REPORT TO NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

Channel Island Power Station WDL212-04 Annual Monitoring Report

Issued: 11 December 2024

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ISO 9001| ISO 14001| AS/NZS 4801

Document Control Form

TW Report:	Channel Island Power Station WDL212-04 Annual Monitoring Report – Issued 11 December 2024
Revision Number:	Version 1

Revision History

Revision Number	Date	Prepared By	Reviewed By	Approved By
Draft 1	03-Dec-2024	Dr Godfred Duodu	Daniel Lane	
Draft 2	06-Dec-2024	Dr Godfred Duodu	Tony Boland	
TGen Review	10-Dec-2024	Dr Godfred Duodu	Andrea Kittel	A.R.Kittel
Final	11-Dec-2024			Tony Boland

Issue Register

Distribution List	Date Issued	Number of Copies Sent
Territory Generation - Andrea.Kittel@territorygeneration.com.au	11 December 2024	1
Waste NTEPA - environmentalregulation@nt.gov.au	11 December 2024	1

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EXECUTIVE SUMMARY

In accordance with Conditions 39 and 40 of Waste Discharge Licence WDL212-04, this Monitoring Report is prepared by Trop Water Pty Ltd on behalf of Territory Generation (TGen) for the period starting from 1 November 2023 and ending on 31 October 2024. 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:

- Wastewater is discharged 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. In addition, the level transmitter of the flow meter installed at ADP1 developed a fault for substantial time within the year.
- The total wastewater discharge volume from the Cooling Tower (ADP1) within the year was 122.2 ML compared to the preceding year of 26.05 ML. The increase in water discharge at ADP1 is due to the erroneously high discharge data recorded from 12 March 2024 to 30 April 2024. On the other hand, a total of 9443.13 kL wastewater was discharged at ADP2 for the past 12 months. Discharge at ADP2 typically occurs during the wet season when settling ponds are impacted by rainfall and inflow exceeds evaporation rates.
- Elevated pH at ADP1 and ADP2 which is typical of most thermal power cooling water operation systems (7.0 - 9.5) was outside the WDL212-04 pH trigger value range of 6.00 – 8.50 pH units on 23 January 2024 (**8.78** and **8.89**), 21 March 2024 (**8.66** and **8.86**) and 18 April 2024 (**8.67** and **9.31**), respectively.
- All Total Phosphorous (TP), Total Nitrogen (TN) and Total Suspended Solids (TSS) were below their respective trigger values specified in WDL212-04 at ADP1 and ADP2 in this reporting year, except for TN of **4.1** mg/L recorded at ADP2 on 22 February 2024. This one-off elevated TN concentration is less than three or more times the TN trigger value of 3.5 mg/L.
- Apart from filtered Zn, all filtered metals concentration were below the trigger values specified for each metal in WDL212-04. Filtered Zn concentration at ADP2 on 20 December 2023 (**33** µg/L), 23 January 2024 (**48** µg/L) and 22 February 2024 (**346** µg/L), exceeded Zn trigger value of 21 µg/L under WDL212-03 in this monitoring period. Only the exceedance at ADP2 on 22 February 2024 required notification under WDL212-03. Remobilisation of Zinc due to low water pH at ISCP (5.55) on the day of monitoring remains the likely contributing factor to the elevated Filtered Zn at ADP2. The high filtered Zn concentration at ADP2 was notified to the NT EPA on 4 March 2024. However, it should be noted that a one-off filtered Zn concentration of 346 µg/L at either ADP1 or ADP2 does not constitute a non-compliance in the current WDL212-04, with filterable Zn trigger value of 152 µg/L.
- All analysed hydrocarbons were below the laboratory limit of reporting (LOR) for each chemical at all CIPS water monitoring sites except TPH recorded at ADP2 and ISCP. The detected TPH concentrations at ADP2 and ISCP can be attributed to diesel range organics (DRO) (C10 – C28 fraction), and motor oils (C29 – C36 fraction) (Collins, 2007).
- Except estimated contamination load for TN, TP, TSS, Al, As, Cr, Cu, and Zn at ADP1, all other reported contamination loads for contaminants at ADP1 were estimated with the absolute value of their respective LOR in this year. At ADP2, only the absolute value of PAHs and BTEX were used in the estimation of contamination loads throughout the year. Compared to the previous year, contamination load at ADP1 for this year increased by a least factor of 2.1 for filtered Cu and most factor of 9.6 for total Zn. However, the estimated contamination load at ADP1 for this year is biased due to the erroneously high discharge data recorded from 12 March 2024 to 30 April 2024 (See section 3.1.1).
- Metal monitoring results in sediment at NODH2 and SODH2 were consistently below the specified trigger values in WDL212-04. Apart from average Zn concentration at NODH2 that increased this year,

average concentration of all metals in sediment are comparable 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.

