2023			0.03	0.02	0
9/05/2023		0.29		0.24	0
15/06/2023					
13/07/2023		1.12	0.04	0.45	
3/08/2023		1.13	0.04	0.77	
14/09/2023			0.03		
19/10/2023		0.41		0.43	
22/11/2023					

Quarterly monitoring sites		
Date	ILCP	ISCP
24/10/2018	0.03	0.05
22/1/2019	0.06	0.07
16/4/2019	0.02	0.01
23/7/2019	0.02	0.03
17/10/2019	0.04	0.03
14/1/2020	0.01	0.06
23/4/2020	0.04	0.04
23/7/2020	0.03	0.02
29/10/2020	0.01	0.01
3/11/2020		
21/1/2021	0.02	0.01
13/4/2021	0.03	0.05
22/7/2021	0.05	0.07
28/10/2021	0.11	0.04
13/1/2022	0.02	0.04
22/2/2022	0.03	0.02
20/04/2022	0.61	0.02
27/02/2023	0.04	0.02
9/05/2023	0.04	0.04
3/08/2023	0.03	0.06
22/11/2023	0.03	0

A.7 Total Suspended Solids

Table A 7: Total Suspended Solids concentration at CIPS monitoring sites.

				Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	LOR	WDL212-03 Trigger Value	ADP1	ADP2	NODH1	SODH1		Date	ILCP	ISCP
14/4/2016				5	5	9	5		14/4/2016	15	9
10/5/2016				5	5	6	5		21/7/2016	**134**	5
9/6/2016					**19**		5		25/10/2016		**12**
21/7/2016					5		5		19/1/2017	7	5
25/8/2016					**10**		6		27/4/2017	8	**18**
27/9/2016				9	**114**	5	5		31/7/2017		5
25/10/2016				**14**	8	8	5		24/10/2017	**18**	5
24/11/2016					**16**		5		18/1/2018	6	10
15/12/2016					**12**		**31**		19/4/2018	5	**30**
19/1/2017				5	5	5	5		19/7/2018	5	**33**
23/2/2017				8	10	9			24/10/2018	5	6
30/3/2017				5	5	5	5		22/1/2019	9	**11**
27/4/2017				6	**18**	**19**	5		16/4/2019	5	7
30/5/2017				10	**22**	8			23/7/2019	5	5
22/6/2017				7	**20**	**10**			17/10/2019	**15**	9
31/7/2017					5		5		14/1/2020	5	5
31/8/2017				5	5	5	**11**		23/4/2020	**13**	**39**
21/9/2017				7		5			23/7/2020	5	10
24/10/2017				**26**	5	**25**			29/10/2020	6	**32**
16/11/2017				**13**	5				3/11/2020		
20/12/2017				**12**	6	**12**			21/1/2021	5	5
18/1/2018				6	8	5	**12**		13/4/2021	5	**14**
22/2/2018					5	5	5		22/7/2021	5	**22**
22/3/2018					10	5	9		28/10/2021	5	5
19/4/2018				5	**21**	**13**	5		13/1/2022	5	**16**
17/5/2018				5	7	5	5		22/2/2022	5	6
21/6/2018				**38**	**22**	**12**			20/04/2022	**16**	5
19/7/2018				6		**48**			27/02/2023	5	5
23/8/2018									9/05/2023	**14**	6
20/9/2018									3/08/2023	7	**10**
24/10/2018						5			22/11/2023	5	**31**
20/11/2018				5		**76**	5				
18/12/2018						5					
22/1/2019				**21**		5					
19/2/2019				**14**		**11**					
19/3/2019				9		5	**34**				
16/4/2019				**14**		6					
23/5/2019				**18**		5					
20/6/2019					**11**	5					
23/7/2019					5		5				
26/8/2019											
17/9/2019						5					
17/10/2019											
21/11/2019	mg/L	5	10	7		5					
12/12/2019				**12**		**12**					
14/1/2020				5	**23**	5	5				
20/2/2020				6	8	**12**	5				
26/3/2020				**11**		5					
23/4/2020				**14**		**34**					
21/5/2020				**28**		9					
18/6/2020							5				
23/7/2020					6		5				
20/8/2020				5		5					
24/9/2020				5		20					
29/10/2020					**28**	5	**506**				
3/11/2020						10					
26/11/2020				5	10	10					
3/12/2020				5	**18**	5					
21/1/2021					6	5	5				
4/2/2021				6	10	5					
11/3/2021				5		9	**56**				
13/4/2021				5		5					
27/5/2021				5		5					
10/6/2021				5	**26**	5					
22/7/2021				5		5	5				
24/8/2021				5		5					
23/9/2021				10		10					
28/10/2021											
18/11/2021				5	5	7	5				
23/12/2021				5	5	5					
13/1/2022				5	**15**	5	5				
22/2/2022					**21**	5	5				
29/3/2022				6	7	6	5				
20/4/2022				8		5					
17/5/2022				**13**							
22/12/2022					5	5	8				
23/01/2023				5	5	5	**18**				
27/02/2023				5	6	5	**14**				
20/03/2023				5	5	5	5				
17/04/2023					7	5	5				
9/05/2023				5		6	10				
15/06/2023											
13/07/2023				5	5	10					
3/08/2023				7	5	5					
14/09/2023					5						
19/10/2023				5		5					
22/11/2023											

A.8 Total Phosphorous

Table A 8: Total Phosphorous concentration at CIPS monitoring sites.

				Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	LOR	WDL212-03 Trigger Value	ADP1	ADP2	NODH1	SODH1		Date	ILCP	ISCP
14/4/2016				0.26	0.03	0.27	0.1		14/4/2016	0.09	0.06
10/5/2016				0.05	0.04	0.05	0.05		21/7/2016	0.24	0.01
9/6/2016					0.09		0.05		25/10/2016		0.02
21/7/2016					0.01		0.01		19/1/2017	0.1	0.03
25/8/2016					0.04		0.01		27/4/2017	0.01	0.03
27/9/2016				0.07	0.16	0.07	0.03		31/7/2017		0.01
25/10/2016				0.06	0.04	0.06	0.18		24/10/2017	0.05	0.04
24/11/2016					0.21		0.05		18/1/2018	0.01	0.05
15/12/2016					0.02		0.46		19/4/2018	0.03	0.08
19/1/2017				0.11	0.03	0.08			19/7/2018	0.01	0.05
23/2/2017				0.05	0.01	0.06			24/10/2018	0.06	0.03
30/3/2017				0.06	0.02	0.02	0.01		22/1/2019	0.03	0.02
27/4/2017				0.07	0.04	0.07	0.05		16/4/2019	0.03	0.03
30/5/2017				0.07	0.05	0.07			23/7/2019	0.05	0.01
22/6/2017				0.06	0.03	0.08			17/10/2019	0.03	0.04
31/7/2017					0.01		0.02		14/1/2020	0.02	0.03
31/8/2017				0.01	0.01	0.02	0.01		23/4/2020	0.01	0.04
21/9/2017				0.11		0.09			23/7/2020	0.01	0.01
24/10/2017				0.45	0.01	0.55			29/10/2020	0.02	0.1
16/11/2017				0.33	0.01				3/11/2020		
20/12/2017				0.26	0.02	0.25			21/1/2021	0.04	0.02
18/1/2018				0.19	0.03	0.19	0.03		13/4/2021	0.65	0.03
22/2/2018					0.02	0.01	0.06		22/7/2021	0.06	0.12
22/3/2018					0.05	0.01	0.03		28/10/2021	0.04	0.07
19/4/2018				0.24	0.06	0.18	0.06		13/1/2022	0.03	0.06
17/5/2018				0.15	0.02	0.16	0.01		22/2/2022	0.05	0.04
21/6/2018				0.32	0.05	0.27			20/04/2022	0.06	0.05
19/7/2018				0.37		0.45			27/02/2023	0.04	0.03
23/8/2018									9/05/2023	0.04	0.04
20/9/2018									3/08/2023	0.06	0.05
24/10/2018						0.14			22/11/2023	0.05	0.14
20/11/2018				0.12		0.08	0.13				
18/12/2018						0.03					
22/1/2019				0.33		0.24					
19/2/2019				0.27		0.13					
19/3/2019				0.11		0.11	0.06				
16/4/2019				0.18		0.11					
23/5/2019				0.22		0.14					
20/6/2019					0.07	0.07					
23/7/2019					0.01		0.01				
26/8/2019											
17/9/2019						0.05					
17/10/2019											
21/11/2019	mg/L	0.01	30	0.15		0.13					
12/12/2019				0.28		0.15					
14/1/2020				0.29	0.03	0.06	0.03				
20/2/2020				0.25	0.01	0.02	0.01				
26/3/2020				0.26		0.22					
23/4/2020				0.19		0.25					
21/5/2020				0.22		0.35					
18/6/2020							0.01				
23/7/2020					0.01		0.01				
20/8/2020				0.08		0.09					
24/9/2020				0.06		0.08					
29/10/2020					0.1	0.05	0.27				
3/11/2020						0.07					
26/11/2020				0.05	0.04	0.07					
3/12/2020				0.03	0.04	0.03					
21/1/2021					0.01	0.01	0.01				
4/2/2021				0.07	0.02	0.04	1.08				
11/3/2021				0.04		0.03	0.05				
13/4/2021				0.04		0.04					
27/5/2021				0.03		0.03					
10/6/2021				0.06	0.17	0.08					
22/7/2021				0.04		0.06	0.01				
24/8/2021				0.04		0.04					
23/9/2021				0.14		0.15					
28/10/2021											
18/11/2021				0.3	0.01	0.12	0.1				
23/12/2021				0.27	0.02	0.18					
13/1/2022				0.36	0.06	0.12	0.06				
22/2/2022					0.04	0.02	0.015				
29/3/2022				0.25	0.05	0.23	0.09				
20/4/2022				0.29		0.28					
17/5/2022				0.29							
22/12/2022					0.03	0.04					
23/01/2023				0.37	0.06	0.32	0.15				
27/02/2023				0.06	0.04	0.06	0.04				
20/03/2023				0.07	0.04	0.05	0.01				
17/04/2023					0.04	0.04	0.06				
9/05/2023				0.28		0.3	0.1				
15/06/2023											
13/07/2023				0.36	0.12	0.44					
3/08/2023				0.34	0.05	0.06					
14/09/2023					0.02						
19/10/2023				0.04		0.05					
22/11/2023											

A.9 Total Nitrogen

Table A 9: Total Nitrogen concentration at CIPS monitoring sites.

				Monthly monitoring sites				Quarterly monitoring sites		
Date of Monitoring	Units	LOR	WDL212-03 Trigger Value	ADP1	ADP2	NODH1	SODH1	Date	ILCP	ISCP
14/4/2016				0.9	1.2	0.8	1.1	14/4/2016	2.7	1.5
10/5/2016				0.5	1.2	0.4	0.5	21/7/2016	5.6	0.4
9/6/2016					2.3		0.5	25/10/2016		1.5
21/7/2016					0.5		0.2	19/1/2017	7.7	2.6
25/8/2016					1.6		0.2	27/4/2017	0.9	2
27/9/2016				0.4	1	0.4	0.2	31/7/2017		0.2
25/10/2016				1.3	1.6	1.4	0.5	24/10/2017	6.3	5.6
24/11/2016					3.5		0.31	18/1/2018	0.9	1
15/12/2016					1.4		2.4	19/4/2018	0.3	2.6
19/1/2017				1.1	2.7	1.1	0.22	19/7/2018	0.7	3
23/2/2017				0.8	1.7	0.9		24/10/2018	2.1	6.8
30/3/2017				1.1	1.3	0.8	0.9	22/1/2019	1	5.6
27/4/2017				0.7	0.99	0.69	0.25	16/4/2019	0.4	4.3
30/5/2017				0.8	3.1	1		23/7/2019	0.7	0.3
22/6/2017				0.8	1.6	1.1		17/10/2019	2.2	2.4
31/7/2017					0.3		0.2	14/1/2020	0.6	7.1
31/8/2017				0.2	0.6	0.2	0.1	23/4/2020	0.7	2.2
21/9/2017				1.4		1.1		23/7/2020	1.4	0.6
24/10/2017				4.7	1.1	4.3		29/10/2020	1.8	3.1
16/11/2017				3.6	2.1			3/11/2020		
20/12/2017				3.4	1	3.4		21/1/2021	1	2.4
18/1/2018				2.7	1.2	2.7	0.66	13/4/2021	1	1.1
22/2/2018					1.5	1.3	1.1	22/7/2021	0.9	7.3
22/3/2018					1.5	1.1	1.6	28/10/2021	1.6	3.3
19/4/2018				2.3	2.4	1.7	2.81	13/1/2022	2.1	3.3
17/5/2018				1.2	1.7	1.2	0.2	22/2/2022	1.3	1.4
21/6/2018				3.1	2.5	2.1		20/04/2022	1.7	2.3
19/7/2018				3.2		3.7		27/02/2023	1.4	2
23/8/2018								9/05/2023	1	5.6
20/9/2018								3/08/2023	1.1	4.4
24/10/2018						1.1		22/11/2023	1.8	2.7
20/11/2018				0.3		2.1	0.7			
18/12/2018						0.3				
22/1/2019				2.9		2.3				
19/2/2019				3.4		2.4				
19/3/2019				1.9		2	1.2			
16/4/2019				3.5		2.2				
23/5/2019				3.4		2				
20/6/2019					7.2	0.2				
23/7/2019					0.4		0.1			
26/8/2019										
17/9/2019						0.5				
17/10/2019										
21/11/2019	mg/L	0.1	300	4		1.8				
12/12/2019				3.2		1.7				
14/1/2020				3.9	3	2.6	1.1			
20/2/2020				3.7	5.1	1.7	1.5			
26/3/2020				3.4		3				
23/4/2020				3.1		3.1				
21/5/2020				2.9		4				
18/6/2020							0.1			
23/7/2020					0.5		0.2			
20/8/2020				0.3		0.4				
24/9/2020				0.3		0.4				
29/10/2020					3.1	1.1	2.5			
3/11/2020						0.4				
26/11/2020				0.4	3.4	0.4				
3/12/2020				0.4	3.3	0.4				
21/1/2021					2	1.4	2.7			
4/2/2021				0.3	2.3	0.7	3.3			
11/3/2021				0.2		0.2	0.5			
13/4/2021				0.3		0.3				
27/5/2021				0.3		0.3				
10/6/2021				0.3	4.7	0.3				
22/7/2021				0.5		0.6	0.2			
24/8/2021				0.6		0.6				
23/9/2021				1.4		1.5				
28/10/2021										
18/11/2021				3.5	0.9	1.6	1			
23/12/2021				3.3	0.9	2.4				
13/1/2022				4.6	3.4	1.6	3.6			
22/2/2022					1.2	1.2	1.36			
29/3/2022				3.3	1.4	2.9	1.8			
20/4/2022				3.6		3.5				
17/5/2022				2.6						
22/12/2022					2.7	1.1				
23/01/2023				4.7	2.4	4	0.9			
27/02/2023				1.2	1.5	1.2	0.4			
20/03/2023				0.4	1	0.4	0.4			
17/04/2023					3.3	1.1	1.6			
9/05/2023				2.3		2.6	1.1			
15/06/2023										
13/07/2023				3.7	6.9	4.2				
3/08/2023				3.8	4.4	0.1				
14/09/2023					0.8					
19/10/2023				0.6		0.6				
22/11/2023										

A.10 Filtered Metals at ADP1

Table A 10: Filtered metals at CIPS ADP1 site.

ADP1	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 Trigger Value	SSTV to be developed	SSTV to be developed	14	49.0 (Cr III)	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/4/2016	10	1	0.1	1	1	2	1	0.1	1	7
10/5/2016	10	1	0.1	1	1	1	1	0.1	1	371
9/6/2016	0	0	0	0	0	0	0	0	0	0
21/7/2016	0	0	0	0	0	0	0	0	0	0
25/8/2016	0	0	0	0	0	0	0	0	0	0
27/9/2016	10	1	0.1	1	1	2	1	0.1	1	358
25/10/2016	10	2	0.1	1	1	5	1	0.1	1	768
24/11/2016	0	0	0	0	0	0	0	0	0	0
15/12/2016	0	0	0	0	0	0	0	0	0	0
19/1/2017	10	1	0.1	1	1	4	1	0.1	1	817
23/2/2017	10	2	0.1	1	1	3	1	0.1	1	472
30/3/2017	10	1	0.1	1	1	3	1	0.1	1	650
27/4/2017	10	1	0.1	1	1	3	1	0.1	1	527
30/5/2017	10	1	0.1	1	1	3	1	0.1	1	667
22/6/2017	10	1	0.1	1	1	4	1	0.1	1	911
31/7/2017	0	0	0	0	0	0	0	0	0	0
31/8/2017	10	1	0.1	1	1	1	1	0.1	1	438
21/9/2017	10	2	0.1	1	1	4	1	0.1	1	285
24/10/2017	10	8	0.1	4	1	**10**	1	0.1	1	5
16/11/2017	10	7	0.1	3	1	**14**	1	0.1	1	10
20/12/2017	10	6	0.1	3	1	4	1	0.1	1	5
18/1/2018	10	7	0.1	3	1	2	1	0.1	1	5
22/2/2018	0	0	0	0	0	0	0	0	0	0
22/3/2018	0	0	0	0	0	0	0	0	0	0
19/4/2018	10	6	0.1	4	1	2	1	0.1	1	7
17/5/2018	10	2	0.1	1	1	2	1	0.1	1	15
21/6/2018	10	3	0.1	2	1	2	1	0.1	1	7
19/7/2018	10	4	0.1	4	1	6	1	0.1	1	5
23/8/2018	0	0	0	0	0	0	0	0	0	0
20/9/2018	0	0	0	0	0	0	0	0	0	0
24/10/2018	0	0	0	0	0	0	0	0	0	0
20/11/2018	10	1	0.1	1	1	1	1	0.1	1	7
18/12/2018	0	0	0	0	0	0	0	0	0	0
22/1/2019	10	7	0.1	3	1	1	1	0.1	1	5
19/2/2019	10	8	0.1	3	1	6	1	0.1	1	5
19/3/2019	10	8	0.1	4	1	2	1	0.1	1	5
16/4/2019	10	7	0.1	3	1	3	1	0.1	1	5
23/5/2019	10	7	0.1	4	1	2	1	0.1	1	5
20/6/2019	0	0	0	0	0	0	0	0	0	0
23/7/2019	0	0	0	0	0	0	0	0	0	0
26/8/2019	0	0	0	0	0	0	0	0	0	0
17/9/2019	0	0	0	0	0	0	0	0	0	0
17/10/2019	0	0	0	0	0	0	0	0	0	0
21/11/2019	10	7	0.1	3	1	3	1	0.1	1	5
12/12/2019	10	8	0.1	2	1	3	1	0.1	1	5
14/1/2020	10	7	0.1	3	1	7	1	0.1	1	5
20/2/2020	10	6	0.1	2	1	6	1	0.1	1	5
26/3/2020	10	6	0.1	3	1	3	1	0.1	1	5
23/4/2020	10	6	0.1	3	1	**12**	1	0.1	1	5
21/5/2020	10	6	0.1	4	1	**16**	1	0.1	1	5
18/6/2020	0	0	0	0	0	0	0	0	0	0
23/7/2020	0	0	0	0	0	0	0	0	0	0
20/8/2020	10	1	0.1	1	1	2	1	0.1	1	9
24/9/2020	10	1	0.1	1	1	1	1	0.1	1	5
29/10/2020	0	0	0	0	0	0	0	0	0	0
3/11/2020	0	0	0	0	0	0	0	0	0	0
26/11/2020	10	1	0.1	1	1	1	1	0.1	1	5
3/12/2020	10	1	0.1	1	1	1	1	0.1	1	5
21/1/2021	0	0	0	0	0	0	0	0	0	0
4/2/2021	10	1	0.1	1	1	2	1	0.1	1	10
11/3/2021	10	1	0.1	1	1	1	1	0.1	1	5
13/4/2021	10	1	0.1	1	1	1	1	0.1	1	5
27/5/2021	10	1	0.1	1	1	1	1	0.1	1	5
10/6/2021	10	1	0.1	1	1	1	1	0.1	1	5
22/7/2021	10	1	0.1	1	1	1	1	0.1	1	5
24/8/2021	10	1	0.1	1	1	1	1	0.1	1	5
23/9/2021	10	1	0.1	2	1	4	1	0.1	1	5
28/10/2021										
18/11/2021	10	5	0.1	2	1	7	1	0.1	1	5
23/12/2021	10	5	0.1	2	1	5	1	0.1	1	5
13/1/2022	10	5	0.1	3	1	8	1	0.1	1	5
22/2/2022										
29/3/2022	10	5	0.1	3	1	3	1	0.1	1	5
20/4/2022	10	5	0.1	3	1	3	1	0.1	1	5
17/5/2022	10	1	0.1	1	1	1	1	0.1	1	5
22/12/2022										
23/01/2023	10	4	0.1	4	1	6	1	0.1	1	**46.0***
27/02/2023	10	0.1	0.1	1	1	1	1	0.1	1	**30.0***
20/03/2023	10	1	0.1	1	1	1	1	0.1	1	5
17/04/2023										
9/05/2023	10	2	0.1	4	1	6	1	0.1	1	5
15/06/2023										
13/07/2023	10	3	0.1	3	1	**13**	1	0.1	1	6
3/08/2023	10	3	0.1	2	1	**22**	1	0.1	1	5
14/09/2023										
19/10/2023	10	1	0.1	1	1	1	1	0.1	0.1	5
22/11/2023										

A.11 Filtered Metals at ADP2

Table A 11: Filtered metals at CIPS ADP2 site.