- All hydrocarbon results in sediment for this year and that of the preceding three (3) years are less than the LOR and below trigger values specified in WDL212-04. Therefore, the is no evidence of the influence of hydrocarbons from CIPS on Darwin Harbour sediment quality.

The sporadic and unpredictable nature of discharge from ADP1 couple with faulty flow meter, resulted in operational conditions where compliance with condition 29.1 and 22 were not achieved for a significant number of monitoring events. However, TGen is looking into alternative technology for measuring discharge volume. In view of the elevated levels of contaminants in the small pond (ISCP) TGen circulated the water between the small and large (ILCP) settling ponds, during the 2024 dry season to reduce the level of accumulated contaminants in the small pond.

Based on the monitoring results obtained during the reporting period, there is a strong indication that wastewater discharged from CIPS has not adversely impacted the receiving environment (Darwin Harbour) water and sediment quality. Trop Water (on behalf of TGen) will continue to monitor wastewater and sediment quality conditions, in accordance with the monitoring program specified in WDL212-04.

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1 INTRODUCTION

Power Generation Corporation, trading as Territory Generation (TGen) own and operates the largest power station in the Northern Territory of Australia, the Channel Island Power Station (CIPS). TGen is a corporation owned by the Northern Territory Government. Since its commissioning in 1986 and commencement of formal operations in 1987, CIPS has been the main source of electricity for the Darwin-Katherine Interconnected system. CIPS currently has 301.4 MW of installed power capacity generated by four (4) heavy industrial gas turbines, three (3) aeroderivative gas turbines, two (2) dual fuel and one (1) steam turbine. A 35 MVA Darwin-Katherine Battery Energy Storage System and a renewable-fuel capable TM2500 gas turbine generator set are undergoing commissioning and installation at the station, respectively.

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) Figure 1 and Figure 2, respectively. Subsequently, the wastewater is discharged via two outlets to Darwin Harbour. These two outlets receive effluent from different sources as indicated in Figure 3 (Cooling Tower, Cooling/settling Ponds, and stormwater).

The Northern Territory Environmental Protection Authority (NTEPA) granted CIPS its first Waste Discharge Licence (WDL 212), for the period November 2015 to November 2017. From June 2018 to June 2020, wastewater discharge was managed under WDL 212-01. Subsequently, wastewater discharge was managed under WDL212-02 from June 2022 to November 2022 and WDL212-03 from December 2022 to June 2024. Currently, wastewater discharged from the CIPS facility to Darwin Harbour is being managed under the amended Waste Discharge Licence WDL212-04, issued on 18 July 2024, 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 WDL required monitoring program, and to manage the waste discharge licence activities. The current licence (WDL212-04) 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 WDL212-04 annual monitoring report 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 physical and chemical parameters. The reporting period for this report is from 1 November 2023 to 31 October 2024.

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

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

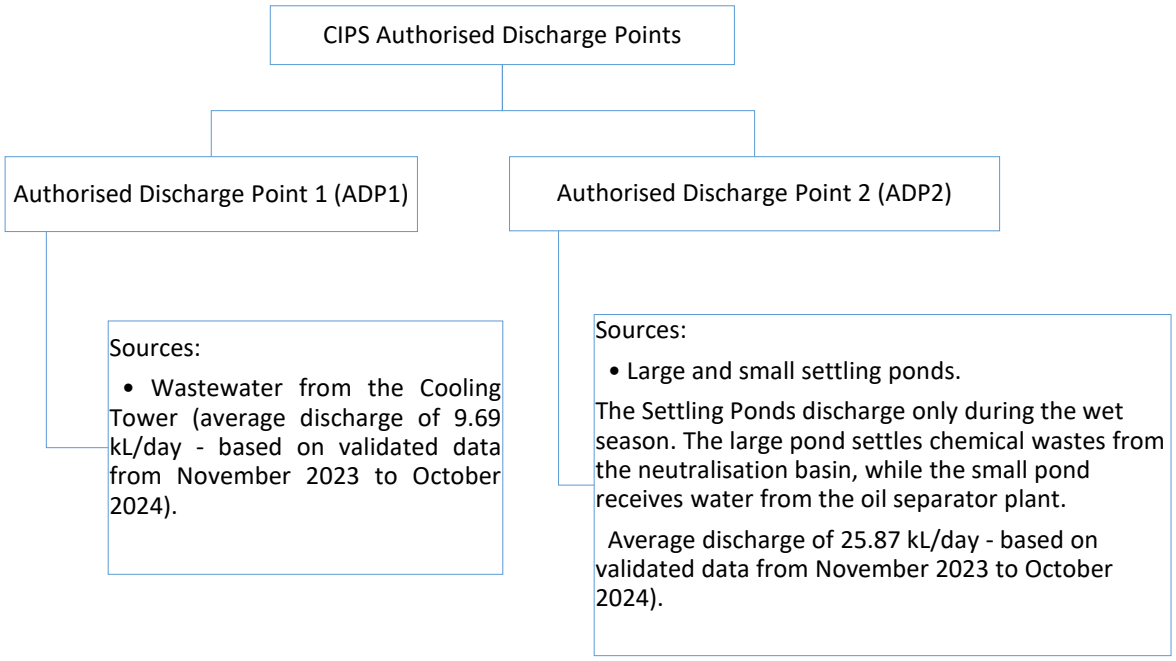

Figure 3: Wastewater sources at CIPS Authorised Discharge Points.