ADP2	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 Trigger Value	SSTV to be developed	SSTV to be developed	14	49.0 (Cr III)	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/4/2016	10	1	0.1	1	1	1	1	0.1	1	**40**
10/5/2016	10	1	0.1	1	1	1	1	0.1	5	**53**
9/6/2016	20	2	0.1	1	1	2	1	0.1	2	5
21/7/2016	10	1	0.1	1	1	4	1	0.1	2	**40**
25/8/2016	10	1	0.1	1	1	**14**	1	0.1	2	**36**
27/9/2016	20	1	0.1	1	1	2	1	0.1	2	**76**
25/10/2016	40	1	0.1	1	1	6	1	0.1	1	**69**
24/11/2016	700	1	0.1	1	1	4	1	0.1	2	**34**
15/12/2016	250	2	0.1	1	1	1	1	0.1	1	**24**
19/1/2017	180	1	0.1	1	1	1	1	0.1	1	**38**
23/2/2017	80	1	0.1	1	1	1	1	0.1	1	**51**
30/3/2017	60	1	0.1	1	1	1	1	0.1	1	**22**
27/4/2017	20	1	0.1	1	1	1	1	0.1	1	**56**
30/5/2017	10	1	0.1	1	1	1	1	0.1	1	**45**
22/6/2017	10	1	0.1	1	1	4	1	0.1	1	**66**
31/7/2017	30	1	0.1	1	1	4	1	0.1	1	**167**
31/8/2017	30	1	0.1	2	1	5	1	0.1	3	**62**
21/9/2017	0	0	0	0	0	0	0	0	0	0
24/10/2017	10	1	0.1	1	1	4	1	0.1	2	**48**
16/11/2017	10	1	0.1	1	1	1	1	0.1	2	**94**
20/12/2017	30	1	0.1	1	1	2	1	0.1	2	11
18/1/2018	60	1	0.1	1	1	1	1	0.1	1	**24**
22/2/2018	20	1	0.1	1	1	1	1	0.1	1	**46**
22/3/2018	40	1	0.1	1	1	2	1	0.1	1	**86**
19/4/2018	20	1	0.1	1	1	2	1	0.1	2	**79**
17/5/2018	10	1	0.1	1	1	2	1	0.1	1	13
21/6/2018	10	1	0.1	1	1	1	1	0.1	1	**25**
19/7/2018	0	0	0	0	0	0	0	0	0	0
23/8/2018	0	0	0	0	0	0	0	0	0	0
20/9/2018	0	0	0	0	0	0	0	0	0	0
24/10/2018	0	0	0	0	0	0	0	0	0	0
20/11/2018	0	0	0	0	0	0	0	0	0	0
18/12/2018	0	0	0	0	0	0	0	0	0	0
22/1/2019	0	0	0	0	0	0	0	0	0	0
19/2/2019	0	0	0	0	0	0	0	0	0	0
19/3/2019	0	0	0	0	0	0	0	0	0	0
16/4/2019	0	0	0	0	0	0	0	0	0	0
23/5/2019	0	0	0	0	0	0	0	0	0	0
20/6/2019	20	2	0.1	1	1	4	1	0.1	1	13
23/7/2019	10	1	0.1	1	1	4	1	0.1	1	17
26/8/2019	0	0	0	0	0	0	0	0	0	0
17/9/2019	0	0	0	0	0	0	0	0	0	0
17/10/2019	0	0	0	0	0	0	0	0	0	0
21/11/2019	0	0	0	0	0	0	0	0	0	0
12/12/2019	0	0	0	0	0	0	0	0	0	0
14/1/2020	60	1	0.1	1	1	1	1	0.1	1	**22**
20/2/2020	30	1	0.1	1	1	1	1	0.1	1	10
26/3/2020	0	0	0	0	0	0	0	0	0	0
23/4/2020	0	0	0	0	0	0	0	0	0	0
21/5/2020	0	0	0	0	0	0	0	0	0	0
18/6/2020	0	0	0	0	0	0	0	0	0	0
23/7/2020	10	1	0.1	1	1	2	1	0.1	1	14
20/8/2020	0	0	0	0	0	0	0	0	0	0
24/9/2020	0	0	0	0	0	0	0	0	0	0
29/10/2020	60	1	0.1	1	1	5	1	0.1	1	**32**
3/11/2020	0	0	0	0	0	0	0	0	0	0
26/11/2020	20	1	0.1	1	1	2	1	0.1	1	13
3/12/2020	30	1	0.1	1	1	2	1	0.1	1	20
21/1/2021	10	1	0.1	1	1	1	1	0.1	1	37
4/2/2021	10	1	0.1	1	1	1	1	0.1	1	93
11/3/2021	0	0	0	0	0	0	0	0	0	0
13/4/2021	0	0	0	0	0	0	0	0	0	0
27/5/2021	0	0	0	0	0	0	0	0	0	0
10/6/2021	20	1	0.1	1	1	2	1	0.1	1	**26**
22/7/2021	0	0	0	0	0	0	0	0	0	0
24/8/2021	0	0	0	0	0	0	0	0	0	0
23/9/2021	0	0	0	0	0	0	0	0	0	0
28/10/2021	0	0	0	0	0	0	0	0	0	0
18/11/2021	10	1	0.1	1	1	2	1	0.1	1	19
23/12/2021	10	1	0.1	1	1	2	1	0.1	1	**29**
13/1/2022	20	1	0.1	1	1	2	1	0.1	1	38
22/2/2022	20	1	0.1	1	1	1	1	0.1	1	11
29/3/2022	10	1	0.1	1	1	2	1	0.1	1	5
20/4/2022	0	0	0	0	0	0	0	0	0	0
17/5/2022										
22/12/2022	10	1	0.1	1	1	1	1	0.1	1	20
23/01/2023	20	1	0.1	1	1	1	1	0.1	1	**250.0***
27/02/2023	10	1	0.1	1	1	1	1	0.1	1	**81***
20/03/2023	50	1	0.1	1	1	1	1	0.1	1	**44**
17/04/2023	40	1	0.1	1	1	1	1	0.1	1	14
9/05/2023										
15/06/2023										
13/07/2023	20	1	0.1	1	1	1	1	0.1	1	**59***
3/08/2023	20	1	0.1	1	1	2	1	0.1	2	12
14/09/2023	10	1	0.1	1	1	2	1	0.1	0.1	18
19/10/2023	10	1	0.1	1	1	1	1	0.1	0.1	5
22/11/2023										

A.12 Filtered Metals at NODH1

Table A 12: Filtered metals at CIPS NODH1 site.

NODH1	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 Trigger Value	SSTV to be developed	SSTV to be developed	14	49.0 (Cr III	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/04/2016	10	1	0.1	1	1	3	1	0.1	1	**670**
10/05/2016	10	1	0.1	1	1	1	1	0.1	1	**388**
9/06/2016	0	0	0	0	0	0	0	0	0	0
21/07/2016	0	0	0	0	0	0	0	0	0	0
25/08/2016	0	0	0	0	0	0	0	0	0	0
27/09/2016	10	1	0.1	1	1	2	1	0.1	1	**345**
25/10/2016	10	2	0.1	1	1	5	1	0.1	1	**840**
24/11/2016	0	0	0	0	0	0	0	0	0	0
15/12/2016	0	0	0	0	0	0	0	0	0	0
19/01/2017	20	1	0.1	1	1	4	1	0.1	1	**1160**
23/02/2017	10	1	0.1	1	1	3	1	0.1	1	**511**
30/03/2017	40	1	0.1	1	1	4	1	0.1	1	**474**
27/04/2017	10	1	0.1	1	1	3	1	0.1	1	**504**
30/05/2017	10	1	0.1	1	1	3	1	0.1	1	**662**
22/06/2017	10	1	0.1	1	1	4	1	0.1	1	**932**
31/07/2017	0	0	0	0	0	0	0	0	0	0
31/08/2017	10	1	0.1	1	1	1	1	0.1	1	**368**
21/09/2017	10	1	0.1	1	1	4	1	0.1	1	**649**
24/10/2017	10	6	0.1	2	1	8	1	0.1	1	**64**
16/11/2017	0	0	0	0	0	0	0	0	0	0
20/12/2017	10	6	0.1	3	1	6	1	0.1	1	6
18/01/2018	10	5	0.1	2	1	2	1	0.1	1	5
22/02/2018	100	1	0.1	1	1	1	1	0.1	1	**152**
22/03/2018	90	1	0.1	1	1	1	1	0.1	1	**149**
19/04/2018	10	4	0.1	2	1	3	1	0.1	1	13
17/05/2018	10	1	0.1	1	1	2	1	0.1	1	13
21/06/2018	10	3	0.1	2	1	2	1	0.1	1	8
19/07/2018	10	4	0.1	3	1	5	1	0.1	1	7
23/08/2018	0	0	0	0	0	0	0	0	0	0
20/09/2018	0	0	0	0	0	0	0	0	0	0
24/10/2018	60	3	0.1	1	1	3	1	0.1	1	**48**
20/11/2018	20	1	0.1	1	1	1	1	0.1	1	**64**
18/12/2018	20	1	0.1	1	1	4	1	0.1	1	21
22/01/2019	10	5	0.1	2	1	1	1	0.1	1	8
19/02/2019	30	4	0.1	2	1	4	1	0.1	1	15
19/03/2019	10	4	0.1	2	1	2	1	0.1	1	9
16/04/2019	20	4	0.1	2	1	2	1	0.1	1	8
23/05/2019	10	4	0.1	2	1	2	1	0.1	1	5
20/06/2019	20	1	0.1	1	1	5	1	0.1	1	12
23/07/2019	0	0	0	0	0	0	0	0	0	0
26/08/2019	0	0	0	0	0	0	0	0	0	0
17/09/2019	20	1	0.1	1	1	2	1	0.1	1	12
17/10/2019	0	0	0	0	0	0	0	0	0	0
21/11/2019	10	3	0.1	2	1	2	1	0.1	1	10
12/12/2019	10	3	0.1	1	1	3	1	0.1	1	15
14/01/2020	360	1	0.1	1	1	2	1	0.1	1	**72**
20/02/2020	50	1	0.1	1	1	1	1	0.1	1	**34**
26/03/2020	20	4	0.1	2	1	2	1	0.1	1	15
23/04/2020	10	6	0.1	2	1	10	1	0.1	1	5
21/05/2020	10	6	0.1	3	1	13	1	0.1	1	5
18/06/2020	0	0	0	0	0	0	0	0	0	0
23/07/2020	0	0	0	0	0	0	0	0	0	0
20/08/2020	10	1	0.1	1	1	2	1	0.1	1	5
24/09/2020	10	1	0.1	1	1	1	1	0.1	1	5
29/10/2020	10	1	0.1	1	1	3	1	0.1	1	**44**
3/11/2020	10	1	0.1	1	1	1	1	0.1	1	5
26/11/2020	10	1	0.1	1	1	1	1	0.1	1	5
3/12/2020	10	1	0.1	1	1	1	1	0.1	1	5
21/01/2021	60	1	0.1	1	1	1	1	0.1	1	**82**
4/02/2021	20	1	0.1	1	1	1	1	0.1	1	**26**
11/03/2021	10	1	0.1	1	1	1	1	0.1	1	7
13/04/2021	10	1	0.1	1	1	1	1	0.1	1	11
27/05/2021	10	1	0.1	1	1	1	1	0.1	1	5
10/06/2021	10	1	0.1	1	1	1	1	0.1	1	5
22/07/2021	10	1	0.1	1	1	2	1	0.1	1	5
24/08/2021	10	1	0.1	1	1	1	1	0.1	1	5
23/09/2021	10	2	0.1	2	1	3	1	0.1	1	5
28/10/2021										
18/11/2021	20	2	0.1	1	1	3	1	0.1	1	**26**
23/12/2021	10	2	0.1	1	1	4	1	0.1	1	13
13/01/2022	10	1	0.1	1	1	1	1	0.1	1	19
22/02/2022	20	1	0.1	1	1	1	1	0.1	1	**84**
29/03/2022	10	4	0.1	2	1	3	1	0.1	1	5
20/04/2022	10	5	0.1	3	1	3	1	0.1	1	6
17/05/2022										
22/12/2022	10	1	0.1	1	1	1	1	0.1	1	**33**
23/01/2023	10	4	0.1	3	1	5	1	0.1	1	**38.0***
27/02/2023	140	0.1	0.1	1	1	1	1	0.1	1	**120.0***
20/03/2023	10	1	0.1	1	1	1	1	0.1	1	5
17/04/2023	20	1	0.1	1	1	1	1	0.1	1	**78**
9/05/2023	140	4	0.1	4	1	7	1	0.1	1	15
15/06/2023										
13/07/2023	10	3	0.1	3	1	**13**	1	0.1	1	7
3/08/2023	140	3	0.1	2	1	**26**	1	0.1	1	5
14/09/2023										
19/10/2023	10	1	0.1	1	1	1	1	0.1	0.1	5
22/11/2023										

A.13 Filtered Metals at SODH1

Table A 13: Filtered metals at CIPS SODH1 site.

SODH1	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 Trigger Value	SSTV to be developed	SSTV to be developed	14	49.0 (Cr III)	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/04/2016	**100***	**10***	**1**	**10***	**10***	**10***	**10***	0.1	**10***	**50***
10/05/2016	**100***	**10***	**1**	**10***	**10***	**10***	**10***	0.1	**10***	**50***
9/06/2016	**100***	**10***	**1**	**10***	**10***	**10***	**10***	0.1	**10***	**50***
21/07/2016	10	1	0.1	1	1	1	1	0.1	1	**42**
25/08/2016	10	1	0.1	1	1	1	1	0.1	1	**40**
27/09/2016	10	1	0.1	1	1	1	1	0.1	1	**37**
25/10/2016	**100***	**10***	**1**	**10***	**10***	**10***	**10***	**0.1**	**10***	**50***
24/11/2016	5	1.8	1	0.5	0.2	1	0.2	0.1	1.1	10
15/12/2016	190	1	0.1	1	1	4	1	0.1	1	**50**
19/01/2017	5	1	0	0.5	0.2	1	0.2	0.1	1.1	16
23/02/2017	0	0	0	0	0	0	0	0	0	0
30/03/2017	30	1	0.1	1	1	1	1	0.1	1	**26**
27/04/2017	5	1.5	0.2	0.5	0.2	1	0.2	0.04	0.9	**28**
30/05/2017	0	0	0	0	0	0	0	0	0	0
22/06/2017	0	0	0	0	0	0	0	0	0	0
31/07/2017	10	1	0.1	1	1	2	1	0.1	1	11
31/08/2017	10	1	0.1	1	1	1	1	0.1	1	36
21/09/2017	0	0	0	0	0	0	0	0	0	0
24/10/2017	0	0	0	0	0	0	0	0	0	0
16/11/2017	0	0	0	0	0	0	0	0	0	0
20/12/2017	0	0	0	0	0	0	0	0	0	0
18/01/2018	6	0.5	0.2	0.5	0.2	0.2	0.2	0.04	0.5	**54**
22/02/2018	40	2	0.1	1	1	1	1	0.1	1	**30**
22/03/2018	20	1	0.2	1	1	2	1	0.1	1	**43**
19/04/2018	9	1.2	0.2	0.5	0.2	2	0.2	0.04	0.5	**22**
17/05/2018	10	1	0.1	1	1	1	1	0.1	1	**29**
21/06/2018	0	0	0	0	0	0	0	0	0	0
19/07/2018	0	0	0	0	0	0	0	0	0	0
23/08/2018	0	0	0	0	0	0	0	0	0	0
20/09/2018	0	0	0	0	0	0	0	0	0	0
24/10/2018	0	0	0	0	0	0	0	0	0	0
20/11/2018	40	1	0.1	1	1	1	1	0.1	1	14
18/12/2018	0	0	0	0	0	0	0	0	0	0
22/01/2019	0	0	0	0	0	0	0	0	0	0
19/02/2019	**100***	**10***	**1**	**10***	**10***	**10***	**10***	**0.1**	**10***	**50***
19/03/2019	0	0	0	0	0	0	0	0	0	0
16/04/2019	0	0	0	0	0	0	0	0	0	0
23/05/2019	0	0	0	0	0	0	0	0	0	0
20/06/2019	20	1	0.1	1	1	1	1	0.1	1	5
23/07/2019	0	0	0	0	0	0	0	0	0	0
26/08/2019	0	0	0	0	0	0	0	0	0	0
17/09/2019	0	0	0	0	0	0	0	0	0	0
17/10/2019	0	0	0	0	0	0	0	0	0	0
21/11/2019	0	0	0	0	0	0	0	0	0	0
12/12/2019	70	1	0.1	1	1	1	1	0.1	1	15
14/01/2020	110	1	0.1	1	1	1	1	0.1	1	**22**
20/02/2020	0	0	0	0	0	0	0	0	0	0
26/03/2020	0	0	0	0	0	0	0	0	0	0
23/04/2020	0	0	0	0	0	0	0	0	0	0
21/05/2020	10	1	0.1	1	1	1	1	0.1	1	5
18/06/2020	10	1	0.1	1	1	1	1	0.1	1	5
23/07/2020	0	0	0	0	0	0	0	0	0	0
20/08/2020	0	0	0	0	0	0	0	0	0	0
24/09/2020	18	1	0.1	6	1	6	5	0.1	1	**97**
29/10/2020	0	0	0	0	0	0	0	0	0	0
3/11/2020	0	0	0	0	0	0	0	0	0	0
26/11/2020	0	0	0	0	0	0	0	0	0	0
3/12/2020	20	1	0.1	1	1	1	1	0.1	1	12
21/01/2021	10	1	0.1	1	1	1	1	0.1	1	21
4/02/2021	20	1	0.1	1	1	1	1	0.1	1	**22**
11/03/2021	0	0	0	0	0	0	0	0	0	0
13/04/2021	0	0	0	0	0	0	0	0	0	0
27/05/2021	0	0	0	0	0	0	0	0	0	0
10/06/2021	10	1	0.1	1	1	1	1	0.1	1	5
22/07/2021	0	0	0	0	0	0	0	0	0	0
24/08/2021	0	0	0	0	0	0	0	0	0	0
23/09/2021	0	0	0	0	0	0	0	0	0	0
28/10/2021	100*	10*	1	10*	10*	10*	10*	0.1	**10***	50*
18/11/2021	0	0	0	0	0	0	0	0	0	0
23/12/2021	10	1	0.1	1	1	1	1	0.1	1	5
13/01/2022	5	0.2	0.05	0.2	0.2	0.7	100	0.04	0.6	8
22/02/2022	10	1	0.1	1	1	2	1	0.1	1	7
29/03/2022	0	0	0	0	0	0	0	0	0	0
20/04/2022	0	0	0	0	0	0	0	0	0	0
17/05/2022			0							
22/12/2022	5	1	0.2	0.5	0.2	1	0.2	-	0.5	**95**
23/01/2023	100*	10*	1	10*	10*	10*	10*	0.1	**10***	50*
27/02/2023	90	1	0.1	1	1	1	1	0.1	1	**100***
20/03/2023	10	1	0.1	1	1	1	1	0.1	1	7
17/04/2023	70	0.7	0.2	0.5	0.2	1	0.2	0.005	0.5	8
9/05/2023	**100***	**10***	**1**	**10***	**10***	**10***	**10***	0.1	**10***	**50***
15/06/2023										
13/07/2023										
3/08/2023										
14/09/2023										
19/10/2023										
22/11/2023										

A.14 Filtered Metals at Cooling ponds

Table A 14: Filtered metals at CIPS ILCP and ISCP sites.