Wastewater discharge from Channel Island Power Station

WDL212-04 prescribes 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 and quality of wastewater at ADP1 is dependent on the water chemistry of the cooling tower water. This is highly unpredictable and dependent on a wide variety of operational conditions of the power generation infrastructure on site. 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).

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, and subsequently 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 two separate sources, Neutralization Basin and 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).

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.

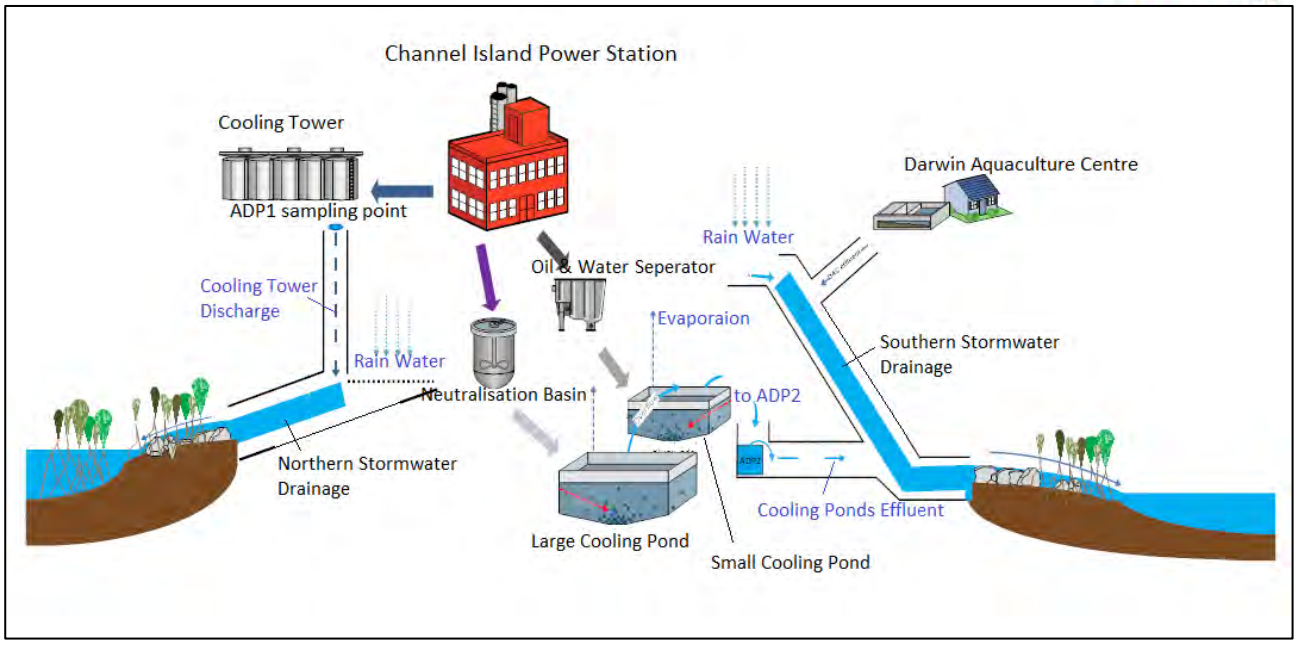

Figure 4: Channel Island Power Station wastewater discharge facility.

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 (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 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 (Safarova et al., 2022).

Rainfall events during the build-up and wet seasons typically result in increased stormwater infiltration into CIPS stormwater drainage networks as well as the settling ponds. This leads to a substantial increase in water levels in the settling ponds. Discharge at ADP2 occurs mostly during the wet season when settling ponds are impacted by rainfall and subsequently exceed evaporation rates, resulting in flows from the settling ponds, to ADP2. Thus, flow from ADP2 in the dry season is limited by evaporation rates, which results in the upstream settling pond levels dropping over one metre below the inlet to ADP2.