ILCP	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 Trigger V	SSTV to be dev	SSTV to be d	14	49.0 (Cr III	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/04/2016	10	3	0.1	1	1	1	1	0.1	2	5
21/07/2016	10	4	0.1	2	1	3	1	0.1	6	**44**
25/10/2016	0	0	0	0	0	0	0	0	0	0
19/01/2017	1290	1	0.9	1	8	8	1	0.1	22	**618**
27/04/2017	310	2	0.2	1	2	4	1	0.1	8	**1440**
31/07/2017	0	0	0	0	0	0	0	0	0	0
24/10/2017	1430	2	0.9	1	**18**	**15**	1	0.1	45	**1300**
18/01/2018	20	1	0.1	1	1	2	1	0.1	2	**84**
19/04/2018	10	1	0.1	1	1	2	1	0.1	1	**38**
19/07/2018	20	1	0.1	1	1	2	1	0.1	1	5
24/10/2018	10	6	0.1	1	1	3	1	0.1	1	5
22/01/2019	50	2	0.1	1	1	2	1	0.1	2	5
16/04/2019	10	1	0.1	1	1	2	1	0.1	1	5
23/07/2019	30	3	0.1	1	1	4	1	0.1	2	5
17/10/2019	10	5	0.1	1	1	2	1	0.1	2	5
14/01/2020	20	2	0.1	1	1	1	1	0.1	1	5
23/04/2020	10	2	0.1	1	1	1	1	0.1	1	5
23/07/2020	10	2	0.2	1	1	1	1	0.1	1	5
29/10/2020	10	4	0.1	1	1	3	1	0.1	1	5
3/11/2020	0	0	0	0	0	0	0	0	0	0
21/01/2021	10	1	0.1	1	1	1	1	0.1	1	5
13/04/2021	10	1	0.1	1	1	1	1	0.1	1	5
22/07/2021	10	1	0.1	1	1	1	1	0.1	1	5
28/10/2021	10	1	0.1	1	1	1	1	0.1	2	5
13/01/2022	10	1	0.1	1	1	1	1	0.1	1	5
22/02/2022	10	1	0.1	1	1	1	1	0.1	1	5
20/04/2022	10	1	0.1	1	1	1	1	0.1	1	5
27/02/2023	10	1	0.1	1	1	1	1	0.1	1	**40***
9/05/2023	10	1	0.1	1	1	1	1	0.1	1	5
3/08/2023	10	1	0.1	1	1	1	1	0.1	1	5
22/11/2023	10	1	0.1	1	1	1	1	0.1	1	5

ISCP	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 Trigger V	SSTV to be dev	SSTV to be d	14	49.0 (Cr III	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/04/2016	20	1	0.1	1	1	1	1	0.1	1	**25**
21/07/2016	80	1	0.1	1	1	4	1	0.1	1	**45**
25/10/2016	60	1	0.1	1	1	8	1	0.1	1	12
19/01/2017	220	1	0.1	1	1	1	1	0.1	1	17
27/04/2017	30	1	0.1	1	1	1	1	0.1	1	**28**
31/07/2017	10	1	0.1	1	1	2	1	0.1	1	**33**
24/10/2017	30	1	0.1	1	1	5	1	0.1	2	**67**
18/01/2018	40	1	0.1	1	1	1	1	0.1	1	12
19/04/2018	50	1	0.1	1	1	4	1	0.1	2	**36**
19/07/2018	10	1	0.1	1	1	1	1	0.1	1	5
24/10/2018	10	1	0.1	1	1	1	1	0.1	1	5
22/01/2019	90	1	0.1	1	1	2	1	0.1	1	**29**
16/04/2019	20	1	0.1	1	1	1	1	0.1	1	10
23/07/2019	20	1	0.1	1	1	5	1	0.1	1	18
17/10/2019	30	1	0.1	1	1	2	1	0.1	1	7
14/01/2020	110	1	0.1	1	1	1	1	0.1	1	**55**
23/04/2020	40	1	0.1	1	1	1	1	0.1	1	5
23/07/2020	10	1	0.1	1	1	5	1	0.1	1	**24**
29/10/2020	30	1	0.1	1	1	4	1	0.1	1	5
3/11/2020	0	0	0	0	0	0	0	0	0	0
21/01/2021	10	1	0.1	1	1	1	1	0.1	1	**52**
13/04/2021	20	1	0.1	1	1	1	1	0.1	1	10
22/07/2021	20	1	0.1	1	1	3	1	0.1	1	9
28/10/2021	10	1	0.1	1	1	1	1	0.1	1	6
13/01/2022	20	1	0.1	1	1	1	1	0.1	2	**23**
22/02/2022	20	1	0.1	1	1	1	1	0.1	1	14
20/04/2022	40	1	0.1	1	1	2	1	0.1	1	11
27/02/2023	10	1	0.1	1	1	1	1	0.1	1	**115***
9/05/2023	40	1	0.1	1	1	2	1	0.1	1	11
3/08/2023	20	1	0.1	1	1	3	1	0.1	1	**22**
22/11/2023	80	1	0.1	1	1	2	1	0.1	1	**51**

A.15 Total Metals at ADP1

Table A 15: Total metals at CIPS ADP1 site.

ADP1	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 Trigger V	SSTV to be dev	SSTV to be c	**14**	**49.0 (Cr III) 20.0 (Cr VI)**	**14**	**8**	**6.6**	**0.7**	**200**	**21**
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/04/2016	30	1	0.1	1	1	10	1	0.1	1	**1080**
10/05/2016	10	1	0.1	1	1	2	1	0.1	1	**596**
9/06/2016	0	0	0	0	0	0	0	0	0	0
21/07/2016	0	0	0	0	0	0	0	0	0	0
25/08/2016	0	0	0	0	0	0	0	0	0	0
27/09/2016	10	1	0.1	1	1	2	1	0.1	1	**502**
25/10/2016	20	2	0.1	1	1	5	1	0.1	1	**1270**
24/11/2016	0	0	0	0	0	0	0	0	0	0
15/12/2016	0	0	0	0	0	0	0	0	0	0
19/01/2017	50	2	0.1	1	1	5	1	0.1	1	**1360**
23/02/2017	10	1	0.1	1	1	3	1	0.1	1	**456**
30/03/2017	30	4	0.6	3	2	6	1	0.1	2	**1010**
27/04/2017	20	1	0.1	1	1	4	1	0.1	1	**886**
30/05/2017	50	1	0.1	1	1	4	1	0.1	1	**935**
22/06/2017	20	1	0.1	1	1	4	1	0.1	1	**1020**
31/07/2017	0	0	0	0	0	0	0	0	0	0
31/08/2017	10	1	0.1	1	1	2	1	0.1	1	**511**
21/09/2017	30	1	0.1	1	1	6	1	0.1	1	**848**
24/10/2017	10	7	0.1	3	1	**10**	1	0.1	1	**59**
16/11/2017	20	6	0.1	3	1	**18**	1	0.1	1	**152**
20/12/2017	10	6	0.1	3	1	6	1	0.1	1	8
18/01/2018	20	6	0.1	3	1	4	1	0.1	1	**64**
22/02/2018	0	0	0	0	0	0	0	0	0	0
22/03/2018	0	0	0	0	0	0	0	0	0	0
19/04/2018	20	6	0.1	4	1	3	1	0.1	1	18
17/05/2018	50	2	0.1	1	1	4	1	0.1	1	14
21/06/2018	160	3	0.1	2	1	5	1	0.1	1	**237**
19/07/2018	90	5	0.1	4	1	9	1	0.1	1	**88**
23/08/2018	0	0	0	0	0	0	0	0	0	0
20/09/2018	0	0	0	0	0	0	0	0	0	0
24/10/2018	0	0	0	0	0	0	0	0	0	0
20/11/2018	10	1	0.1	1	1	2	1	0.1	1	5
18/12/2018	0	0	0	0	0	0	0	0	0	0
22/01/2019	10	7	0.1	4	1	2	1	0.1	1	5
19/02/2019	20	8	0.1	4	1	7	1	0.1	1	5
19/03/2019	20	8	0.1	4	1	3	1	0.1	1	11
16/04/2019	10	9	0.1	4	1	3	1	0.1	1	5
23/05/2019	40	8	0.1	4	1	2	1	0.1	2	10
20/06/2019	0	0	0	0	0	0	0	0	0	0
23/07/2019	0	0	0	0	0	0	0	0	0	0
26/08/2019	0	0	0	0	0	0	0	0	0	0
17/09/2019	0	0	0	0	0	0	0	0	0	0
17/10/2019	0	0	0	0	0	0	0	0	0	0
21/11/2019	20	7	0.1	3	1	3	1	0.1	1	5
12/12/2019	10	8	0.1	3	1	4	1	0.1	1	5
14/01/2020	10	7	0.1	3	1	**11**	1	0.1	1	**75**
20/02/2020	40	7	0.1	2	1	**12**	1	0.1	1	6
26/03/2020	60	6	0.1	3	1	4	1	0.1	1	12
23/04/2020	20	6	0.1	3	1	**17**	1	0.1	1	5
21/05/2020	100	6	0.1	4	1	**24**	1	0.1	1	11
18/06/2020	0	0	0	0	0	0	0	0	0	0
23/07/2020	0	0	0	0	0	0	0	0	0	0
20/08/2020	10	1	0.1	1	1	2	1	0.1	1	10
24/09/2020	10	1	0.1	1	1	1	1	0.1	1	5
29/10/2020	0	0	0	0	0	0	0	0	0	0
3/11/2020	0	0	0	0	0	0	0	0	0	0
26/11/2020	10	1	0.1	1	1	1	1	0.1	1	6
3/12/2020	10	1	0.1	1	1	1	1	0.1	1	9
21/01/2021	0	0	0	0	0	0	0	0	0	0
4/02/2021	30	1	0.1	1	1	3	1	0.1	1	**84**
11/03/2021	10	1	0.1	1	1	1	1	0.1	1	6
13/04/2021	10	1	0.1	1	1	1	1	0.1	1	5
27/05/2021	10	1	0.1	1	1	1	1	0.1	1	5
10/06/2021	10	1	0.1	1	1	2	1	0.1	1	17
22/07/2021	10	1	0.1	1	1	1	1	0.1	1	8
24/08/2021	10	1	0.1	1	1	2	1	0.1	1	8
23/09/2021	20	2	0.1	2	1	8	1	0.1	1	**22**
28/10/2021	0	0	0	0	0	0	0	0	0	0
18/11/2021	20	5	0.1	3	1	**10**	1	0.1	1	14
23/12/2021	10	5	0.1	2	1	6	1	0.1	1	5
13/01/2022	20	5	0.1	3	1	**11**	1	0.1	1	5
22/02/2022	0	0	0	0	0	0	0	0	0	0
29/03/2022	10	6	0.1	3	1	5	1	0.1	1	5
20/04/2022	10	7	0.1	4	1	5	1	0.1	1	16
17/05/2022	60	4	0.1	3	1	6	1	0.1	1	**32**
22/12/2022										
23/01/2023	10	6	0.1	4	1	**8**	1	0.1	1	5
27/02/2023	10	1	0.1	1	1	**1**	1	0.1	1	**5**
20/03/2023	10	1	0.1	1	1	1	1	0.1	1	5
17/04/2023										
9/05/2023	10	3	0.1	4	1	7	1	0.1	1	13
15/06/2023										
13/07/2023	10	3	0.1	3	1	**16**	1	0.1	1	5
3/08/2023	20	3	0.1	2	1	**33**	1	0.1	1	**22**
14/09/2023										
19/10/2023	10	1	0.1	1	1	2	1	0.1	0.1	5
22/11/2023										

A.16 Total Metals at ADP2

Table A 16: Total metals at CIPS ADP2 site.

ADP2	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 T	SSTV to be de	SSTV to be c	14	49.0 (Cr III)	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/04/2016	20	1	0.1	1	1	1	1	0.1	1	**26**
10/05/2016	10	1	0.1	1	1	1	1	0.1	6	14
9/06/2016	30	3	0.2	1	1	1	1	0.1	3	5
21/07/2016	40	1	0.1	1	1	7	1	0.1	2	**57**
25/08/2016	20	1	0.1	2	1	**25**	1	0.1	3	**48**
27/09/2016	400	2	0.3	1	1	3	5	0.1	2	**115**
25/10/2016	60	1	0.1	1	1	6	1	0.1	1	18
24/11/2016	600	1	0.1	1	1	4	1	0.1	2	**50**
15/12/2016	210	1	0.1	1	1	2	1	0.1	1	**28**
19/01/2017	170	1	0.1	1	1	1	1	0.1	1	**28**
23/02/2017	180	1	0.1	1	1	1	1	0.1	1	**50**
30/03/2017	100	1	0.1	1	1	1	1	0.1	1	**35**
27/04/2017	20	2	0.1	1	1	1	1	0.1	1	**42**
30/05/2017	40	1	0.1	1	1	1	1	0.1	1	**25**
22/06/2017	20	1	0.1	1	1	4	1	0.1	1	**59**
31/07/2017	30	1	0.1	1	1	4	1	0.1	1	**25**
31/08/2017	220	1	0.1	5	1	**14**	1	0.1	4	**42**
21/09/2017	0	0	0	0	0	0	0	0	0	0
24/10/2017	10	1	0.1	1	1	5	1	0.1	4	**34**
16/11/2017	20	1	0.1	1	1	2	1	0.1	2	**24**
20/12/2017	40	1	0.1	1	1	3	1	0.1	1	16
18/01/2018	40	1	0.1	1	1	3	1	0.1	1	18
22/02/2018	80	1	0.1	1	1	1	1	0.1	1	**39**
22/03/2018	60	1	0.1	1	1	**21**	1	0.1	2	**60**
19/04/2018	40	1	0.1	1	1	2	1	0.1	2	**41**
17/05/2018	50	1	0.1	1	1	4	1	0.1	2	**24**
21/06/2018	20	1	0.1	1	1	1	1	0.1	1	10
19/07/2018	0	0	0	0	0	0	0	0	0	0
23/08/2018	0	0	0	0	0	0	0	0	0	0
20/09/2018	0	0	0	0	0	0	0	0	0	0
24/10/2018	0	0	0	0	0	0	0	0	0	0
20/11/2018	0	0	0	0	0	0	0	0	0	0
18/12/2018	0	0	0	0	0	0	0	0	0	0
22/01/2019	0	0	0	0	0	0	0	0	0	0
19/02/2019	0	0	0	0	0	0	0	0	0	0
19/03/2019	0	0	0	0	0	0	0	0	0	0
16/04/2019	0	0	0	0	0	0	0	0	0	0
23/05/2019	0	0	0	0	0	0	0	0	0	0
20/06/2019	30	1	0.1	1	1	5	1	0.1	2	**26**
23/07/2019	10	1	0.1	1	1	5	1	0.1	1	17
26/08/2019	0	0	0	0	0	0	0	0	0	0
17/09/2019	0	0	0	0	0	0	0	0	0	0
17/10/2019	0	0	0	0	0	0	0	0	0	0
21/11/2019	0	0	0	0	0	0	0	0	0	0
12/12/2019	0	0	0	0	0	0	0	0	0	0
14/01/2020	90	1	0.1	1	1	2	1	0.1	1	**62**
20/02/2020	90	1	0.1	1	1	2	1	0.1	1	**26**
26/03/2020	0	0	0	0	0	0	0	0	0	0
23/04/2020	0	0	0	0	0	0	0	0	0	0
21/05/2020	0	0	0	0	0	0	0	0	0	0
18/06/2020	0	0	0	0	0	0	0	0	0	0
23/07/2020	10	1	0.1	1	1	5	1	0.1	1	**23**
20/08/2020	0	0	0	0	0	0	0	0	0	0
24/09/2020	0	0	0	0	0	0	0	0	0	0
29/10/2020	70	1	0.1	1	1	5	1	0.1	1	**27**
3/11/2020	0	0	0	0	0	0	0	0	0	0
26/11/2020	40	1	0.1	1	1	4	1	0.1	1	**32**
3/12/2020	80	1	0.1	1	1	4	1	0.1	1	**31**
21/01/2021	10	1	0.1	1	1	1	1	0.1	1	**45**
4/02/2021	60	1	0.1	1	1	1	1	0.1	2	**71**
11/03/2021	0	0	0	0	0	0	0	0	0	0
13/04/2021	0	0	0	0	0	0	0	0	0	0
27/05/2021	0	0	0	0	0	0	0	0	0	0
10/06/2021	50	1	0.3	1	1	3	1	0.1	4	**40**
22/07/2021	0	0	0	0	0	0	0	0	0	0
24/08/2021	0	0	0	0	0	0	0	0	0	0
23/09/2021	0	0	0	0	0	0	0	0	0	0
28/10/2021	0	0	0	0	0	0	0	0	0	0
18/11/2021	20	1	0.1	1	1	5	1	0.1	1	**30**
23/12/2021	10	1	0.1	1	1	2	1	0.1	1	**33**
13/01/2022	50	1	0.1	1	1	2	1	0.1	1	**60**
22/02/2022	30	1	0.1	1	1	1	1	0.1	1	**27**
29/03/2022	20	1	0.1	1	1	3	1	0.1	1	**12**
20/04/2022	0	0	0	0	0	0	0	0	0	0
17/05/2022	0	0	0	0	0	0	0	0	0	0
22/12/2022	30	1	0.1	1	1	1	1	0.1	1	**29**
23/01/2023	40	1	0.1	1	1	1	1	0.1	2	**99**
27/02/2023	30	1	0.1	2	1	1	1	0.1	25	**30**
20/03/2023	70	1	0.1	1	1	1	1	0.1	1	**101**
17/04/2023	20	1	0.1	1	1	1	1	0.1	1	7
9/05/2023										
15/06/2023										
13/07/2023	20	1	0.1	1	1	1	1	0.1	2	**29**
3/08/2023	20	1	0.1	1	1	2	1	0.1	2	**23**
14/09/2023	10	1	0.1	1	1	5	1	0.1	1	**32**
19/10/2023										
22/11/2023										

A.17 Total Metals at NODH1

Table A 17: Total metals at CIPS NODH1 site.

NODH1	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 Trigger V	SSTV to be dev	SSTV to be c	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/04/2016	40	1	0.1	1	1	4	1	0.1	1	**1090**
10/05/2016	20	1	0.1	1	1	2	1	0.1	1	**714**
9/06/2016										
21/07/2016										
25/08/2016										
27/09/2016	10	1	0.1	1	1	2	1	0.1	1	**484**
25/10/2016	20	1	0.1	1	1	5	1	0.1	1	**1150**
24/11/2016										
15/12/2016										
19/01/2017	60	3	0.1	1	1	5	1	0.1	1	**1230**
23/02/2017	130	1	0.1	1	1	4	1	0.1	1	**826**
30/03/2017	140	1	0.1	1	1	2	1	0.1	1	**465**
27/04/2017	30	1	0.1	1	1	4	1	0.1	2	**785**
30/05/2017	60	1	0.1	1	1	4	1	0.1	1	**896**
22/06/2017	120	1	0.1	1	1	4	1	0.1	1	**1200**
31/07/2017										
31/08/2017	10	1	0.1	1	1	2	1	0.1	1	**448**
21/09/2017	20	1	0.1	1	1	5	1	0.1	1	**822**
24/10/2017	310	7	0.1	3	1	**11**	1	0.1	2	**470**
16/11/2017										
20/12/2017	10	6	0.1	3	1	6	1	0.1	1	7
18/01/2018	20	5	0.1	2	1	2	1	0.1	1	12
22/02/2018	200	1	0.1	1	1	3	1	0.1	1	**135**
22/03/2018	120	1	0.1	1	1	1	1	0.1	2	**115**
19/04/2018	90	4	0.1	2	1	3	1	0.1	1	**35**
17/05/2018	30	2	0.1	1	1	4	1	0.1	1	**28**
21/06/2018	50	3	0.1	2	1	3	1	0.1	1	**49**
19/07/2018	530	5	0.1	4	1	**10**	1	0.1	1	**261**
23/08/2018										
20/09/2018										
24/10/2018	90	2	0.1	1	1	3	1	0.1	1	**62**
20/11/2018	330	1	0.1	1	1	6	2	0.1	2	**166**
18/12/2018	30	1	0.1	1	1	6	1	0.1	1	**29**
22/01/2019	20	5	0.1	2	1	2	1	0.1	1	12
19/02/2019	30	5	0.1	2	1	4	1	0.1	1	**25**
19/03/2019	20	5	0.1	2	1	3	1	0.1	1	16
16/04/2019	30	5	0.1	2	1	2	1	0.1	1	13
23/05/2019	30	4	0.1	3	1	1	1	0.1	2	10
20/06/2019	30	1	0.1	1	1	3	1	0.1	1	18
23/07/2019										
26/08/2019										
17/09/2019	40	1	0.1	1	1	2	1	0.1	1	**30**
17/10/2019										
21/11/2019	30	4	0.1	2	1	2	1	0.1	1	**30**
12/12/2019	10	3	0.1	1	1	3	1	0.1	2	10
14/01/2020	340	1	0.1	1	1	3	1	0.1	1	**78**
20/02/2020	260	1	0.1	1	1	3	1	0.1	1	**56**
26/03/2020	40	5	0.1	2	1	3	1	0.1	1	**24**
23/04/2020	30	6	0.1	3	1	**17**	1	0.1	1	12
21/05/2020	670	6	0.1	4	1	**34**	2	0.1	2	115
18/06/2020										
23/07/2020										
20/08/2020	10	1	0.1	1	1	2	1	0.1	1	5
24/09/2020	130	1	0.1	1	1	4	1	0.1	1	**69**
29/10/2020	20	1	0.1	1	1	4	1	0.1	1	**46**
3/11/2020	30	1	0.1	1	1	3	1	0.1	1	**39**
26/11/2020	30	1	0.1	1	1	3	1	0.1	1	**39**
3/12/2020	20	1	0.1	1	1	1	1	0.1	1	10
21/01/2021	70	1	0.1	1	1	1	1	0.1	1	**85**
4/02/2021	130	1	0.1	2	1	2	1	0.1	2	**32**
11/03/2021	30	1	0.4	1	1	3	1	0.1	1	**62**
13/04/2021	10	1	0.1	1	1	**12**	1	0.1	1	20
27/05/2021	10	1	0.1	1	1	2	1	0.1	1	9
10/06/2021	10	1	0.1	1	1	2	1	0.1	1	7
22/07/2021	10	1	0.1	1	1	1	1	0.1	1	8
24/08/2021	10	1	0.1	1	1	2	1	0.1	1	7
23/09/2021	20	2	0.1	2	1	7	1	0.1	1	**25**
28/10/2021										
18/11/2021	100	2	0.1	1	1	6	1	0.1	1	**76**
23/12/2021	40	3	0.1	1	1	4	1	0.1	1	18
13/01/2022	470	1	0.1	1	1	3	1	0.1	1	**64**
22/02/2022	90	1	0.1	1	1	2	1	0.1	1	**93**
29/03/2022	10	4	0.1	2	1	3	1	0.1	1	14
20/04/2022	10	6	0.1	3	1	5	1	0.1	1	13
17/05/2022										
22/12/2022	60	1	0.1	1	1	1	1	0.1	1	**38**
23/01/2023	20	4	0.1	4	1	8	1	0.1	1	19
27/02/2023	230	1	0.1	1	1	1	1	0.1	1	**41**
20/03/2023	10	1	0.1	1	1	1	1	0.1	1	6
17/04/2023	90	1	0.1	1	1	1	1	0.1	1	**81**
9/05/2023	20	3	0.1	4	1	7	1	0.1	1	**22**
15/06/2023										
13/07/2023	10	3	0.1	3	1	**16**	1	0.1	1	8
3/08/2023	210	4	0.1	3	1	**36**	1	0.1	1	**52**
14/09/2023										
19/10/2023	10	1	0.1	1	1	2	1	0.1	0.1	5
22/11/2023										

A.18 Total Metals at SODH1

Table A 18: Total metals at CIPS SODH1 site.

SODH1	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 T	SSTV to be d	SSTV to be d	14	49.0 (Cr III)	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/04/2016	**100***	**10***	**1**	**10***	**10***	**10***	**10***	**0.1**	**10***	**52***
10/05/2016	**100***	**10***	**1**	**10***	**10***	**10***	**10***	**0.1**	**10***	**52***
9/06/2016	**100***	**10***	**1**	**10***	**10***	**10***	**10***	**0.1**	**10***	**52***
21/07/2016	10	1	0.1	1	1	1	1	0.1	1	5
25/08/2016	3360	22	0.1	17	12	**27**	**8**	0.1	34	**97**
27/09/2016	10	1	0.1	1	1	1	1	0.1	1	5
25/10/2016	**100***	**10***	**1**	**10***	**10***	**10***	**10***	**0.1**	**10***	**52***
24/11/2016	12	1.8	0.001	0.5	0.2	1	**0.2**	0.1	1.1	8
15/12/2016	840	1	0.1	2	1	6	2	0.1	1	**90**
19/01/2017	25	1.5	0	0.5	0.2	1	0.2	0.1	1.1	11
23/02/2017										
30/03/2017	100	1	0.3	1	1	2	1	0.1	1	14
27/04/2017	11	1.5	0.2	0.5	0.2	1	0.2	0.04	0.6	11
30/05/2017										
22/06/2017										
31/07/2017	10	3	0.1	1	1	1	1	0.1	1	5
31/08/2017	50	1	0.1	1	1	1	1	0.1	1	5
21/09/2017										
24/10/2017										
16/11/2017										
20/12/2017										
18/01/2018	112	0.5	0.2	0.5	0.2	2	0.2	0.04	0.6	**33**
22/02/2018	170	1	0.1	1	1	2	1	0.1	1	14
22/03/2018	90	1	0.1	1	1	1	1	0.1	2	19
19/04/2018	39	1.3	0.2	0.5	0.2	2	0.2	0.04	0.5	13
17/05/2018	20	1	0.1	1	1	1	1	0.1	1	5
21/06/2018										
19/07/2018										
23/08/2018										
20/09/2018										
24/10/2018										
20/11/2018	30	1	0.1	1	1	1	1	0.1	1	14
18/12/2018										
22/01/2019										
19/02/2019										
19/03/2019	**100***	**10***	**1**	**10***	**10***	**10***	**10***	**0.1**	**10***	**52***
16/04/2019										
23/05/2019										
20/06/2019										
23/07/2019	10	1	0.1	1	1	1	1	0.1	1	5
26/08/2019										
17/09/2019										
17/10/2019										
21/11/2019										
12/12/2019										
14/01/2020	490	1	0.1	1	1	2	1	0.1	1	21
20/02/2020	200	1	0.1	1	1	3	1	0.1	1	**30**
26/03/2020										
23/04/2020										
21/05/2020										
18/06/2020	20	1	0.1	1	1	1	1	0.1	1	5
23/07/2020	10	1	0.1	1	1	1	1	0.1	1	5
20/08/2020										
24/09/2020										
29/10/2020	4430	1	0.1	11	1	8	6	0.1	3	**104**
3/11/2020										
26/11/2020										
3/12/2020										
21/01/2021	80	1	0.1	1	1	1	1	0.1	1	9
4/02/2021	1560	1	0.1	3	1	4	3	0.1	8	**67**
11/03/2021	40	1	0.2	1	1	1	1	0.1	1	**24**
13/04/2021										
27/05/2021										
10/06/2021										
22/07/2021	10	1	0.1	1	1	1	1	0.1	1	5
24/08/2021										
23/09/2021										
28/10/2021										
18/11/2021	**100***	**10***	**1**	**10***	**10***	**10***	**10***	**0.1**	**10***	**52***
23/12/2021										
13/01/2022	80	1	0.1	1	1	1	1	0.1	1	11
22/02/2022	5	0.2	0.05	0.2	0.2	0.7	0.1	0.04	0.6	8
29/03/2022	30	1	0.1	1	1	5	1	0.1	1	15
20/04/2022										
17/05/2022										
22/12/2022	112									
23/01/2023	**100***	**10***	**1**	**10***	**10***	**10***	**10***	**0.1**	**10***	**52***
27/02/2023	740	1	0.1	1	1	1	1	0.1	1	**34**
20/03/2023	10	1	0.1	1	1	1	1	0.1	1	5
17/04/2023	67	0.7	0.2	0.5	0.2	1	0.2	0.1	0.5	10
9/05/2023	**100***	**10***	**1**	**10***	**10***	**10***	**10***	**0.1**	**10***	**50***
15/06/2023										
13/07/2023										
3/08/2023										
14/09/2023										
19/10/2023										
22/11/2023										

A.19 Total Metals at ILCP and ISCP

Table A 19: Total metals at CIPS Cooling ponds sites.

ILCP	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 Trigger V	SSTV to be dev	SSTV to be d	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/04/2016	10	2	0.1	1	1	1	1	0.3	2	5
21/07/2016	40	5	0.1	3	1	6	1	0.1	9	**150**
25/10/2016	0	0	0	0	0	0	0	0	0	0
19/01/2017	1550	2	0.9	1	8	**10**	1	0.1	25	**592**
27/04/2017	340	1	0.1	1	2	3	1	0.1	7	**1470**
31/07/2017	0	0	0	0	0	0	0	0	0	0
24/10/2017	1540	3	0.9	2	**19**	**17**	1	0.1	51	**1340**
18/01/2018	40	1	0.1	1	1	3	1	0.1	1	**29**
19/04/2018	10	1	0.1	1	1	2	1	0.1	1	5
19/07/2018	40	2	0.1	1	1	3	1	0.1	1	8
24/10/2018	20	5	0.1	1	1	3	1	0.1	1	5
22/01/2019	190	2	0.1	1	1	2	1	0.1	2	5
16/04/2019	10	2	0.1	1	1	1	1	0.1	1	5
23/07/2019	20	3	0.1	1	1	4	1	0.1	2	8
17/10/2019	30	5	0.1	1	1	2	1	0.1	1	5
14/01/2020	10	2	0.1	1	1	1	1	0.1	1	5
23/04/2020	10	2	0.1	10	1	1	1	0.1	1	5
23/07/2020	10	3	0.1	1	1	3	1	0.1	1	5
29/10/2020	10	3	0.1	1	1	2	1	0.1	1	5
3/11/2020	0	0	0	0	0	0	0	0	0	0
21/01/2021	10	1	0.1	1	1	1	1	0.1	1	5
13/04/2021	10	1	0.1	1	1	1	1	0.1	1	5
22/07/2021	10	1	0.1	1	1	1	1	0.1	1	5
28/10/2021	10	2	0.1	1	1	1	1	0.1	1	5
13/01/2022	10	1	0.1	1	1	1	1	0.1	1	5
22/02/2022	10	1	0.1	1	1	3	1	0.1	1	5
20/04/2022	20	1	0.1	1	1	1	1	0.1	1	6
27/02/2023	10	1	0.1	1	1	1	1	0.1	1	5
9/05/2023	10	1	0.1	1	1	1	1	0.1	1	5
3/08/2023	30	1	0.1	1	1	2	1	0.1	2	5
22/11/2023	10	1	0.1	1	1	2	1	0.1	1	5

ISCP	Aluminium	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WDL212-03 Trigger V	SSTV to be dev	SSTV to be d	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	21
LOR	10	1	0.1	1	1	1	1	0.1	1	5
14/04/2016	40	1	0.1	1	1	1	1	0.1	1	20
21/07/2016	40	1	0.1	1	1	6	1	0.1	1	**55**
25/10/2016	90	1	0.1	1	1	8	1	0.1	2	**29**
19/01/2017	220	1	0.1	1	1	1	1	0.1	1	**28**
27/04/2017	40	1	0.1	1	1	2	1	0.1	1	**46**
31/07/2017	30	1	0.1	1	1	4	1	0.1	1	**29**
24/10/2017	50	1	0.2	1	1	6	1	0.1	3	**100**
18/01/2018	100	1	0.1	1	1	3	1	0.1	1	**33**
19/04/2018	80	1	0.1	1	1	3	1	0.1	2	**71**
19/07/2018	20	1	0.1	1	1	1	1	0.1	1	11
24/10/2018	30	1	0.1	1	1	2	1	0.1	1	8
22/01/2019	60	1	0.1	1	1	2	1	0.1	1	**55**
16/04/2019	20	1	0.1	1	1	2	1	0.1	1	18
23/07/2019	20	1	0.1	1	1	5	1	0.1	1	17
17/10/2019	30	1	0.1	1	1	3	1	0.1	1	11
14/01/2020	150	1	0.1	1	1	4	1	0.1	1	**148**
23/04/2020	70	1	0.1	1	1	4	1	0.1	1	**28**
23/07/2020	10	1	0.1	1	1	6	1	0.1	1	21
29/10/2020	70	1	0.1	1	1	5	1	0.1	1	**34**
3/11/2020	0	0	0	0	0	0	0	0	0	0
21/01/2021	10	1	0.1	1	1	1	1	0.1	1	**47**
13/04/2021	30	1	0.1	1	1	2	1	0.1	1	**25**
22/07/2021	40	1	0.1	1	1	4	1	0.1	1	**23**
28/10/2021	10	1	0.1	1	1	1	1	0.1	1	12
13/01/2022	40	1	0.1	1	1	2	1	0.1	2	**61**
22/02/2022	20	1	0.1	1	1	1	1	0.1	1	**22**
20/04/2022	40	1	0.1	1	1	4	1	0.1	1	20
27/02/2023	30	1	0.1	1	1	1	1	0.1	1	**82**
9/05/2023	50	1	0.1	1	1	3	1	0.1	1	17
3/08/2023	10	1	0.1	1	1	3	1	0.1	1	**25**
22/11/2023	120	1	0.1	1	1	7	1	0.1	2	**176**

A.20 Hydrocarbons at ADP1

Table A 20: Hydrocarbons at CIPS ADP1 site.

Group of Hydrocarbon	Hydrocarbon	Units	WDL212-03 Trigger Value	LOR	22/12/2022	23/01/2023	27/02/2023	20/03/2023	17/04/2023	9/05/2023	15/06/2023	13/07/2023	3/08/2023	14/09/2023	19/10/2023	22/11/2023
Polycyclic Aromatic Hydrocarbons	Naphthalene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Acenaphthylene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Acenaphthene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Fluorene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Phenanthrene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Anthracene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Pyrene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Benz(a)anthracene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Chrysene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Benzo(b+j)fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Benzo(k)fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Benzo(a)pyrene	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5		<0.5		<0.5	<0.5		<0.5	
	Indeno(1.2.3.cd)pyrene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Dibenz(a.h)anthracene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Benzo(g.h.i)perylene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Sum of polycyclic aromatic hydroca	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5		<0.5		<0.5	<0.5		<0.5	
	Benzo(a)pyrene TEQ (zero)	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5		<0.5		<0.5	<0.5		<0.5	
Total Petroleum Hydrocarbons	C6 - C9 Fraction	µg/L	SSTV to be de	20		<20	<20	<20		<20		<20	<20		<20	
	C10 - C14 Fraction	µg/L	SSTV to be de	50		<50	<50	<50		<50		<50	<50		<50	
	C15 - C28 Fraction	µg/L	SSTV to be de	100		<100	<100	<100		<100		<100	<100		<100	
	C29 - C36 Fraction	µg/L	SSTV to be de	50		<50	<50	<50		<50		<50	<50		<50	
	C10 - C36 Fraction (sum)	µg/L	SSTV to be de	50		<50	<50	<50		<50		<50	<50		<50	
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	µg/L	SSTV to be de	20		<20	<20	<20		<20		<20	<20		<20	
	C6 - C10 Fraction minus BTEX	µg/L	SSTV to be de	20		<20	<20	<20		<20		<20	<20		<20	
	C10 - C16 Fraction	µg/L	SSTV to be de	100		<100	<100	<100		<100		<100	<100		<100	
	C16 - C34 Fraction	µg/L	SSTV to be de	100		<100	<100	<100		<100		<100	<100		<100	
	C34 - C40 Fraction	µg/L	SSTV to be de	100		<100	<100	<100		<100		<100	<100		<100	
	C10 - C40 Fraction (sum)	µg/L	SSTV to be de	100		<100	<100	<100		<100		<100	<100		<100	
	C10 - C16 Fraction minus Naphthal	µg/L	SSTV to be de	100		<100	<100	<100		<100		<100	<100		<100	
BTEXN	Benzene	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Toluene	µg/L	SSTV to be de	2		<2	<2	<2		<2		<2	<2		<2	
	Ethylbenzene	µg/L	SSTV to be de	2		<2	<2	<2		<2		<2	<2		<2	
	meta- & para-Xylene	µg/L	SSTV to be de	2		<2	<2	<2		<2		<2	<2		<2	
	ortho-Xylene	µg/L	SSTV to be de	2		<2	<2	<2		<2		<2	<2		<2	
	Total Xylenes	µg/L	SSTV to be de	2		<2	<2	<2		<2		<2	<2		<2	
	Sum of BTEX	µg/L	SSTV to be de	1		<1	<1	<1		<1		<1	<1		<1	
	Naphthalene	µg/L	SSTV to be de	5		<5	<5	<5		<5		<5	<5		<5	

A.21 Hydrocarbons at ADP2

Table A 21: Hydrocarbons at CIPS ADP2 site.

ADP2																
Group of Hydrocarbon	Hydrocarbon	Units	WDL212-03 Trigger Value	LOR	22/12/2022	23/01/2023	27/02/2023	20/03/2023	17/04/2023	9/05/2023	15/06/2023	13/07/2023	3/08/2023	14/09/2023	19/10/2023	22/11/2023
Polycyclic Aromatic Hydrocarbons	Naphthalene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Acenaphthylene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Acenaphthene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Fluorene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Phenanthrene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Anthracene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Pyrene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Benz(a)anthracene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Chrysene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Benzo(b+j)fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Benzo(k)fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Benzo(a)pyrene	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5		
	Indeno(1.2.3.cd)pyrene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Dibenz(a.h)anthracene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Benzo(g.h.i)perylene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Sum of polycyclic aromatic hydroca	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5		
	Benzo(a)pyrene TEQ (zero)	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5		
Total Petroleum Hydrocarbons	C6 - C9 Fraction	µg/L	SSTV to be de	20		<20	<20	<20	<20			<20	<20	<20		
	C10 - C14 Fraction	µg/L	SSTV to be de	50		640	<50	<50	<50			140	<50	<50		
	C15 - C28 Fraction	µg/L	SSTV to be de	100		260	<100	<100	340			310	370	<100		
	C29 - C36 Fraction	µg/L	SSTV to be de	50		<50	<50	<50	<50			<50	<50	<50		
	C10 - C36 Fraction (sum)	µg/L	SSTV to be de	50		900	<50	<50	340			450	370	<50		
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	µg/L	SSTV to be de	20		<20	<20	<20	<20			<20	<20	<20		
	C6 - C10 Fraction minus BTEX	µg/L	SSTV to be de	20		<20	<20	<20	<20			<20	<20	<20		
	C10 - C16 Fraction	µg/L	SSTV to be de	100		<100	<100	<100	<100			<100	<100	<100		
	C16 - C34 Fraction	µg/L	SSTV to be de	100		250	<100	<100	340			300	320	<100		
	C34 - C40 Fraction	µg/L	SSTV to be de	100		<100	<100	<100	<100			<100	<100	<100		
	C10 - C40 Fraction (sum)	µg/L	SSTV to be de	100		250	<100	<100	340			300	320	<100		
	C10 - C16 Fraction minus Naphthal	µg/L	SSTV to be de	100		<100	<100	<100	<100			<100	<100	<100		
BTEXN	Benzene	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Toluene	µg/L	SSTV to be de	2		<2	<2	<2	<2			<2	<2	<2		
	Ethylbenzene	µg/L	SSTV to be de	2		<2	<2	<2	<2			<2	<2	<2		
	meta- & para-Xylene	µg/L	SSTV to be de	2		<2	<2	<2	<2			<2	<2	<2		
	ortho-Xylene	µg/L	SSTV to be de	2		<2	<2	<2	<2			<2	<2	<2		
	Total Xylenes	µg/L	SSTV to be de	2		<2	<2	<2	<2			<2	<2	<2		
	Sum of BTEX	µg/L	SSTV to be de	1		<1	<1	<1	<1			<1	<1	<1		
	Naphthalene	µg/L	SSTV to be de	5		<5	<5	<5	<5			<5	<5	<5		

A.22 Hydrocarbons at NODH1

Table A 22: Hydrocarbons at NODH1 site.