2 METHODS

CIPS Monitoring sites under WDL212-04

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 and subsequently WDL212-04, the four marine sites were removed from the monitoring program, leaving only the six (6) land-based sites. Nevertheless, sampling at the four Darwin Harbour water monitoring sites has been continued on a quarterly basis, in the interest of monitoring the environmental health of the receiving environment. The data for these sites 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 under WDL212-04, as well as the four marine sites are shown in Table 1. Figure 5 shows the relative location of all monitoring sites. Signage identifying each land-based sampling site is 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: -12.5602148 Long: 130.8627621
NODH1	Northern Outlet to Darwin Harbour (Drain prior to mixing in receiving environment)	Lat: -12.5540919 Long: 130.8640302
ADP1	Cooling Tower Wastewater Discharge (Representative of discharge from cooling tower to drainage system that flows to NODH1)	Lat: -12.554612 Long: 130.8649699
ILCP	Large Cooling Pond Influent	Lat: -12.5556373 Long: 130.8639617
ISCP	Small Cooling Pond Influent	Lat: -12.5561714 Long: 130.86412
ADP2	Cooling Ponds Wastewater Discharge (Representative of discharge from cooling ponds to drainage system that flows to SODH1)	Lat: -12.5565488 Long: 130.8635673
SODH3	Southern Discharge Point Mixing Zone (marine)	Lat: --12.560221 Long: 130.863668
SODH4	Southern Receiving Environment Monitoring Point (marine)	Lat: -12.5607378 Long: 130.8646005
NODH3	Northern Discharge Point Mixing Zone (marine)	Lat: -12.555015 Long: 130.862802
NODH4	Northern Receiving Environment Monitoring Point (marine)	Lat: -12.5553539 Long: 130.8616205

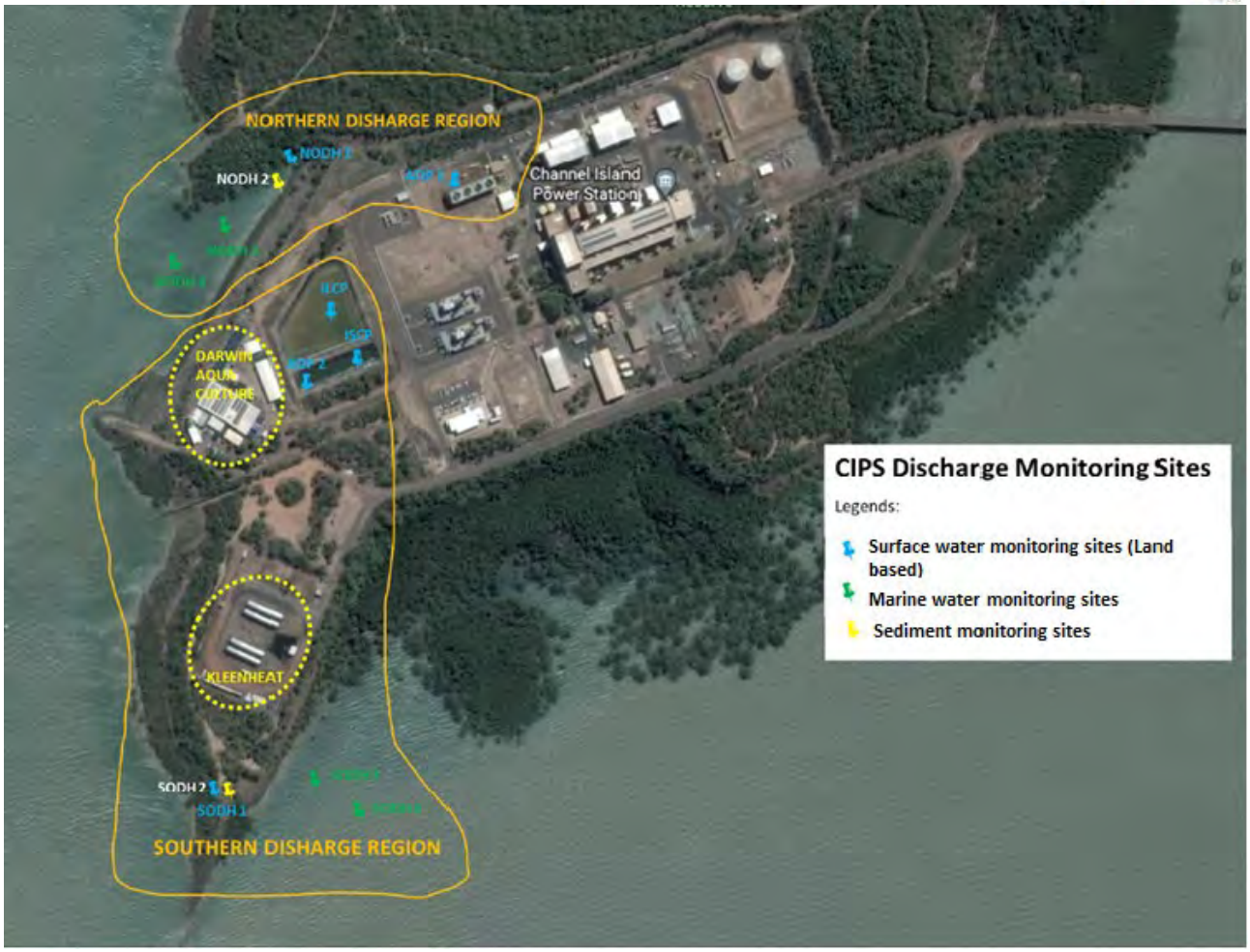

Figure 5: CIPS water and sediment monitoring sites.

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: -12.5544821 and Long: 130.8632593)
- SODH2 - outfall from SODH1 (Lat: -12.560561 and Long: 130.8631102)

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 WDL212-04 monitoring program and additional marine sites.

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 WDL212-04 is scheduled to be undertaken annually but TGen undertook quarterly monitoring at sites NODH2 and SODH2. Parameters to be analysed 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

Water and sediment monitoring was undertaken by Trop Water Pty Ltd in accordance with the monitoring program specified in item 11 of WDL212-04. All samples and field environmental data were collected in accordance with the *Australian Guidelines for Water Quality Monitoring and Reporting* (AS/NZS 5667; ANZECC/ARMCANZ, 2000), where applicable.

In-situ measurements of Temperature, Electrical Conductivity (EC), Dissolved Oxygen, and pH at each site, 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.

2.1.5 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 from 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, on the day of collection. ALS Darwin – Environmental arrange overnight transport of the samples to ALS Sydney – Environmental (NATA Accreditation No. 825) for analysis.

2.1.6 Sediment sampling

Annual sediment samples, as per the monitoring program in WDL212-04, at sites NODH2 and SODH2 were obtained using a stainless-steel Ekman grab sampler that can dig up to 15 cm 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 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

Monitoring Results

A detailed discussion on data and information obtained through the implementation and performance of the monitoring program, as prescribed by WDL212-04, on the dates specified in Item 13, is included in this section. This monitoring report pertains to the period 1 November 2023, to 31 October 2024, and encompasses data on:

(a) Monitoring of discharge volume in accordance with Appendix 2;

(b) Surface water quality monitoring in accordance with Appendix 2;

(c) Monitoring of annual contaminant loads discharged to Darwin Harbour in accordance with Appendix 2 and conditions 40;

(d) Sediment monitoring in accordance with Appendix 3.

Surface water and sediment quality monitoring results were compared to the trigger values specified in WDL212-04, where available. *Trigger Values for contaminants in water are only applicable to discharges at **ADP1** and **ADP2** for **WDL212-04** incident notification. Trigger Values for contaminants in sediment are applicable to only **NODH2** and **SODH2** for **WDL212-04** incident notification. Sediment monitoring is scheduled annually, and sediment samples can be taken anytime within the year. As detailed in Appendix 2 (Page 20) of WDL212-04; "Trigger Values specified in WDL212-04 for metals and metalloids apply to filtered fraction only". Results of Filtered metals in this report refers to field filtered samples.*

Trigger Value limits for parameters are listed in Appendix 2. Trigger Values are imposed on pH, Total Phosphorus (TP), Total Nitrogen (TN), Total Suspended Solids (TSS) and Filtered Metals (Al, As, Cd, Cr, Co Cu, Pb, Hg, Ni and Zn). Trigger Values for TP, TN, TSS, Al and Zn defined in WDL212-04 are imposed at ADP1, ADP2, NODH1 and SODH1.

WDL212-04 Licence Schedule 1 Item 10 states:

Notifiable incidents with this licence include:

(a) An exceedance of a trigger value specified in Item 7 at the compliance points 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 points in Item 8;
(c) A discharge at a point not specified in Item 5;

(d) A discharge from a source not specified in Item 6;

(e) A failure to comply with conditions 20 or 23.

Where result of monitoring is outside the range of the relevant Trigger Value specified in WDL212-04 (whether the out of limit requires a "notification" under WDL212-04 or not), the result is shown in **Bold** font. Where result of monitoring is out of range of relevant Trigger Value specified in WDL212-04 and requires "notification" under WDL212-04, 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.

Wastewater Discharge Volume

3.1.1 Wastewater discharge at ADP1 and ADP2

Figure 7 and Figure 8 below shows the daily discharge (kL/day) and monthly average flow rate (kL/month) of wastewater discharged from ADP1 (Cooling Tower) from November 2023 to October 2024. Wastewater discharged from ADP1 feeds into CIPS' Northern Drainage system to the outlet at NODH1 and subsequently to Darwin Harbour.