NODH1																
Group of Hydrocarbon	Hydrocarbon	Units	WDL212-03 Trigger Value	LOR	22/12/2022	23/01/2023	27/02/2023	20/03/2023	17/04/2023	9/05/2023	15/06/2023	13/07/2023	3/08/2023	14/09/2023	19/10/2023	22/11/2023
Polycyclic Aromatic Hydrocarbons	Naphthalene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Acenaphthylene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Acenaphthene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Fluorene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Phenanthrene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Anthracene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Pyrene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Benz(a)anthracene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Chrysene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Benzo(b+j)fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Benzo(k)fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Benzo(a)pyrene	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5		<0.5	
	Indeno(1.2.3.cd)pyrene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Dibenz(a.h)anthracene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Benzo(g.h.i)perylene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Sum of polycyclic aromatic hydroca	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5		<0.5	
	Benzo(a)pyrene TEQ (zero)	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5		<0.5	
Total Petroleum Hydrocarbons	C6 - C9 Fraction	µg/L	SSTV to be de	20		<20	<20	<20	<20	<20		<20	<20		<20	
	C10 - C14 Fraction	µg/L	SSTV to be de	50		<50	<50	<50	<50	<50		<50	<50		<50	
	C15 - C28 Fraction	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100		<100	<100		<100	
	C29 - C36 Fraction	µg/L	SSTV to be de	50		<50	<50	<50	<50	<50		<50	<50		<50	
	C10 - C36 Fraction (sum)	µg/L	SSTV to be de	50		<50	<50	<50	<50	<50		<50	<50		<50	
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	µg/L	SSTV to be de	20		<20	<20	<20	<20	<20		<20	<20		<20	
	C6 - C10 Fraction minus BTEX	µg/L	SSTV to be de	20		<20	<20	<20	<20	<20		<20	<20		<20	
	C10 - C16 Fraction	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100		<100	<100		<100	
	C16 - C34 Fraction	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100		<100	<100		<100	
	C34 - C40 Fraction	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100		<100	<100		<100	
	C10 - C40 Fraction (sum)	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100		<100	<100		<100	
	C10 - C16 Fraction minus Naphthal	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100		<100	<100		<100	
BTEXN	Benzene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Toluene	µg/L	SSTV to be de	2		<2	<2	<2	<2	<2		<2	<2		<2	
	Ethylbenzene	µg/L	SSTV to be de	2		<2	<2	<2	<2	<2		<2	<2		<2	
	meta- & para-Xylene	µg/L	SSTV to be de	2		<2	<2	<2	<2	<2		<2	<2		<2	
	ortho-Xylene	µg/L	SSTV to be de	2		<2	<2	<2	<2	<2		<2	<2		<2	
	Total Xylenes	µg/L	SSTV to be de	2		<2	<2	<2	<2	<2		<2	<2		<2	
	Sum of BTEX	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1		<1	<1		<1	
	Naphthalene	µg/L	SSTV to be de	5		<5	<5	<5	<5	<5		<5	<5		<5	

A.23 Hydrocarbons at SODH1

Table A 23: Hydrocarbons at SODH1 site.

SODH1																
Group of Hydrocarbon	Hydrocarbon	Units	WDL212-03 Trigger Value	LOR	22/12/2022	23/01/2023	27/02/2023	20/03/2023	17/04/2023	9/05/2023	15/06/2023	13/07/2023	3/08/2023	14/09/2023	19/10/2023	22/11/2023
Polycyclic Aromatic Hydrocarbons	Naphthalene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Acenaphthylene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Acenaphthene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Fluorene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Phenanthrene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Anthracene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Pyrene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Benz(a)anthracene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Chrysene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Benzo(b+j)fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Benzo(k)fluoranthene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Benzo(a)pyrene	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5	<0.5	<0.5						
	Indeno(1.2.3.cd)pyrene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Dibenz(a.h)anthracene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Benzo(g.h.i)perylene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Sum of polycyclic aromatic hydroca	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5	<0.5	<0.5						
	Benzo(a)pyrene TEQ (zero)	µg/L	SSTV to be de	0.5		<0.5	<0.5	<0.5	<0.5	<0.5						
Total Petroleum Hydrocarbons	C6 - C9 Fraction	µg/L	SSTV to be de	20		<20	<20	30	<20	<20						
	C10 - C14 Fraction	µg/L	SSTV to be de	50		<50	<50	<50	<50	<50						
	C15 - C28 Fraction	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100						
	C29 - C36 Fraction	µg/L	SSTV to be de	50		<50	<50	<50	<50	<50						
	C10 - C36 Fraction (sum)	µg/L	SSTV to be de	50		<50	<50	<50	<50	<50						
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	µg/L	SSTV to be de	20		<20	<20	30	<20	<20						
	C6 - C10 Fraction minus BTEX	µg/L	SSTV to be de	20		<20	<20	30	<20	<20						
	C10 - C16 Fraction	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100						
	C16 - C34 Fraction	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100						
	C34 - C40 Fraction	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100						
	C10 - C40 Fraction (sum)	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100						
	C10 - C16 Fraction minus Naphthal	µg/L	SSTV to be de	100		<100	<100	<100	<100	<100						
BTEXN	Benzene	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Toluene	µg/L	SSTV to be de	2		<2	<2	<2	<2	<2						
	Ethylbenzene	µg/L	SSTV to be de	2		<2	<2	<2	<2	<2						
	meta- & para-Xylene	µg/L	SSTV to be de	2		<2	<2	<2	<2	<2						
	ortho-Xylene	µg/L	SSTV to be de	2		<2	<2	<2	<2	<2						
	Total Xylenes	µg/L	SSTV to be de	2		<2	<2	<2	<2	<2						
	Sum of BTEX	µg/L	SSTV to be de	1		<1	<1	<1	<1	<1						
	Naphthalene	µg/L	SSTV to be de	5		<5	<5	<5	<5	<5						

A.24 Hydrocarbons at ILCP and ISCP

Table A 24: Hydrocarbons at Cooling ponds sites.

					ILCP					ISCP			
Group of Hydrocarbon	Hydrocarbon	Units	C6	LOR	27/2/2023	9/05/2023	3/08/2023	22/11/2023		27/02/2023	9/05/2023	3/08/2023	22/11/2023
Polycyclic Aromatic Hydrocarbons	Naphthalene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Acenaphthylene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Acenaphthene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Fluorene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Phenanthrene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Anthracene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Fluoranthene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Pyrene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Benz(a)anthracene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Chrysene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Benzo(b+j)fluoranthene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Benzo(a)pyrene	µg/L	SSTV to be de	0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5
	Indeno(1.2.3.cd)pyrene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Dibenz(a.h)anthracene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Benzo(g.h.i)perylene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Sum of polycyclic aromatic hydroca	µg/L	SSTV to be de	0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero)	µg/L	SSTV to be de	0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5
Total Petroleum Hydrocarbons	C6 - C9 Fraction	µg/L	SSTV to be de	20	<20	<20	<20	<20		<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	SSTV to be de	50	<50	<50	<50	<50		<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	SSTV to be de	100	<100	2160	1220	<100		<100	210	260	580
	C29 - C36 Fraction	µg/L	SSTV to be de	50	<50	60	<50	<50		<50	<50	<50	100
	C10 - C36 Fraction (sum)	µg/L	SSTV to be de	50	<50	2290	1220	<50		<50	210	260	680
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	µg/L	SSTV to be de	20	<20	<20	<20	<20		<20	<20	<20	<20
	C6 - C10 Fraction minus BTEX	µg/L	SSTV to be de	20	<20	<20	<20	<20		<20	<20	<20	<20
	C10 - C16 Fraction	µg/L	SSTV to be de	100	<100	<100	<100	<100		<100	<100	<100	<100
	C16 - C34 Fraction	µg/L	SSTV to be de	100	<100	2180	1270	<100		<100	200	220	600
	C34 - C40 Fraction	µg/L	SSTV to be de	100	<100	<100	<100	<100		<100	<100	<100	<100
	C10 - C40 Fraction (sum)	µg/L	SSTV to be de	100	<100	2180	1270	<100		<100	200	220	600
	C10 - C16 Fraction minus Naphthale	µg/L	SSTV to be de	100	<100	<100	<100	<100		<100	<100	<100	<100
BTEXN	Benzene	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Toluene	µg/L	SSTV to be de	2	<2	<2	<2	<2		<2	<2	<2	<2
	Ethylbenzene	µg/L	SSTV to be de	2	<2	<2	<2	<2		<2	<2	<2	<2
	meta- & para-Xylene	µg/L	SSTV to be de	2	<2	<2	<2	<2		<2	<2	<2	<2
	ortho-Xylene	µg/L	SSTV to be de	2	<2	<2	<2	<2		<2	<2	<2	<2
	Total Xylenes	µg/L	SSTV to be de	2	<2	<2	<2	<2		<2	<2	<2	<2
	Sum of BTEX	µg/L	SSTV to be de	1	<1	<1	<1	<1		<1	<1	<1	<1
	Naphthalene	µg/L	SSTV to be de	5	<5	<5	<5	<5		<5	<5	<5	<5

APPENDIX CERTIFICATES OF ANALYSIS

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: ES2246482	Page	: 1 of 4
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: VICTOR CALDERON	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 23-Dec-2022 10:30
Order number	: ----	Date Analysis Commenced	: 23-Dec-2022
C-O-C number	: ----	Issue Date	: 10-Jan-2023 16:14
Sampler	: Kien Nguyen, Quentin Vander-Mower		
Site	: Channel Island Power Station		
Quote number	: SY/339/18 V3		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

RIGHT SOLUTIONS | RIGHT PARTNER

Page	:	2 of 4
Work Order	:	ES2246482
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS WDL

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG093: Samples containing high levels of sulfate may precipitate barium under the acidic conditions of this method and may therefore bias results low.

Page	: 3 of 4
Work Order	: ES2246482
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	NODH1	ADP2	----	----
				Sampling date / time	22-Dec-2022 09:31	22-Dec-2022 10:10	22-Dec-2022 10:20	----	----
Compound	CAS Number	LOR	Unit		ES2246482-001	ES2246482-002	ES2246482-003	--------	--------
					Result	Result	Result	---	---
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	---	5	mg/L		8	<5	<5	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		----	<0.01	0.01	----	----
Arsenic	7440-38-2	0.001	mg/L		----	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		----	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L		----	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		----	0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L		----	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		----	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		----	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L		----	0.033	0.020	----	----
Tin	7440-31-5	0.001	mg/L		----	<0.001	<0.001	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		----	0.06	0.03	----	----
Arsenic	7440-38-2	0.001	mg/L		----	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		----	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L		----	0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		----	0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L		----	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		----	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		----	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L		----	0.038	0.029	----	----
Tin	7440-31-5	0.001	mg/L		----	<0.001	<0.001	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		----	<0.0001	<0.0001	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		----	<0.0001	<0.0001	----	----
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	----	----	----	----
Arsenic	7440-38-2	0.5	µg/L		1.0	----	----	----	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	----	----	----	----
Chromium	7440-47-3	0.5	µg/L		<0.5	----	----	----	----
Cobalt	7440-48-4	0.2	µg/L		<0.2	----	----	----	----
Copper	7440-50-8	1	µg/L		<1	----	----	----	----

TROP WATER PTY LTD

Page : 4 of 4
Work Order : ES2246482
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

ALS

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	NODH1	ADP2	----	----
				Sampling date / time	22-Dec-2022 09:31	22-Dec-2022 10:10	22-Dec-2022 10:20	----	----
Compound	CAS Number	LOR	Unit		ES2246482-001	ES2246482-002	ES2246482-003	--------	--------
					Result	Result	Result	---	---
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS - Continued									
Lead	7439-92-1	0.2	µg/L		<0.2	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		<0.5	----	----	----	----
Tin	7440-31-5	5	µg/L		<5	----	----	----	----
Zinc	7440-66-6	5	µg/L		95	----	----	----	----
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		112	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		----	0.07	1.79	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		0.01	<0.01	0.01	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		----	0.91	0.29	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		----	0.91	0.30	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		----	0.2	2.4	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		----	1.1	2.7	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		----	0.04	0.03	----	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		0.02	0.01	<0.01	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<2	<2	<2	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2246454**	Page	: 1 of 2
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: * ADMIN	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 8981 8889	Telephone	: +61-2-8784 8555
Project	: CIPS SEWERAGE TREATMENT OPERATIONAL VERIFICATION	Date Samples Received	: 23-Dec-2022 10:30
Order number	: ----	Date Analysis Commenced	: 24-Dec-2022
C-O-C number	: ----	Issue Date	: 05-Jan-2023 12:47
Sampler	: , Kien Nguyen, Quentin Vander-Mower		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

Page	: 2 of 2
Work Order	: ES2246454
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS SEWERAGE TREATMENT OPERATIONAL VERIFICATION

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)			*Sample ID*	**WWTP**	----	----	----	----
			Sampling date / time	22-Dec-2022 10:40	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**ES2246454-001**	--------	--------	--------	--------
				Result	--	--	--	--
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**12**	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	**5**	----	----	----	----

TROP WATER PTY LTD

NORTHERN TERRITORY GOVERNMENT Department of Industry, Tourism and Trade

Certificate of Analysis

Project No: **D223568 Final Report**

Report Number: **96763** *Date Issued:* **23/12/2022**

Water Microbiology Darwin
BVL Building, Berrimah Farm
29 Makagon Road, BERRIMAH, NT 0828
p: +61 8 8999 2347
f: +61 8 8923 9566
e: WaterLabsDarwin.ITT@nt.gov.au
w: https://industry.nt.gov.au/

NATA Accredited Laboratory
Accreditation Number 15606
Accredited for compliance with ISO/IEC17025 - Testing

Customer **Trop Water Pty Ltd**
Address: **12/43 Berrimah Road Berrimah NT 0828**

Project Title: **WWTP**
Attention: **Mr. Victor Calderon**

Date Received: **22/12/2022**
Date Completed: **23/12/2022**

Number of Samples Received: **1**
Number of Samples Tested: **1**

The sample(s) referred to in this report were analysed by the following method(s):

Analyte	*Method Reference*	*Accreditation Status*	*Analyte*	*Method Reference*	*Accreditation Status*
E. coli (MPN)	AS 4276.21	NATA Accredited			

Lab Number	Sampling Point*	Customer Reference*	Free Cl (mg/L)*	Total Cl (mg/L)*	Sample Collection Temp (°C)*	Temp on Arrival (°C) #	Type of Sample
D223568-01	WWTP	-	Not supplied	Not supplied	29.77	11	Water

*Based on information supplied by customer ; # Reported arrival temperature reflects the approximate temperature of the group of samples when received by the laboratory. This measurement does not fall within the scope of the Laboratory's NATA Accreditation.

Holding Time

Max Holding Time is the maximum time permitted between sample collection and commencement of analysis. Reference: AS 2031.

^ indicates the sample has exceeded the maximum holding time permitted for the analysis. Affected results must be considered indicative only.

**Sample collection dates and times are reported as supplied by the customer and reported holding times are calculated from this information. While all due care is taken during transcription, the accuracy of this information is not guaranteed by the laboratory.

		E. coli Max Holding Time: 24 hrs	
Lab Number	Sample Collected**	Date of Analysis	Analysed within**
D223568-01	22/12/2022 10:40am	22/12/2022 1:35pm	2h 55m

Results of Analysis

	E. coli MPN/100mL
D223568-01 WWTP	7

The results in this report were authorised by:

Stephen Poole - Laboratory Manager

MPN = Most Probable Number. **Measurement Uncertainty** (MU) should be considered when assessing quantitative results. Contact the labora

Dates are reported in the format dd/mm/yyyy.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: ES2302187	Page	: 1 of 6
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: GODFRED DUODU	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 24-Jan-2023 08:30
Order number	: ----	Date Analysis Commenced	: 24-Jan-2023
C-O-C number	: ----	Issue Date	: 01-Feb-2023 15:59
Sampler	: GODFRED DUODU, Quentin Vander-Mower		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 4		
No. of samples analysed	: 4		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

Page	: 2 of 6
Work Order	: ES2302187
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

General Comments

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Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EG020: LORs have been raised for some samples due to matrix interference (High sample salinity)
- EG020: It has been confirmed by re-digestion and re-analysis that dissolved concentration of some elements is higher than total concentration for sample ES2302187-004. For all other elements where filtered results are greater than total results, the difference is within experimental variation of the methods.
- EP075(SIM): Surrogate recovery bias low due to sample matrix interferences.

TROP WATER Pty Ltd

Page : 3 of 6
Work Order : ES2302187
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

ALS

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SODH1	ADP1	NODH1	ADP2	----
			Sampling date / time	23-Jan-2023 12:05	23-Jan-2023 10:22	23-Jan-2023 11:36	23-Jan-2023 10:45	----
Compound	CAS Number	LOR	Unit	ES2302187-001	ES2302187-002	ES2302187-003	ES2302187-004	--------
				Result	Result	Result	Result	---
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	18	<5	<5	5	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.01	0.01	0.02	----
Arsenic	7440-38-2	0.001	mg/L	<0.010	0.004	0.004	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0001	<0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	<0.010	0.004	0.003	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L	<0.010	0.006	0.005	<0.001	----
Lead	7439-92-1	0.001	mg/L	<0.010	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L	<0.010	<0.001	<0.001	0.001	----
Zinc	7440-66-6	0.005	mg/L	<0.050	0.046	0.038	0.250	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.01	0.02	0.04	----
Arsenic	7440-38-2	0.001	mg/L	<0.010	0.006	0.004	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0001	<0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	<0.010	0.004	0.004	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L	<0.010	0.008	0.008	0.001	----
Lead	7439-92-1	0.001	mg/L	<0.010	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L	<0.010	<0.001	<0.001	0.002	----
Zinc	7440-66-6	0.005	mg/L	<0.052	<0.005	0.019	0.099	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.32	1.79	1.55	0.17	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.6	2.9	2.5	2.2	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	0.9	4.7	4.0	2.4	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.15	0.37	0.32	0.06	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

TROP WATER PTY LTD

Page : 4 of 6
Work Order : ES2302187
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

ALS

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ADP1	NODH1	ADP2	----
				Sampling date / time	23-Jan-2023 12:05	23-Jan-2023 10:22	23-Jan-2023 11:36	23-Jan-2023 10:45	----
Compound	CAS Number	LOR	Unit		ES2302187-001	ES2302187-002	ES2302187-003	ES2302187-004	--------
					Result	Result	Result	Result	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	640	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	260	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	900	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	250	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	250	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	----
EP080: BTEXN									

TROP WATER PTY LTD

Page : 5 of 6
Work Order : ES2302187
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

ALS

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ADP1	NODH1	ADP2	----
				Sampling date / time	23-Jan-2023 12:05	23-Jan-2023 10:22	23-Jan-2023 11:36	23-Jan-2023 10:45	----
Compound	CAS Number	LOR	Unit		ES2302187-001	ES2302187-002	ES2302187-003	ES2302187-004	--------
					Result	Result	Result	Result	----
EP080: BTEXN - Continued									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		32.6	25.8	23.6	Not Determined	----
2-Chlorophenol-D4	93951-73-6	1.0	%		60.0	43.3	45.2	59.1	----
2.4.6-Tribromophenol	118-79-6	1.0	%		59.4	32.4	39.8	76.1	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		77.5	71.0	66.3	77.4	----
Anthracene-d10	1719-06-8	1.0	%		81.3	69.9	68.2	79.7	----
4-Terphenyl-d14	1718-51-0	1.0	%		83.3	70.5	67.5	80.9	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		85.4	84.6	107	112	----
Toluene-D8	2037-26-5	2	%		93.5	95.9	121	123	----
4-Bromofluorobenzene	460-00-4	2	%		96.8	96.8	120	118	----

Page	: 6 of 6
Work Order	: ES2302187
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: ES2302141	Page	: 1 of 2
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: GODFRED DUODU	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: CIPS SEWERAGE TREATMENT OPERATIONAL VERIFICATION	Date Samples Received	: 24-Jan-2023 08:30
Order number	: ----	Date Analysis Commenced	: 25-Jan-2023
C-O-C number	: ----	Issue Date	: 01-Feb-2023 10:42
Sampler	: GODFRED DUODU, Quentin Vander-Mower		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

Page	:	2 of 2
Work Order	:	ES2302141
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS SEWERAGE TREATMENT OPERATIONAL VERIFICATION

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	WWTP	----	----	----	----
			Sampling date / time	23-Jan-2023 11:03	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2302141-001	--------	--------	--------	--------
				Result	---	---	---	---
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	14	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	22	----	----	----	----

TROP WATER PTY LTD

NORTHERN TERRITORY GOVERNMENT Department of Industry, Tourism and Trade

Certificate of Analysis

Project No: **D230242 Final Report**
Report Number: **97889** *Date Issued:* **02/02/2023**

Water Microbiology Darwin
BVL Building, Berrimah Farm
29 Makagon Road, BERRIMAH, NT 0828
p: +61 8 8999 2347
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e: WaterLabsDarwin.ITT@nt.gov.au
w: https://industry.nt.gov.au/

NATA Accredited Laboratory
Accreditation Number 15606
Accredited for compliance with ISO/IEC17025 - Testing
This document shall not be reproduced except in full.

Customer **Trop Water Pty Ltd**
Address: **12/43 Berrimah Road Berrimah NT 0828**

Project Title: **CIPS-WWTP**
Attention: **Godfred Duodo**

Date Received: **23/01/2023**
Date Completed: **25/01/2023**

Number of Samples Received: **1**
Number of Samples Tested: **1**

The sample(s) referred to in this report were analysed by the following method(s):

Analyte	*Method Reference*	*Accreditation Status*	*Analyte*	*Method Reference*	*Accreditation Status*
E. coli (MPN)	AS 4276.21	NATA Accredited			

Lab Number	Sampling Point*	Customer Reference*	Free Cl (mg/L)*	Total Cl (mg/L)*	Sample Collection Temp (°C)*	Temp on Arrival (°C) #	Type of Sample
D230242-01	WWTP	-	0.04	0.05	33.02	21	Water

*Based on information supplied by customer ; # Reported arrival temperature reflects the approximate temperature of the group of samples when received by the laboratory. This measurement does not fall within the scope of the Laboratory's NATA Accreditation.