The monthly flow rate at ADP1 varied from no discharge (i.e. 0 kL/month) to 61646.04 kL/month during the reporting period (November 2023 to October 2024). The highest discharge occurred in April 2024, while there is no record of discharge for November 2023, December 2023 (except 31 December 2023), May 2024, June 2024, July 2024, August 2024 and September 2024, as the level transmitter of the flow meter installed at ADP1 developed a fault (Figure 8). Record of discharges from 12 March 2024 to 30 April 2024 are not reliable, since the recorded volume of water is the same for each day; i.e. sensor fault occurred. No discharge occurred (no flow) on the day of monitoring at ADP1 in November 2023, December 2023, February 2024, July 2024, August 2024 and October 2024. As such, samples were not taken to the laboratory on these days. Wastewater is discharged 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 29.1 will not be achieved for a significant number of monitoring events. The total wastewater discharged at ADP1 for the past 12 months was 122.2 ML compared to the preceding year of 26.05 ML. The increase in water discharge at ADP1 is due to the erroneously high discharge data recorded from 12 March 2024 to 30 April 2024.

Daily discharge (kL/day) and monthly average flow rate (kL/month) at ADP2 are shown in Figure 9 and Figure 10, respectively. The variation in monthly discharge at ADP2 ranged from no discharge (i.e. 0 kL/month) to 6826.8 kL/month during the year (November 2023 to October 2024). The highest discharge occurred in September 2024, while the flow meter recorded no discharge for November 2023, December 2023, January 2024, February 2024, May 2024, June 2024, July 2024 and August 2024 (Figure 10). However, on the day of monitoring in December 2023, January 2024 and February 2024, ADP2 was discharging intermittently in drips aided by strong winds. As such, samples were taken in those months to be analysed by the laboratory. The total wastewater discharged at ADP2 for the past 12 months was 9443.13 kL. 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.

In total, CIPS discharged 131.64 ML of recorded wastewater for the 12-month reporting period (November 2023 to October 2024) from ADP1 and ADP2.

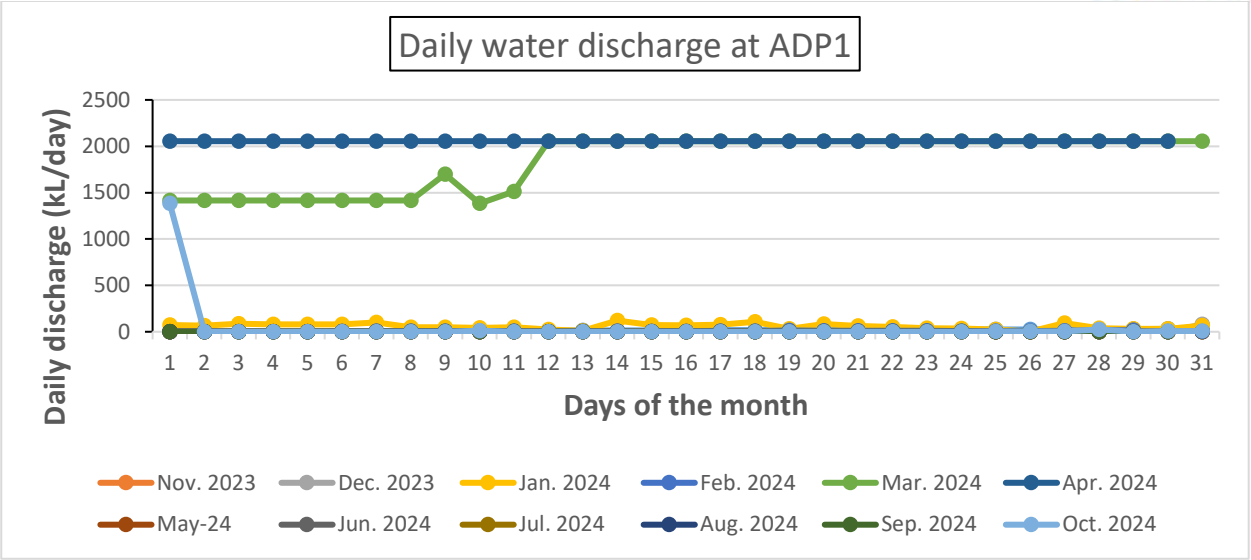

Figure 7: Daily wastewater discharge rate at ADP1 (Cooling Tower) from November 2023 to October 2024.

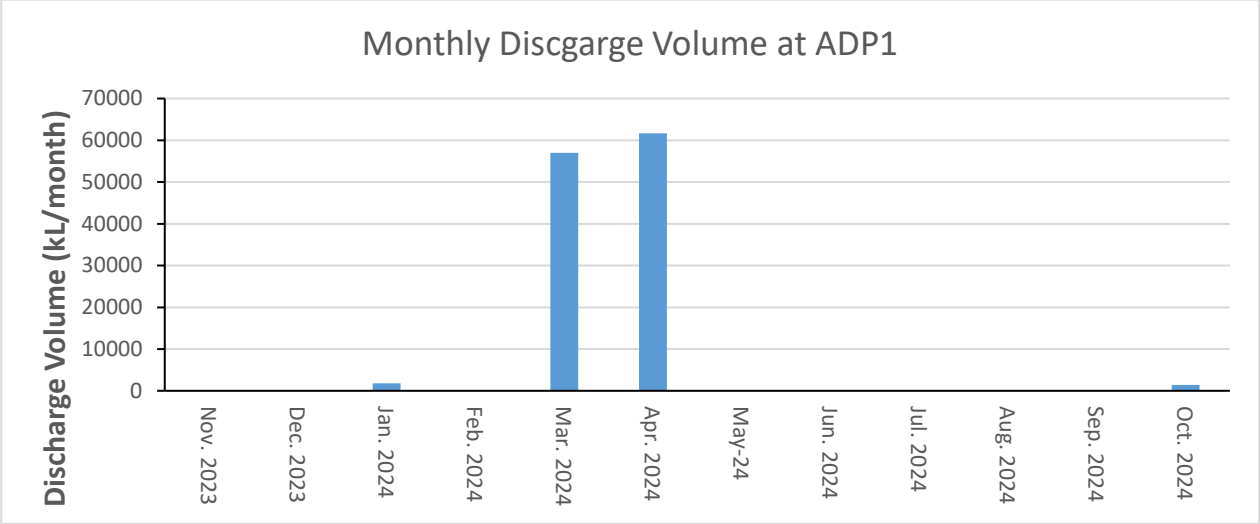

Figure 8: Monthly average wastewater discharge rate at ADP1 (Cooling Tower) from November 2023 to October 2024.

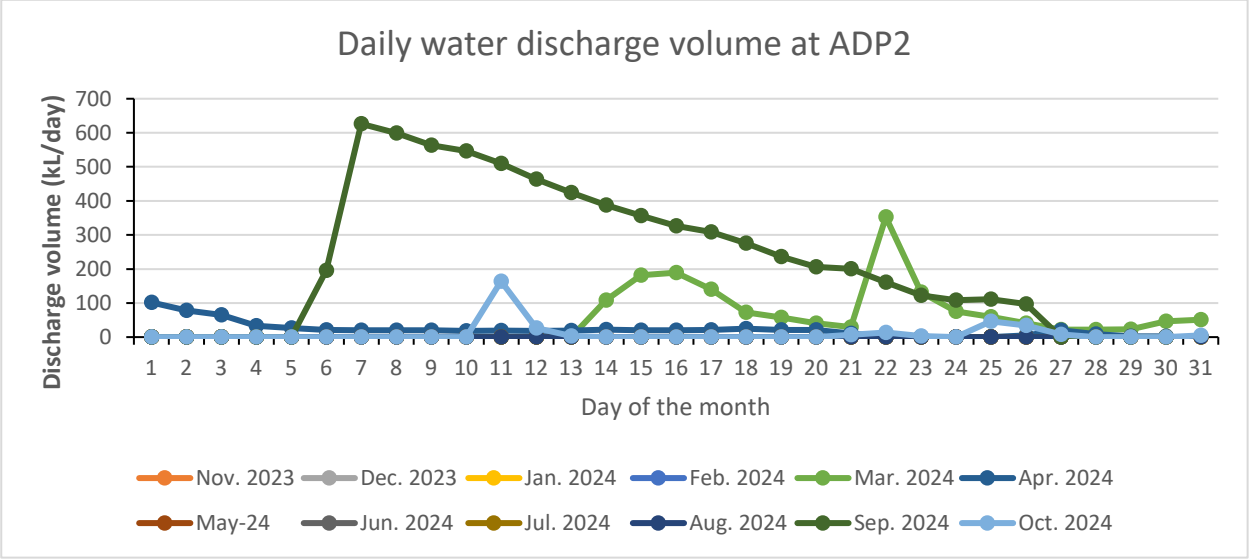

Figure 9: Daily wastewater discharge rate at ADP2 from November 2023 to October 2024.