Holding Time

Max Holding Time is the maximum time permitted between sample collection and commencement of analysis. Reference: AS 2031.

^ indicates the sample has exceeded the maximum holding time permitted for the analysis. Affected results must be considered indicative only.

**Sample collection dates and times are reported as supplied by the customer and reported holding times are calculated from this information. While all due care is taken during transcription, the accuracy of this information is not guaranteed by the laboratory.

		E. coli Max Holding Time: 24 hrs	
Lab Number	Sample Collected**	Date of Analysis	Analysed within**
D230242-01	23/01/2023 11:03am	23/01/2023 2:00pm	2h 57m

Results of Analysis

	E. coli MPN/100mL
D230242-01 WWTP	>2420

The results in this report were authorised by:

Stephen Poole - Laboratory Manager

MPN = Most Probable Number. **Measurement Uncertainty** (MU) should be considered when assessing quantitative results. Contact the labora

Dates are reported in the format dd/mm/yyyy.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: ES2306543	Page	: 1 of 12
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: * ADMIN	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 8981 8889	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 01-Mar-2023 08:30
Order number	: ----	Date Analysis Commenced	: 02-Mar-2023
C-O-C number	: ----	Issue Date	: 08-Mar-2023 17:46
Sampler	: GODFRED DUODU, QUENTIN VANDA-MOWER		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 9		
No. of samples analysed	: 9		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EG020: LORs have been raised for some samples due to matrix interference (High sample salinity)
- Poor precision was obtained for Total P on samples ES2306543-9 due to sample heterogeneity on sample and confirmed by rediget.
- EK061G: LOR raised for TKN due to sample matrix
- EP075(SIM): LOR raised due to the high amount of moisture present.

TROP WATER Pty Ltd

Page : 3 of 12
Work Order : ES2306543
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

ALS

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SODH2	----	----	----	----
			Sampling date / time	27-Feb-2023 09:56	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2306543-009	--------	--------	--------	--------
				Result	---	---	---	---
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	50.7	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	10800	----	----	----	----
Cobalt	7440-48-4	2	mg/kg	5	----	----	----	----
Arsenic	7440-38-2	5	mg/kg	10	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	26	----	----	----	----
Copper	7440-50-8	5	mg/kg	6	----	----	----	----
Lead	7439-92-1	5	mg/kg	9	----	----	----	----
Nickel	7440-02-0	2	mg/kg	7	----	----	----	----
Zinc	7440-66-6	5	mg/kg	21	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	0.4	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	40	----	----	----	----
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	40	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	40	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.8	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.8	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.8	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.8	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.8	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.8	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.8	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.8	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.8	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.8	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.8	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.8	----	----	----	----

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SODH2	----	----	----	----
			Sampling date / time	27-Feb-2023 09:56	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2306543-009	--------	--------	--------	--------
				Result	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.8	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.8	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.8	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.8	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	1.0	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.9	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								

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Client : TROPICAL WATER NORTHERN TERRITORY
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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SODH2	----	----	----	----
				Sampling date / time	27-Feb-2023 09:56	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2306543-009	--------	--------	--------	--------
					Result	---	---	---	---
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
Phenol-d6	13127-88-3	0.5	%		87.1	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		90.4	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		55.6	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		88.4	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		87.4	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		91.0	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		73.4	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		78.0	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		83.1	----	----	----	----

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SODH1	ASP1	NODH1	ADP2	ILCP
			Sampling date / time	27-Feb-2023 11:00	27-Feb-2023 11:37	27-Feb-2023 12:10	27-Feb-2023 12:54	27-Feb-2023 12:44
Compound	CAS Number	LOR	Unit	ES2306543-001	ES2306543-002	ES2306543-003	ES2306543-004	ES2306543-005
				Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	14	<5	<5	6	<5
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.09	<0.01	0.14	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	0.100	0.030	0.120	0.081	0.040
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.74	<0.01	0.23	0.03	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	0.001	0.001	<0.001	0.002	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	0.025	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	0.034	<0.005	0.041	0.030	<0.005
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.12	0.29	0.23	0.06	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.3	1.3	1.0	1.4	1.4
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	0.4	1.6	1.2	1.5	1.4
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.04	0.12	0.06	0.04	0.04
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

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Project : CIPS WDL

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ASP1	NODH1	ADP2	ILCP
				Sampling date / time	27-Feb-2023 11:00	27-Feb-2023 11:37	27-Feb-2023 12:10	27-Feb-2023 12:54	27-Feb-2023 12:44
Compound	CAS Number	LOR	Unit		ES2306543-001	ES2306543-002	ES2306543-003	ES2306543-004	ES2306543-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ASP1	NODH1	ADP2	ILCP
				Sampling date / time	27-Feb-2023 11:00	27-Feb-2023 11:37	27-Feb-2023 12:10	27-Feb-2023 12:54	27-Feb-2023 12:44
Compound	CAS Number	LOR	Unit		ES2306543-001	ES2306543-002	ES2306543-003	ES2306543-004	ES2306543-005
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		33.1	25.6	26.5	25.0	24.5
2-Chlorophenol-D4	93951-73-6	1.0	%		66.4	48.3	53.8	49.6	46.5
2.4.6-Tribromophenol	118-79-6	1.0	%		78.8	48.8	63.8	56.9	55.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		69.0	61.4	62.0	54.6	56.8
Anthracene-d10	1719-06-8	1.0	%		68.4	55.0	70.4	54.0	68.9
4-Terphenyl-d14	1718-51-0	1.0	%		90.5	73.9	73.6	69.4	74.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		103	101	105	98.6	105
Toluene-D8	2037-26-5	2	%		108	106	104	97.1	103
4-Bromofluorobenzene	460-00-4	2	%		114	110	105	101	104

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ISCP	SODH3	SODH4	----	----
			Sampling date / time	27-Feb-2023 12:32	27-Feb-2023 08:44	27-Feb-2023 08:31	----	----
Compound	CAS Number	LOR	Unit	ES2306543-006	ES2306543-007	ES2306543-008	--------	--------
				Result	Result	Result	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	6	6	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.10	<0.10	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0010	<0.0010	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Zinc	7440-66-6	0.005	mg/L	0.115	<0.050	<0.050	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.03	0.43	0.38	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0010	<0.0010	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.010	<0.010	----	----
Zinc	7440-66-6	0.005	mg/L	0.082	<0.052	<0.052	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.31	0.03	0.02	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.7	<0.5	0.5	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	2.0	<0.5	0.5	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.03	0.08	0.11	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ISCP	SODH3	SODH4	----	----
				Sampling date / time	27-Feb-2023 12:32	27-Feb-2023 08:44	27-Feb-2023 08:31	----	----
Compound	CAS Number	LOR	Unit		ES2306543-006	ES2306543-007	ES2306543-008	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L		380	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		380	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L		330	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		330	<100	<100	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	----	----
EP080: BTEXN									

Page	: 11 of 12
Work Order	: ES2306543
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ISCP	SODH3	SODH4	----	----
				Sampling date / time	27-Feb-2023 12:32	27-Feb-2023 08:44	27-Feb-2023 08:31	----	----
Compound	CAS Number	LOR	Unit		ES2306543-006	ES2306543-007	ES2306543-008	--------	--------
					Result	Result	Result	---	---
EP080: BTEXN - Continued									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		23.2	33.7	33.0	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		46.2	62.1	59.5	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		55.7	73.0	65.2	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		52.4	70.2	65.6	----	----
Anthracene-d10	1719-06-8	1.0	%		52.6	81.3	60.1	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		67.2	85.7	80.3	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		108	104	112	----	----
Toluene-D8	2037-26-5	2	%		102	97.0	102	----	----
4-Bromofluorobenzene	460-00-4	2	%		106	102	109	----	----

Page	:	12 of 12
Work Order	:	ES2306543
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS WDL

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

TROP WATER PTY LTD

NORTHERN TERRITORY GOVERNMENT

Department of Industry, Tourism and Trade

Certificate of Analysis

Project No: **D230571 Final Report**

Report Number: **98968** *Date Issued:* **03/03/2023**

Water Microbiology Darwin
BVL Building, Berrimah Farm
29 Makagon Road, BERRIMAH, NT 0828
p: +61 8 8999 2347
f: +61 8 8923 9566
e: WaterLabsDarwin.ITT@nt.gov.au
w: https://industry.nt.gov.au/

NATA Accredited Laboratory
Accreditation Number 15606
Accredited for compliance with ISO/IEC17025 - Testing

Customer **Trop Water Pty Ltd**

Address: **12/43 Berrimah Road**
Berrimah NT 0828

Project Title: **CIPS-WWTP**

Attention: **Godfred Duodo**

Date Received: **27/02/2023**

Date Completed: **01/03/2023**

Number of Samples Received: **1**

Number of Samples Tested: **1**

The sample(s) referred to in this report were analysed by the following method(s):

Analyte	*Method Reference*	*Accreditation Status*	*Analyte*	*Method Reference*	*Accreditation Status*
E. coli (MPN)	AS 4276.21	NATA Accredited			

Lab Number	Sampling Point*	Customer Reference*	Free Cl (mg/L)*	Total Cl (mg/L)*	Sample Collection Temp (°C)*	Temp on Arrival (°C) #	Type of Sample
D230571-01	WWTP	-	Not supplied	Not supplied	Not supplied	22	Water

*Based on information supplied by customer ; # Reported arrival temperature reflects the approximate temperature of the group of samples when received by the laboratory. This measurement does not fall within the scope of the Laboratory's NATA Accreditation.

TROP WATER Pty Ltd

Customer: Trop Water Pty Ltd *Project Title:* CIPS-WWTP *Project No:* D230571 *Report Number:* 98968 *Date Issued:* 03-Mar-2023

Holding Time

Max Holding Time is the maximum time permitted between sample collection and commencement of analysis. Reference: AS 2031.

^ indicates the sample has exceeded the maximum holding time permitted for the analysis. Affected results must be considered indicative only.

**Sample collection dates and times are reported as supplied by the customer and reported holding times are calculated from this information. While all due care is taken during transcription, the accuracy of this information is not guaranteed by the laboratory.

		E. coli Max Holding Time: 24 hrs	
Lab Number	Sample Collected**	Date of Analysis	Analysed within**
D230571-01	27/02/2023 1:16pm	27/02/2023 3:25pm	2h 09m

Results of Analysis

	E. coli MPN/100mL
D230571-01 WWTP	86

The results in this report were authorised by:

Stephen Poole - Laboratory Manager

MPN = Most Probable Number. **Measurement Uncertainty** (MU) should be considered when assessing quantitative results. Contact the labora

Dates are reported in the format dd/mm/yyyy.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: ES2309115	Page	: 1 of 6
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: GODFRED DUODU	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 22-Mar-2023 13:30
Order number	: ----	Date Analysis Commenced	: 24-Mar-2023
C-O-C number	: ----	Issue Date	: 29-Mar-2023 15:00
Sampler	: GODFRED DUODO, QUENTIN VANDA-MOWER		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

Page	: 2 of 6
Work Order	: ES2309115
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.

Page	: 3 of 6
Work Order	: ES2309115
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ADP1	NODH1	ADP2	----
				Sampling date / time	20-Mar-2023 12:03	20-Mar-2023 10:28	20-Mar-2023 11:01	20-Mar-2023 11:23	----
Compound	CAS Number	LOR	Unit		ES2309115-001	ES2309115-002	ES2309115-003	ES2309115-004	----------
					Result	Result	Result	Result	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		<5	<5	<5	5	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	0.05	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L		<0.001	0.001	0.001	0.001	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Zinc	7440-66-6	0.005	mg/L		0.007	<0.005	<0.005	0.044	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	0.07	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	0.0001	<0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	0.006	0.101	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		0.06	0.04	0.09	0.05	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		0.3	0.4	0.3	0.9	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		0.4	0.4	0.4	1.0	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.01	0.07	0.05	0.04	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									

Page : 4 of 6
Work Order : ES2309115
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ADP1	NODH1	ADP2	----
				Sampling date / time	20-Mar-2023 12:03	20-Mar-2023 10:28	20-Mar-2023 11:01	20-Mar-2023 11:23	----
Compound	CAS Number	LOR	Unit		ES2309115-001	ES2309115-002	ES2309115-003	ES2309115-004	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		30	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		30	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		30	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	----
EP080: BTEXN									

Page : 5 of 6
Work Order : ES2309115
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ADP1	NODH1	ADP2	----
				Sampling date / time	20-Mar-2023 12:03	20-Mar-2023 10:28	20-Mar-2023 11:01	20-Mar-2023 11:23	----
Compound	CAS Number	LOR	Unit		ES2309115-001	ES2309115-002	ES2309115-003	ES2309115-004	-------
					Result	Result	Result	Result	----
EP080: BTEXN - Continued									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		20.0	20.7	21.5	21.8	----
2-Chlorophenol-D4	93951-73-6	1.0	%		43.4	42.7	48.1	48.8	----
2.4.6-Tribromophenol	118-79-6	1.0	%		56.8	55.4	58.2	68.9	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		63.1	55.2	63.7	64.7	----
Anthracene-d10	1719-06-8	1.0	%		64.1	70.7	71.4	78.5	----
4-Terphenyl-d14	1718-51-0	1.0	%		73.5	74.2	73.8	79.6	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		116	108	120	120	----
Toluene-D8	2037-26-5	2	%		110	96.2	109	108	----
4-Bromofluorobenzene	460-00-4	2	%		106	93.2	105	102	----

Page	: 6 of 6
Work Order	: ES2309115
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: ES2309721	Page	: 1 of 2
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: GODFRED DUODU	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: CIPS SEWERAGE TREATMENT OPERATIONAL VERIFICATION	Date Samples Received	: 24-Mar-2023 15:30
Order number	: ----	Date Analysis Commenced	: 24-Mar-2023
C-O-C number	: ----	Issue Date	: 30-Mar-2023 14:25
Sampler	: GODFRED DUODO, QUENTIN VANDA-MOWER		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

Page	:	2 of 2
Work Order	:	ES2309721
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS SEWERAGE TREATMENT OPERATIONAL VERIFICATION

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)			Sample ID	**WWTP**	----	----	----	----
			Sampling date / time	23-Mar-2023 10:23	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**ES2309721-001**	--------	--------	--------	--------
				Result	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**14**	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	**69**	----	----	----	----

TROP WATER PTY LTD

NORTHERN TERRITORY GOVERNMENT Department of Industry, Tourism and Trade

Certificate of Analysis

Project No: **D230842 Final Report**
Report Number: **99855** *Date Issued:* **28/03/2023**

Water Microbiology Darwin
BVL Building, Berrimah Farm
29 Makagon Road, BERRIMAH, NT 0828
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w: https://industry.nt.gov.au/

NATA Accredited Laboratory
Accreditation Number 15104
Accredited for compliance with ISO/IEC17025 - Testing

Customer **Trop Water Pty Ltd**
Address: **12/43 Berrimah Road Berrimah NT 0828**

Project Title: **CIPS - WWTP**
Attention: **Godfred Duodo**

Date Received: **23/03/2023**
Date Completed: **24/03/2023**

Number of Samples Received: **1**
Number of Samples Tested: **1**

The sample(s) referred to in this report were analysed by the following method(s):

Analyte	*Method Reference*	*Accreditation Status*	*Analyte*	*Method Reference*	*Accreditation Status*
E. coli (MPN)	AS 4276.21	NATA Accredited			

Lab Number	Sampling Point*	Customer Reference*	Free Cl (mg/L)*	Total Cl (mg/L)*	Sample Collection Temp (°C)*	Temp on Arrival (°C) #	Type of Sample
D230842-01	WWTP	-	0.02	0.03	29.53	24	Water

*Based on information supplied by customer ; # Reported arrival temperature reflects the approximate temperature of the group of samples when received by the laboratory. This measurement does not fall within the scope of the Laboratory's NATA Accreditation.

Holding Time

Max Holding Time is the maximum time permitted between sample collection and commencement of analysis. Reference: AS 2031.

^ indicates the sample has exceeded the maximum holding time permitted for the analysis. Affected results must be considered indicative only.

**Sample collection dates and times are reported as supplied by the customer and reported holding times are calculated from this information. While all due care is taken during transcription, the accuracy of this information is not guaranteed by the laboratory.

		E. coli Max Holding Time: 24 hrs	
Lab Number	Sample Collected**	Date of Analysis	Analysed within**
D230842-01	23/03/2023 10:23am	23/03/2023 1:00pm	2h 37m

Results of Analysis

	E. coli MPN/100mL
D230842-01 WWTP	437

The results in this report were authorised by:

Stephen Poole - Laboratory Manager

MPN = Most Probable Number. **Measurement Uncertainty** (MU) should be considered when assessing quantitative results. Contact the labora **Dates** are reported in the format dd/mm/yyyy.

CERTIFICATE OF ANALYSIS

Work Order	: ES2312485	Page	: 1 of 7
Amendment	: 1		
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: GODFRED DUODU	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 18-Apr-2023 08:30
Order number	: ----	Date Analysis Commenced	: 18-Apr-2023
C-O-C number	: ----	Issue Date	: 28-Apr-2023 12:15
Sampler	: LABIN MAGAR, Quentin Vander-Mower		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

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- Analytical Results
- Surrogate Control Limits

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Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

Page	:	2 of 7
Work Order	:	ES2312485 Amendment 1
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS WDL

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EG093: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- Amendment (28/04/2023):This report has been amended to report dissolved Lead on sample SODH1.
- EG093: Samples containing high levels of sulfate may precipitate barium under the acidic conditions of this method and may therefore bias results low.

TROP WATER Pty Ltd

Page : 3 of 7
Work Order : ES2312485 Amendment 1
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SODH1	NODH1	ADP2	----	----
			Sampling date / time	17-Apr-2023 10:08	17-Apr-2023 10:46	17-Apr-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2312485-001	ES2312485-002	ES2312485-003	--------	--------
				Result	Result	Result	---	---
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	<5	7	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	0.02	0.04	----	----
Arsenic	7440-38-2	0.001	mg/L	----	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	----	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	----	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	----	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	----	0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	----	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	----	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	----	0.078	0.014	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	0.09	0.02	----	----
Arsenic	7440-38-2	0.001	mg/L	----	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	----	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	----	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	----	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	----	0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	----	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	----	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	----	0.081	0.007	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.005	µg/L	<0.005	----	----	----	----
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	<0.0001	----	----
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.005	µg/L	<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	<0.0001	----	----
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS								
Aluminium	7429-90-5	5	µg/L	70	----	----	----	----
Arsenic	7440-38-2	0.5	µg/L	0.7	----	----	----	----
Cadmium	7440-43-9	0.2	µg/L	<0.2	----	----	----	----
Chromium	7440-47-3	0.5	µg/L	<0.5	----	----	----	----
Cobalt	7440-48-4	0.2	µg/L	<0.2	----	----	----	----

TROP WATER Pty Ltd

Page : 4 of 7
Work Order : ES2312485 Amendment 1
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	NODH1	ADP2	----	----
				Sampling date / time	17-Apr-2023 10:08	17-Apr-2023 10:46	17-Apr-2023 11:00	----	----
Compound	CAS Number	LOR	Unit		ES2312485-001	ES2312485-002	ES2312485-003	--------	--------
					Result	Result	Result	----	----
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS - Continued									
Copper	7440-50-8	1	µg/L		1	----	----	----	----
Lead	7439-92-1	0.2	µg/L		<0.2	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		<0.5	----	----	----	----
Zinc	7440-66-6	5	µg/L		8	----	----	----	----
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		67	----	----	----	----
Arsenic	7440-38-2	0.5	µg/L		0.7	----	----	----	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	----	----	----	----
Chromium	7440-47-3	0.5	µg/L		<0.5	----	----	----	----
Cobalt	7440-48-4	0.2	µg/L		<0.2	----	----	----	----
Copper	7440-50-8	1	µg/L		<1	----	----	----	----
Lead	7439-92-1	0.2	µg/L		<0.2	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		<0.5	----	----	----	----
Zinc	7440-66-6	5	µg/L		10	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		1.25	0.48	0.18	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		0.3	0.6	3.1	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		1.6	1.1	3.3	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.06	0.04	0.04	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Page	: 5 of 7
Work Order	: ES2312485 Amendment 1
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	NODH1	ADP2	----	----
				Sampling date / time	17-Apr-2023 10:08	17-Apr-2023 10:46	17-Apr-2023 11:00	----	----
Compound	CAS Number	LOR	Unit		ES2312485-001	ES2312485-002	ES2312485-003	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	340	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	340	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	340	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	340	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		28.5	25.4	23.7	----	----

Page	: 6 of 7
Work Order	: ES2312485 Amendment 1
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SODH1	NODH1	ADP2	----	----
			Sampling date / time	17-Apr-2023 10:08	17-Apr-2023 10:46	17-Apr-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2312485-001	ES2312485-002	ES2312485-003	--------	--------
				Result	Result	Result	---	---
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
2-Chlorophenol-D4	93951-73-6	1.0	%	51.9	51.2	45.2	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	59.8	59.0	51.4	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	59.4	57.1	52.7	----	----
Anthracene-d10	1719-06-8	1.0	%	57.5	51.2	50.3	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	79.5	73.1	71.3	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	107	110	106	----	----
Toluene-D8	2037-26-5	2	%	106	108	108	----	----
4-Bromofluorobenzene	460-00-4	2	%	93.8	97.4	97.0	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

CERTIFICATE OF ANALYSIS

Work Order	: **ES2315295**	Page	: 1 of 12
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: GODFRED DUODU	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 10-May-2023 08:30
Order number	: ----	Date Analysis Commenced	: 11-May-2023
C-O-C number	: ----	Issue Date	: 17-May-2023 18:48
Sampler	: ARNOLD CAUNAN, GODFRED DUODU, Quentin Vander-Mower		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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- Analytical Results
- Surrogate Control Limits

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Signatories

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Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

Page	: 2 of 12
Work Order	: ES2315295
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP075(SIM): LOR for samples raised due to high amount of moisture content.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- EG020: LORs have been raised for some samples due to matrix interference (High sample salinity)

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Work Order : ES2315295
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NODH2	SODH2	----	----	----
			Sampling date / time	09-May-2023 10:50	09-May-2023 10:10	----	----	----
Compound	CAS Number	LOR	Unit	ES2315295-010	ES2315295-011	--------	--------	--------
				Result	Result	---	---	---
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	---	1.0	%	51.6	62.5	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	14700	9860	----	----	----
Cobalt	7440-48-4	2	mg/kg	6	4	----	----	----
Arsenic	7440-38-2	5	mg/kg	14	10	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	34	26	----	----	----
Copper	7440-50-8	5	mg/kg	8	6	----	----	----
Lead	7439-92-1	5	mg/kg	11	8	----	----	----
Nickel	7440-02-0	2	mg/kg	10	7	----	----	----
Zinc	7440-66-6	5	mg/kg	22	9	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	---	0.1	mg/kg	0.8	0.3	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	---	20	mg/kg	860	1540	----	----	----
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	---	20	mg/kg	860	1540	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	---	2	mg/kg	419	419	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.8	<0.8	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.8	<0.8	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.8	<0.8	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.8	<0.8	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.8	<0.8	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.8	<0.8	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.8	<0.8	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.8	<0.8	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.8	<0.8	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.8	<0.8	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.8	<0.8	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.8	<0.8	----	----	----

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NODH2	SODH2	----	----	----
			Sampling date / time	09-May-2023 10:50	09-May-2023 10:10	----	----	----
Compound	CAS Number	LOR	Unit	ES2315295-010	ES2315295-011	--------	--------	--------
				Result	Result	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.8	<0.8	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.8	<0.8	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.8	<0.8	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.8	<0.8	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	---	0.5	mg/kg	1.0	1.0	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	---	0.5	mg/kg	1.9	1.9	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	---	10	mg/kg	<10	<10	----	----	----
C10 - C14 Fraction	---	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	---	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	---	100	mg/kg	<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	---	50	mg/kg	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	----	----	----
>C10 - C16 Fraction	---	50	mg/kg	<50	<50	----	----	----
>C16 - C34 Fraction	---	100	mg/kg	<100	<100	----	----	----
>C34 - C40 Fraction	---	100	mg/kg	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	50	mg/kg	<50	<50	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of BTEX	---	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Total Xylenes	---	0.5	mg/kg	<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NODH2	SODH2	----	----	----
			Sampling date / time	09-May-2023 10:50	09-May-2023 10:10	----	----	----
Compound	CAS Number	LOR	Unit	ES2315295-010	ES2315295-011	--------	--------	--------
				Result	Result	---	---	---
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
Phenol-d6	13127-88-3	0.5	%	67.9	64.2	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	73.6	67.7	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	54.8	54.7	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	89.8	83.2	----	----	----
Anthracene-d10	1719-06-8	0.5	%	89.7	86.9	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	86.7	82.5	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	110	77.6	----	----	----
Toluene-D8	2037-26-5	0.2	%	76.8	71.5	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	100	78.0	----	----	----

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Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	SODH1	ADP1	NODH1	ILCP	ISCP
				Sampling date / time	09-May-2023 11:08	09-May-2023 11:56	09-May-2023 12:32	09-May-2023 13:12	09-May-2023 12:57
					ES2315295-001	ES2315295-002	ES2315295-003	ES2315295-004	ES2315295-005
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	---	5	mg/L		10	<5	6	14	6
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.10	<0.01	<0.01	<0.01	0.04
Arsenic	7440-38-2	0.001	mg/L		<0.010	0.002	0.004	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0010	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.010	0.004	0.004	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L		<0.010	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.010	0.006	0.007	<0.001	0.002
Lead	7439-92-1	0.001	mg/L		<0.010	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.010	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.050	<0.005	0.015	<0.005	0.011
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.10	<0.01	0.02	<0.01	0.05
Arsenic	7440-38-2	0.001	mg/L		<0.010	0.003	0.003	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0010	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.010	0.004	0.004	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.010	0.007	0.007	<0.001	0.003
Cobalt	7440-48-4	0.001	mg/L		<0.010	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.010	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L		<0.010	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.050	0.013	0.022	<0.005	0.017
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	---	0.01	mg/L		0.66	0.41	0.43	<0.01	0.11
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	---	0.1	mg/L		0.4	1.9	2.2	1.0	5.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	---	0.1	mg/L		1.1	2.3	2.6	1.0	5.6
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	---	0.01	mg/L		0.10	0.28	0.30	0.04	0.04

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Work Order	:	ES2315295
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ADP1	NODH1	ILCP	ISCP
				Sampling date / time	09-May-2023 11:08	09-May-2023 11:56	09-May-2023 12:32	09-May-2023 13:12	09-May-2023 12:57
Compound	CAS Number	LOR	Unit		ES2315295-001	ES2315295-002	ES2315295-003	ES2315295-004	ES2315295-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	---	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	---	50	µg/L		<50	<50	<50	70	<50
C15 - C28 Fraction	---	100	µg/L		<100	<100	<100	2160	210
C29 - C36 Fraction	---	50	µg/L		<50	<50	<50	60	<50
^ C10 - C36 Fraction (sum)	---	50	µg/L		<50	<50	<50	2290	210
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	---	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	---	100	µg/L		<100	<100	<100	2180	200
>C34 - C40 Fraction	---	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	---	100	µg/L		<100	<100	<100	2180	200
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	100	µg/L		<100	<100	<100	<100	<100

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Work Order	: ES2315295
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ADP1	NODH1	ILCP	ISCP
				Sampling date / time	09-May-2023 11:08	09-May-2023 11:56	09-May-2023 12:32	09-May-2023 13:12	09-May-2023 12:57
Compound	CAS Number	LOR	Unit		ES2315295-001	ES2315295-002	ES2315295-003	ES2315295-004	ES2315295-005
					Result	Result	Result	Result	Result
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		18.1	19.8	19.3	18.3	21.5
2-Chlorophenol-D4	93951-73-6	1.0	%		33.6	34.6	33.0	31.0	32.5
2.4.6-Tribromophenol	118-79-6	1.0	%		45.2	38.4	44.5	30.7	40.7
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		77.0	81.2	72.4	77.6	80.5
Anthracene-d10	1719-06-8	1.0	%		74.8	87.1	71.9	77.0	67.5
4-Terphenyl-d14	1718-51-0	1.0	%		95.0	92.3	90.2	92.0	92.0
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		90.7	85.9	93.6	93.4	98.8
Toluene-D8	2037-26-5	2	%		80.3	83.8	87.3	82.3	89.0
4-Bromofluorobenzene	460-00-4	2	%		79.5	96.4	97.6	94.2	94.8

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Work Order : ES2315295
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SODH3	SODH4	NODH3	NODH4	----
			Sampling date / time	09-May-2023 10:02	09-May-2023 09:42	09-May-2023 10:45	09-May-2023 10:31	----
Compound	CAS Number	LOR	Unit	ES2315295-006	ES2315295-007	ES2315295-008	ES2315295-009	-------
				Result	Result	Result	Result	---
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	---	5	mg/L	9	8	11	8	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.10	<0.10	<0.10	----
Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----
Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Copper	7440-50-8	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Nickel	7440-02-0	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Zinc	7440-66-6	0.005	mg/L	<0.050	<0.050	<0.050	<0.050	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.10	<0.10	<0.10	----
Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----
Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Copper	7440-50-8	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Nickel	7440-02-0	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Zinc	7440-66-6	0.005	mg/L	<0.050	<0.050	<0.050	<0.050	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	---	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.2	0.2	0.1	0.2	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	---	0.1	mg/L	0.2	0.2	0.1	0.2	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	---	0.01	mg/L	0.03	0.05	0.05	0.03	----

TROP WATER PTY LTD

Page : 10 of 12
Work Order : ES2315295
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH3	SODH4	NODH3	NODH4	----
				Sampling date / time	09-May-2023 10:02	09-May-2023 09:42	09-May-2023 10:45	09-May-2023 10:31	----
Compound	CAS Number	LOR	Unit		ES2315295-006	ES2315295-007	ES2315295-008	ES2315295-009	-------
					Result	Result	Result	Result	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	---	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	20	µg/L		<20	<20	<20	<20	----
C10 - C14 Fraction	---	50	µg/L		<50	<50	<50	<50	----
C15 - C28 Fraction	---	100	µg/L		<100	<100	<100	<100	----
C29 - C36 Fraction	---	50	µg/L		<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	---	50	µg/L		<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	----
>C10 - C16 Fraction	---	100	µg/L		<100	<100	<100	<100	----
>C16 - C34 Fraction	---	100	µg/L		<100	<100	<100	<100	----
>C34 - C40 Fraction	---	100	µg/L		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	---	100	µg/L		<100	<100	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	100	µg/L		<100	<100	<100	<100	----

TROP WATER PTY LTD

Page	: 11 of 12
Work Order	: ES2315295
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH3	SODH4	NODH3	NODH4	----
				Sampling date / time	09-May-2023 10:02	09-May-2023 09:42	09-May-2023 10:45	09-May-2023 10:31	----
Compound	CAS Number	LOR	Unit		ES2315295-006	ES2315295-007	ES2315295-008	ES2315295-009	-------
					Result	Result	Result	Result	---
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		20.1	21.1	22.9	21.4	----
2-Chlorophenol-D4	93951-73-6	1.0	%		35.6	35.8	37.3	39.0	----
2.4.6-Tribromophenol	118-79-6	1.0	%		61.6	46.0	42.8	49.0	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		80.9	83.2	85.9	91.8	----
Anthracene-d10	1719-06-8	1.0	%		71.0	79.1	80.8	84.7	----
4-Terphenyl-d14	1718-51-0	1.0	%		82.5	95.3	89.4	91.8	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		91.2	89.4	86.1	85.8	----
Toluene-D8	2037-26-5	2	%		88.0	81.8	85.1	76.4	----
4-Bromofluorobenzene	460-00-4	2	%		79.1	76.5	82.9	81.1	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

CERTIFICATE OF ANALYSIS

Work Order	: ES2319865	Page	: 1 of 2
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: GODFRED DUODU	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: CIPS SEWERAGE TREATMENT OPERATIONAL VERIFICATION	Date Samples Received	: 16-Jun-2023 11:30
Order number	: ----	Date Analysis Commenced	: 17-Jun-2023
C-O-C number	: ----	Issue Date	: 22-Jun-2023 16:04
Sampler	: GODFRED DUODU		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

Page	: 2 of 2
Work Order	: ES2319865
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS SEWERAGE TREATMENT OPERATIONAL VERIFICATION

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	WWTP	----	----	----	----
			Sampling date / time	15-Jun-2023 10:37	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2319865-001	--------	--------	--------	--------
				Result	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	20	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	14	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: ES2323359	Page	: 1 of 6
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: * ADMIN	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 8981 8889	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 14-Jul-2023 08:30
Order number	: ----	Date Analysis Commenced	: 17-Jul-2023
C-O-C number	: ----	Issue Date	: 20-Jul-2023 17:38
Sampler	: GODFRED DUODU, LABIN MAGAR, VICTOR CALDERON		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EG035: Poor matrix spike recovery was obtained for Mercury on sample ES2322998 #2. Confirmed by re-analysis.
- EG020: It has been confirmed by re-digestion and re-analysis that total Zinc concentration is less than dissolved for sample ES2323359 - #003. For all other samples and analytes where dissolved is greater than total, the difference is within experimental variation of the methods.

TROP WATER Pty Ltd

Page : 3 of 6
Work Order : ES2323359
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH	ADP2	----	----
				Sampling date / time	13-Jul-2023 10:14	13-Jul-2023 10:41	13-Jul-2023 11:04	----	----
Compound	CAS Number	LOR	Unit		ES2323359-001	ES2323359-002	ES2323359-003	--------	--------
					Result	Result	Result	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		5	10	<5	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	0.02	----	----
Arsenic	7440-38-2	0.001	mg/L		0.003	0.003	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L		0.003	0.003	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		0.013	0.013	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	0.001	----	----
Zinc	7440-66-6	0.005	mg/L		0.006	0.007	0.059	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	0.02	----	----
Arsenic	7440-38-2	0.001	mg/L		0.003	0.003	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L		0.003	0.003	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		0.016	0.016	0.001	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	0.002	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	0.008	0.029	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		1.60	1.56	0.06	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		2.1	2.6	6.8	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		3.7	4.2	6.9	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.36	0.44	0.12	----	----

Page : 4 of 6
Work Order : ES2323359
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH	ADP2	----	----
				Sampling date / time	13-Jul-2023 10:14	13-Jul-2023 10:41	13-Jul-2023 11:04	----	----
Compound	CAS Number	LOR	Unit		ES2323359-001	ES2323359-002	ES2323359-003	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	140	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	310	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	450	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	300	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	300	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	----	----

Page	: 5 of 6
Work Order	: ES2323359
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH	ADP2	---	---
				Sampling date / time	13-Jul-2023 10:14	13-Jul-2023 10:41	13-Jul-2023 11:04	----	----
Compound	CAS Number	LOR	Unit		ES2323359-001	ES2323359-002	ES2323359-003	--------	--------
					Result	Result	Result	---	---
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		20.2	21.6	22.0	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		44.2	45.3	52.3	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		33.8	37.2	59.5	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		65.1	62.6	57.8	----	----
Anthracene-d10	1719-06-8	1.0	%		77.3	75.6	72.2	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		86.3	65.6	61.4	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		106	107	104	----	----
Toluene-D8	2037-26-5	2	%		93.6	95.8	96.0	----	----
4-Bromofluorobenzene	460-00-4	2	%		88.0	91.0	89.4	----	----

Page	:	6 of 6
Work Order	:	ES2323359
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS WDL

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

CERTIFICATE OF ANALYSIS

Work Order	: ES2325870	Page	: 1 of 12
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: GODFRED DUODU	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 04-Aug-2023 09:30
Order number	: ----	Date Analysis Commenced	: 07-Aug-2023
C-O-C number	: ----	Issue Date	: 10-Aug-2023 16:20
Sampler	: LABIN MAGAR, VICTOR CALDERON		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- EG020A: LORs have been raised for some samples due to matrix interference (High sample salinity)
- Poor spike recovery for Total P due to matrix interferences(confirmed by re-analysis).

TROP WATER PTY LTD

Page : 3 of 12
Work Order : ES2325870
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NODH2	SODH2	----	----	----
			Sampling date / time	03-Aug-2023 10:07	03-Aug-2023 09:46	----	----	----
Compound	CAS Number	LOR	Unit	ES2325870-010	ES2325870-011	-------	-------	-------
				Result	Result	---	---	---
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	56.0	45.6	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	10600	8890	----	----	----
Cobalt	7440-48-4	2	mg/kg	6	5	----	----	----
Arsenic	7440-38-2	5	mg/kg	9	7	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	28	24	----	----	----
Copper	7440-50-8	5	mg/kg	6	6	----	----	----
Lead	7439-92-1	5	mg/kg	6	6	----	----	----
Nickel	7440-02-0	2	mg/kg	8	7	----	----	----
Zinc	7440-66-6	5	mg/kg	33	19	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	1.0	0.3	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	840	570	----	----	----
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	840	570	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	348	312	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.8	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.8	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.8	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.8	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.8	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.8	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.8	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.8	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.8	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.8	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.8	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.8	<0.5	----	----	----

Page : 4 of 12
Work Order : ES2325870
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NODH2	SODH2	---	---	---
				Sampling date / time	03-Aug-2023 10:07	03-Aug-2023 09:46	---	---	---
Compound	CAS Number	LOR	Unit		ES2325870-010	ES2325870-011	-------	-------	-------
					Result	Result	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.8	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.8	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.8	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.8	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	---	0.5	mg/kg		1.0	0.6	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	---	0.5	mg/kg		1.9	1.2	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	10	mg/kg		<10	<10	----	----	----
C10 - C14 Fraction	---	50	mg/kg		<50	<50	----	----	----
C15 - C28 Fraction	---	100	mg/kg		<100	<100	----	----	----
C29 - C36 Fraction	---	100	mg/kg		<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	---	50	mg/kg		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	----	----
>C10 - C16 Fraction	---	50	mg/kg		<50	<50	----	----	----
>C16 - C34 Fraction	---	100	mg/kg		<100	<100	----	----	----
>C34 - C40 Fraction	---	100	mg/kg		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	---	50	mg/kg		<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	50	mg/kg		<50	<50	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of BTEX	---	0.2	mg/kg		<0.2	<0.2	----	----	----
^ Total Xylenes	---	0.5	mg/kg		<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									

TROP WATER PTY LTD

Page : 5 of 12
Work Order : ES2325870
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NODH2	SODH2	---	---	---
				Sampling date / time	03-Aug-2023 10:07	03-Aug-2023 09:46	---	---	---
Compound	CAS Number	LOR	Unit		ES2325870-010	ES2325870-011	-------	-------	-------
					Result	Result	---	---	---
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
Phenol-d6	13127-88-3	0.5	%		95.6	98.6	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		85.1	90.4	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		72.3	67.2	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		97.0	99.0	----	----	----
Anthracene-d10	1719-06-8	0.5	%		98.9	102	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		94.7	99.6	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		77.5	84.4	----	----	----
Toluene-D8	2037-26-5	0.2	%		76.0	93.1	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		92.5	102	----	----	----

Page : 6 of 12
Work Order : ES2325870
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ADP1	NODH1	ADP2	ILCP	ISCP
			Sampling date / time	03-Aug-2023 10:45	03-Aug-2023 11:05	03-Aug-2023 11:57	03-Aug-2023 11:44	03-Aug-2023 11:39
Compound	CAS Number	LOR	Unit	ES2325870-001	ES2325870-002	ES2325870-003	ES2325870-004	ES2325870-005
				Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	---	5	mg/L	9	7	<5	7	10
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.02	<0.01	0.02
Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	<0.001	0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	0.002	0.002	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	0.027	0.026	0.002	0.001	0.003
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.002	<0.001	0.001
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.012	<0.005	0.022
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.02	0.21	0.02	<0.01	0.03
Arsenic	7440-38-2	0.001	mg/L	0.003	0.004	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	0.002	0.003	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	0.033	0.036	0.002	0.002	0.003
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.002	<0.001	0.002
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	0.022	0.052	0.023	<0.005	0.025
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	---	0.01	mg/L	1.86	1.79	0.14	<0.01	0.23
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	---	0.1	mg/L	1.9	2.1	4.3	1.1	4.2
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	---	0.1	mg/L	3.8	3.9	4.4	1.1	4.4
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	---	0.01	mg/L	0.34	0.33	0.05	0.06	0.05

Page	: 7 of 12
Work Order	: ES2325870
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	ILCP	ISCP
				Sampling date / time	03-Aug-2023 10:45	03-Aug-2023 11:05	03-Aug-2023 11:57	03-Aug-2023 11:44	03-Aug-2023 11:39
Compound	CAS Number	LOR	Unit		ES2325870-001	ES2325870-002	ES2325870-003	ES2325870-004	ES2325870-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	370	1220	260
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	370	1220	260
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	320	1270	220
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	320	1270	220
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100

TROP WATER Pty Ltd

Page : 8 of 12
Work Order : ES2325870
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	ILCP	ISCP
				Sampling date / time	03-Aug-2023 10:45	03-Aug-2023 11:05	03-Aug-2023 11:57	03-Aug-2023 11:44	03-Aug-2023 11:39
Compound	CAS Number	LOR	Unit		ES2325870-001	ES2325870-002	ES2325870-003	ES2325870-004	ES2325870-005
					Result	Result	Result	Result	Result
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	---	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	---	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		24.8	18.8	29.0	34.8	34.9
2-Chlorophenol-D4	93951-73-6	1.0	%		43.2	44.5	63.8	43.2	60.6
2.4.6-Tribromophenol	118-79-6	1.0	%		44.5	30.9	68.1	28.2	44.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		86.8	71.0	90.4	76.8	63.9
Anthracene-d10	1719-06-8	1.0	%		77.4	67.2	83.5	72.7	63.4
4-Terphenyl-d14	1718-51-0	1.0	%		94.0	90.9	92.2	97.0	84.1
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		81.3	78.2	77.2	84.6	78.0
Toluene-D8	2037-26-5	2	%		95.0	106	106	101	87.2
4-Bromofluorobenzene	460-00-4	2	%		129	125	108	129	129

TROP WATER Pty Ltd

Page : 9 of 12
Work Order : ES2325870
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SODH3	SODH4	NODH3	NODH4	----
			Sampling date / time	03-Aug-2023 09:36	03-Aug-2023 09:42	03-Aug-2023 10:03	03-Aug-2023 09:58	----
Compound	CAS Number	LOR	Unit	ES2325870-006	ES2325870-007	ES2325870-008	ES2325870-009	--------
				Result	Result	Result	Result	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	<5	<5	<5	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.10	<0.10	<0.10	----
Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----
Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Copper	7440-50-8	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Nickel	7440-02-0	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Zinc	7440-66-6	0.005	mg/L	<0.050	<0.050	<0.050	<0.050	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.10	<0.10	<0.10	----
Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----
Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Copper	7440-50-8	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Nickel	7440-02-0	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	<0.010	<0.010	----
Zinc	7440-66-6	0.005	mg/L	<0.050	<0.050	<0.050	<0.050	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	<0.01	0.01	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.2	0.2	0.1	0.1	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	0.2	0.2	0.1	0.1	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.05	0.06	0.06	0.06	----

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Work Order : ES2325870
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH3	SODH4	NODH3	NODH4	---
				Sampling date / time	03-Aug-2023 09:36	03-Aug-2023 09:42	03-Aug-2023 10:03	03-Aug-2023 09:58	---
Compound	CAS Number	LOR	Unit		ES2325870-006	ES2325870-007	ES2325870-008	ES2325870-009	-------
					Result	Result	Result	Result	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	---	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	20	µg/L		<20	<20	<20	<20	----
C10 - C14 Fraction	---	50	µg/L		<50	<50	<50	<50	----
C15 - C28 Fraction	---	100	µg/L		<100	<100	<100	<100	----
C29 - C36 Fraction	---	50	µg/L		<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	---	50	µg/L		<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	----
>C10 - C16 Fraction	---	100	µg/L		<100	<100	<100	<100	----
>C16 - C34 Fraction	---	100	µg/L		<100	<100	<100	<100	----
>C34 - C40 Fraction	---	100	µg/L		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	---	100	µg/L		<100	<100	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	100	µg/L		<100	<100	<100	<100	----

TROP WATER PTY LTD

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Work Order : ES2325870
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SODH3	SODH4	NODH3	NODH4	----
			Sampling date / time	03-Aug-2023 09:36	03-Aug-2023 09:42	03-Aug-2023 10:03	03-Aug-2023 09:58	----
Compound	CAS Number	LOR	Unit	ES2325870-006	ES2325870-007	ES2325870-008	ES2325870-009	--------
				Result	Result	Result	Result	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	34.9	35.8	32.4	35.3	----
2-Chlorophenol-D4	93951-73-6	1.0	%	64.0	65.5	62.6	64.8	----
2.4.6-Tribromophenol	118-79-6	1.0	%	41.4	40.4	33.3	40.1	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	68.7	72.1	66.7	64.6	----
Anthracene-d10	1719-06-8	1.0	%	67.0	67.2	62.7	69.1	----
4-Terphenyl-d14	1718-51-0	1.0	%	99.0	97.4	87.0	95.7	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	83.2	79.3	81.5	83.5	----
Toluene-D8	2037-26-5	2	%	115	90.8	99.6	101	----
4-Bromofluorobenzene	460-00-4	2	%	124	84.8	134	130	----

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Work Order	:	ES2325870
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS WDL

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

CERTIFICATE OF ANALYSIS

Work Order	: **ES2331410**	Page	: 1 of 6
Client	: **TROPICAL WATER NORTHERN TERRITORY**	Laboratory	: Environmental Division Sydney
Contact	: GODFRED DUODU	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ---	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 15-Sep-2023 08:30
Order number	: ---	Date Analysis Commenced	: 18-Sep-2023
C-O-C number	: ---	Issue Date	: 21-Sep-2023 16:56
Sampler	: Quentin Vander-Mower, VICTOR CALDERON		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Page	:	3 of 6
Work Order	:	ES2331410
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP2	----	----	----	----
				Sampling date / time	14-Sep-2023 10:27	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2331410-001	-------	-------	-------	-------
					Result	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		<5	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.002**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.018**	----	----	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.005**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.032**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.40**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.4**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.8**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.02**	----	----	----	----

Page	:	4 of 6
Work Order	:	ES2331410
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP2	----	----	----	----
				Sampling date / time	14-Sep-2023 10:27	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2331410-001	-------	-------	-------	-------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----

Page	:	5 of 6
Work Order	:	ES2331410
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP2	----	----	----	----
				Sampling date / time	14-Sep-2023 10:27	---	---	---	---
Compound	CAS Number	LOR	Unit		ES2331410-001	-------	-------	-------	-------
					Result	---	---	---	---
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	---	---	---	---
Toluene	108-88-3	2	µg/L		<2	---	---	---	---
Ethylbenzene	100-41-4	2	µg/L		<2	---	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	---	---	---	---
ortho-Xylene	95-47-6	2	µg/L		<2	---	---	---	---
^ Total Xylenes	---	2	µg/L		<2	---	---	---	---
^ Sum of BTEX	---	1	µg/L		<1	---	---	---	---
Naphthalene	91-20-3	5	µg/L		<5	---	---	---	---
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**29.1**	---	---	---	---
2-Chlorophenol-D4	93951-73-6	1.0	%		**54.8**	---	---	---	---
2.4.6-Tribromophenol	118-79-6	1.0	%		**55.6**	---	---	---	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**62.8**	---	---	---	---
Anthracene-d10	1719-06-8	1.0	%		**72.3**	---	---	---	---
4-Terphenyl-d14	1718-51-0	1.0	%		**77.0**	---	---	---	---
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**124**	---	---	---	---
Toluene-D8	2037-26-5	2	%		**85.5**	---	---	---	---
4-Bromofluorobenzene	460-00-4	2	%		**101**	---	---	---	---

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

CERTIFICATE OF ANALYSIS

Work Order	: ES2336085	Page	: 1 of 6
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: * ADMIN	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 8981 8889	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 20-Oct-2023 08:30
Order number	: ----	Date Analysis Commenced	: 20-Oct-2023
C-O-C number	: ----	Issue Date	: 26-Oct-2023 15:56
Sampler	: LABIN MAGAR, VICTOR CALDERON		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Page	: 3 of 6
Work Order	: ES2336085
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	----	----	----
				Sampling date / time	19-Oct-2023 09:53	19-Oct-2023 10:24	----	----	----
Compound	CAS Number	LOR	Unit		ES2336085-001	ES2336085-002	-------	-------	-------
					Result	Result	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		<5	<5	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	----	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		0.002	0.002	----	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		0.22	0.22	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		0.4	0.4	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		0.6	0.6	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.04	0.05	----	----	----

TROP WATER Pty Ltd

Page : 4 of 6
Work Order : ES2336085
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	----	----	----
				Sampling date / time	19-Oct-2023 09:53	19-Oct-2023 10:24	----	----	----
Compound	CAS Number	LOR	Unit		ES2336085-001	ES2336085-002	--------	--------	--------
					Result	Result	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	----	----	----

TROP WATER Pty Ltd

Page : 5 of 6
Work Order : ES2336085
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	---	---	---
				Sampling date / time	19-Oct-2023 09:53	19-Oct-2023 10:24	---	---	---
Compound	CAS Number	LOR	Unit		ES2336085-001	ES2336085-002	-------	-------	-------
					Result	Result	---	---	---
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	----	----	----
Toluene	108-88-3	2	µg/L		<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	----	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		25.8	28.7	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		47.9	53.3	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		34.9	39.4	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		54.6	52.3	----	----	----
Anthracene-d10	1719-06-8	1.0	%		68.8	73.6	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		77.1	83.4	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		96.6	102	----	----	----
Toluene-D8	2037-26-5	2	%		99.9	103	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		92.2	95.5	----	----	----

Page	: 6 of 6
Work Order	: ES2336085
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

CERTIFICATE OF ANALYSIS

Work Order	: ES2340540	Page	: 1 of 15
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: * ADMIN	Contact	: Customer Services ES
Address	: Unit 12 / 43 Berrimah Road Northern Territory Berrimah Darwin 0828	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 8981 8889	Telephone	: +61-2-8784 8555
Project	: CIPS WDL	Date Samples Received	: 23-Nov-2023 10:30
Order number	: ----	Date Analysis Commenced	: 23-Nov-2023
C-O-C number	: ----	Issue Date	: 29-Nov-2023 15:41
Sampler	: ARNOLD CAUNAN, GODFRED DUODU		
Site	: ----		
Quote number	: SY/016/23		
No. of samples received	: 8		
No. of samples analysed	: 8		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EG035: Positive Mercury result ES2340540 #5 has been confirmed by reanalysis.
- EG093: Samples containing high levels of sulfate may precipitate barium under the acidic conditions of this method and may therefore bias results low.

TROP WATER PTY LTD

Page : 3 of 15
Work Order : ES2340540
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NODH2	SODH2	----	----	----
			Sampling date / time	22-Nov-2023 11:59	22-Nov-2023 11:24	----	----	----
Compound	CAS Number	LOR	Unit	ES2340540-007	ES2340540-008	--------	--------	--------
				Result	Result	---	---	---
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	55.4	50.5	----	----	----
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	22800	10600	----	----	----
EG020-SD: Total Metals in Sediments by ICPMS								
Arsenic	7440-38-2	1.00	mg/kg	15.5	11.4	----	----	----
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	----	----	----
Chromium	7440-47-3	1.0	mg/kg	48.7	25.3	----	----	----
Copper	7440-50-8	1.0	mg/kg	8.5	4.6	----	----	----
Cobalt	7440-48-4	0.5	mg/kg	10.1	5.4	----	----	----
Lead	7439-92-1	1.0	mg/kg	13.6	8.5	----	----	----
Nickel	7440-02-0	1.0	mg/kg	14.4	7.4	----	----	----
Zinc	7440-66-6	1.0	mg/kg	58.4	21.4	----	----	----
EG035T: Total Recoverable Mercury by FIMS (Low Level)								
Mercury	7439-97-6	0.01	mg/kg	0.02	0.01	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.8	<0.8	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.8	<0.8	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.8	<0.8	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.8	<0.8	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.8	<0.8	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.8	<0.8	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.8	<0.8	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.8	<0.8	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.8	<0.8	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.8	<0.8	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.8	<0.8	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.8	<0.8	----	----	----

TROP WATER PTY LTD

Page : 4 of 15
Work Order : ES2340540
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

ALS

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NODH2	SODH2	----	----	----
			Sampling date / time	22-Nov-2023 11:59	22-Nov-2023 11:24	----	----	----
Compound	CAS Number	LOR	Unit	ES2340540-007	ES2340540-008	-------	-------	-------
				Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.8	<0.8	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.8	<0.8	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.8	<0.8	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.8	<0.8	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	1.0	1.0	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.9	1.9	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	----	----	----
C10 - C14 Fraction	----	3	mg/kg	<3	<3	----	----	----
C15 - C28 Fraction	----	3	mg/kg	19	23	----	----	----
C29 - C36 Fraction	----	5	mg/kg	18	26	----	----	----
^ C10 - C36 Fraction (sum)	----	3	mg/kg	37	49	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	----	----	----
>C10 - C16 Fraction	----	3	mg/kg	<5	<5	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	----	----	----
>C16 - C34 Fraction	----	3	mg/kg	27	33	----	----	----
>C34 - C40 Fraction	----	5	mg/kg	16	24	----	----	----
^ >C10 - C40 Fraction (sum)	----	3	mg/kg	43	57	----	----	----
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	----	----	----
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	----	----	----

TROP WATER PTY LTD

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Work Order : ES2340540
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

ALS

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NODH2	SODH2	----	----	----
				Sampling date / time	22-Nov-2023 11:59	22-Nov-2023 11:24	----	----	----
Compound	CAS Number	LOR	Unit		ES2340540-007	ES2340540-008	--------	--------	--------
					Result	Result	----	----	----
EP080-SD: BTEXN - Continued									
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	----	----
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		91.3	95.4	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		98.9	95.6	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		82.9	80.7	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		97.1	99.2	----	----	----
Anthracene-d10	1719-06-8	0.5	%		103	112	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		104	107	----	----	----
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		77.4	88.9	----	----	----
Toluene-D8	2037-26-5	0.2	%		74.5	80.3	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		89.9	96.9	----	----	----

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Work Order : ES2340540
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ILCP	ISCP	SODH3	SODH4	NODH3
			Sampling date / time	22-Nov-2023 13:32	22-Nov-2023 13:48	22-Nov-2023 11:32	22-Nov-2023 11:41	22-Nov-2023 12:06
Compound	CAS Number	LOR	Unit	ES2340540-001	ES2340540-002	ES2340540-003	ES2340540-004	ES2340540-005
				Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	31	7	<5	<5
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.08	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	0.051	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.12	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	0.002	0.007	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	0.002	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	0.176	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.005	µg/L	----	----	<0.005	<0.005	<0.005
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.005	µg/L	----	----	<0.005	<0.005	0.008
EG035T: Total Recoverable Mercury by FIMS								

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Work Order : ES2340540
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ILCP	ISCP	SODH3	SODH4	NODH3
			Sampling date / time	22-Nov-2023 13:32	22-Nov-2023 13:48	22-Nov-2023 11:32	22-Nov-2023 11:41	22-Nov-2023 12:06
Compound	CAS Number	LOR	Unit	ES2340540-001	ES2340540-002	ES2340540-003	ES2340540-004	ES2340540-005
				Result	Result	Result	Result	Result
EG035T: Total Recoverable Mercury by FIMS - Continued								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS								
Aluminium	7429-90-5	5	µg/L	----	----	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L	----	----	0.9	1.1	1.2
Cadmium	7440-43-9	0.2	µg/L	----	----	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L	----	----	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L	----	----	<1	<1	<1
Lead	7439-92-1	0.2	µg/L	----	----	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Zinc	7440-66-6	5	µg/L	----	----	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS								
Aluminium	7429-90-5	5	µg/L	----	----	71	62	292
Arsenic	7440-38-2	0.5	µg/L	----	----	1.2	1.2	1.5
Cadmium	7440-43-9	0.2	µg/L	----	----	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L	----	----	<0.5	<0.5	0.6
Cobalt	7440-48-4	0.2	µg/L	----	----	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L	----	----	<1	<1	<1
Lead	7439-92-1	0.2	µg/L	----	----	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Zinc	7440-66-6	5	µg/L	----	----	<5	<5	<5
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	1.02	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.8	1.7	0.5	0.4	0.4
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	1.8	2.7	0.5	0.4	0.4

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Work Order : ES2340540
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ILCP	ISCP	SODH3	SODH4	NODH3
				Sampling date / time	22-Nov-2023 13:32	22-Nov-2023 13:48	22-Nov-2023 11:32	22-Nov-2023 11:41	22-Nov-2023 12:06
Compound	CAS Number	LOR	Unit		ES2340540-001	ES2340540-002	ES2340540-003	ES2340540-004	ES2340540-005
					Result	Result	Result	Result	Result
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.05**	**0.14**	**0.03**	**0.02**	**0.03**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	**580**	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	**100**	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	**680**	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									

TROP WATER PTY LTD

Page : 9 of 15
Work Order : ES2340540
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ILCP	ISCP	SODH3	SODH4	NODH3
				Sampling date / time	22-Nov-2023 13:32	22-Nov-2023 13:48	22-Nov-2023 11:32	22-Nov-2023 11:41	22-Nov-2023 12:06
Compound	CAS Number	LOR	Unit		ES2340540-001	ES2340540-002	ES2340540-003	ES2340540-004	ES2340540-005
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	---	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	---	100	µg/L		<100	600	<100	<100	<100
>C34 - C40 Fraction	---	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	---	100	µg/L		<100	600	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	---	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	---	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		24.0	23.1	29.5	25.7	28.0
2-Chlorophenol-D4	93951-73-6	1.0	%		47.5	41.4	51.3	44.6	52.5
2.4.6-Tribromophenol	118-79-6	1.0	%		48.0	41.6	56.5	48.9	52.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		60.4	64.1	66.5	58.9	68.0
Anthracene-d10	1719-06-8	1.0	%		69.7	68.4	74.1	70.3	75.0
4-Terphenyl-d14	1718-51-0	1.0	%		58.3	58.7	64.7	61.0	60.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		107	105	98.0	120	101

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Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ILCP	ISCP	SODH3	SODH4	NODH3
				Sampling date / time	22-Nov-2023 13:32	22-Nov-2023 13:48	22-Nov-2023 11:32	22-Nov-2023 11:41	22-Nov-2023 12:06
Compound	CAS Number	LOR	Unit		ES2340540-001	ES2340540-002	ES2340540-003	ES2340540-004	ES2340540-005
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	2	%		112	110	97.4	116	98.5
4-Bromofluorobenzene	460-00-4	2	%		112	110	99.9	114	102

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	NODH4	----	----	----	----
			Sampling date / time	22-Nov-2023 12:12	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2340540-006	-------	-------	-------	-------
				Result	---	---	---	---
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.005	µg/L	<0.005	----	----	----	----
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.005	µg/L	<0.005	----	----	----	----
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS								
Aluminium	7429-90-5	5	µg/L	<5	----	----	----	----
Arsenic	7440-38-2	0.5	µg/L	0.8	----	----	----	----
Cadmium	7440-43-9	0.2	µg/L	<0.2	----	----	----	----
Chromium	7440-47-3	0.5	µg/L	<0.5	----	----	----	----
Cobalt	7440-48-4	0.2	µg/L	<0.2	----	----	----	----
Copper	7440-50-8	1	µg/L	<1	----	----	----	----
Lead	7439-92-1	0.2	µg/L	<0.2	----	----	----	----
Nickel	7440-02-0	0.5	µg/L	<0.5	----	----	----	----
Zinc	7440-66-6	5	µg/L	<5	----	----	----	----
EG093T: Total Metals in Saline Water by ORC-ICPMS								
Aluminium	7429-90-5	5	µg/L	119	----	----	----	----
Arsenic	7440-38-2	0.5	µg/L	1.3	----	----	----	----
Cadmium	7440-43-9	0.2	µg/L	<0.2	----	----	----	----
Chromium	7440-47-3	0.5	µg/L	<0.5	----	----	----	----
Cobalt	7440-48-4	0.2	µg/L	<0.2	----	----	----	----
Copper	7440-50-8	1	µg/L	<1	----	----	----	----
Lead	7439-92-1	0.2	µg/L	<0.2	----	----	----	----
Nickel	7440-02-0	0.5	µg/L	<0.5	----	----	----	----
Zinc	7440-66-6	5	µg/L	<5	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	----	----	----	----

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	NODH4	----	----	----	----
				Sampling date / time	22-Nov-2023 12:12	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2340540-006	--------	--------	--------	--------
					Result	---	---	---	---
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		0.2	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		0.2	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.03	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	NODH4	----	----	----	----
				Sampling date / time	22-Nov-2023 12:12	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2340540-006	--------	--------	--------	--------
					Result	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ Total Xylenes	----	2	µg/L		<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		25.4	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		44.1	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		47.4	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		58.0	----	----	----	----

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	NODH4	----	----	----	----
				Sampling date / time	22-Nov-2023 12:12	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2340540-006	--------	--------	--------	--------
					Result	---	---	---	---
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	1.0	%		67.6	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		58.1	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		101	----	----	----	----
Toluene-D8	2037-26-5	2	%		97.3	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		98.2	----	----	----	----