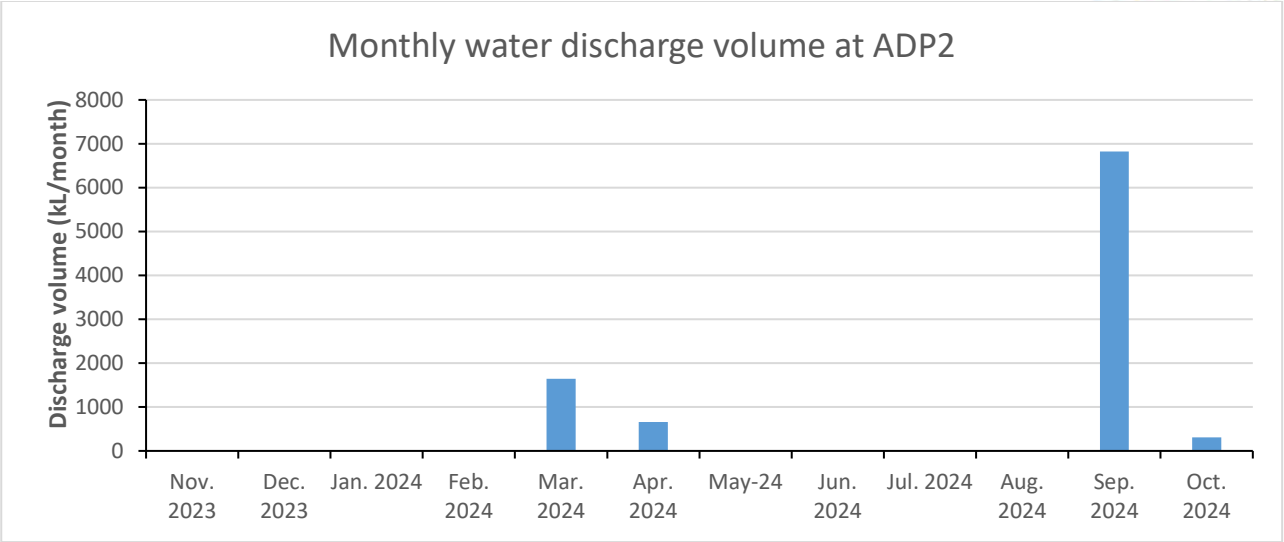

Figure 10: Monthly average wastewater discharge rate at ADP2 from November 2023 to October 2024.

Surface water quality monitoring

In accordance with the monitoring plan specified in WDL212-04, both monthly (M) and quarterly (Q) monitoring are prescribed for the following monitoring points:

Authorised Discharge Point 1 and associated Monitoring Points (Northern Monitoring Points):
- ADP1 – Authorised Discharge Point 1/Compliance Point 1 (M)
- NODH1 – Northern Outlet to Darwin Harbour/Downstream Monitoring Point (M)

Authorised Discharge Point 2 and associated Monitoring Points (Southern Monitoring Points):
- ADP2 – Authorised Discharge Point 2/Compliance Point 2 (M)
- SODH1 – Southern Outlet to Darwin Harbour/Downstream Monitoring Point (M)
- ILCP – Influent Large Cooling Pond (Q)
- ISCP – Influent Small Cooling Pond (Q)

3.1.2 Results of in-situ parameters where WDL212-04 Trigger Values are specified

pH

pH (pH units) at the monthly monitoring sites (ADP1, ADP2, NODH1 and SODH1) and the cooling ponds/quarterly monitoring sites (ILCP and ISCP), for sampling events from April 2016 to October 2024 are shown in Figure 11 and Figure 12, respectively. Results are compared with the pH trigger value range specified in WDL212-04. Maximum (8.5) and minimum (6.0) Trigger Values for pH in WDL212-04 are shown in pink and red colours, respectively. Trigger Value for pH in water are only applicable to discharges at ADP1 and ADP2 for WDL212-04 incident notification.

pH at Authorised Discharge sites (ADP1 and ADP2) for this current monitoring period (November 2023 to October 2024) varied between 7.23 – 9.31 pH units (Figure 11 and Table A 1, in Additional data section). At the southern and northern drainage outlets (SODH1 and NODH1) sites, pH ranged between 6.88 and 8.56 pH units. pH was variable at all monthly monitoring sites, ranging between and slightly above the trigger value range of 6.00 – 8.50 from 2016 to date, except for the low pH recorded at ADP2 (**4.3**) and NODH1 (**4.11**) on 31 July 2017 and 22 June 2017, respectively. pH was outside the WDL212-04 pH trigger value range of 6.00 – 8.50 pH units at ADP1 and ADP2 on 23 January 2024 (**8.78** and **8.89**), 21 March 2024 (**8.66** and **8.86**) and 18 April 2024 (**8.67** and **9.31**), respectively. The high pH at ADP1 and ADP2 is typical of most thermal power

cooling water operation systems (7.0 - 9.5) (Ahmed, Jamal & Shujaatullah, 2020). These exceedances at ADP1 and ADP2 were not three or more times the pH trigger value range nor recorded on three consecutive sampling occasions. Therefore, there was no notifiable incident at the compliance points (ADP1 and ADP2) for pH within the monitoring period (November 2023 to October 2024).

pH at the quarterly monitoring/cooling ponds sites (ILCP and ISCP) varied between 5.55 – 9.35 pH units (Figure 12 and Table A 1, in Additional data section) during the current reporting period. Notification is not required for exceedance of pH units at these sites. Except for low pH recorded at ILCP in January and April 2017, pH variation remains between and slightly above the trigger value range of 6.00 – 8.50 at the quarterly monitoring sites from April 2016 to October 2024.

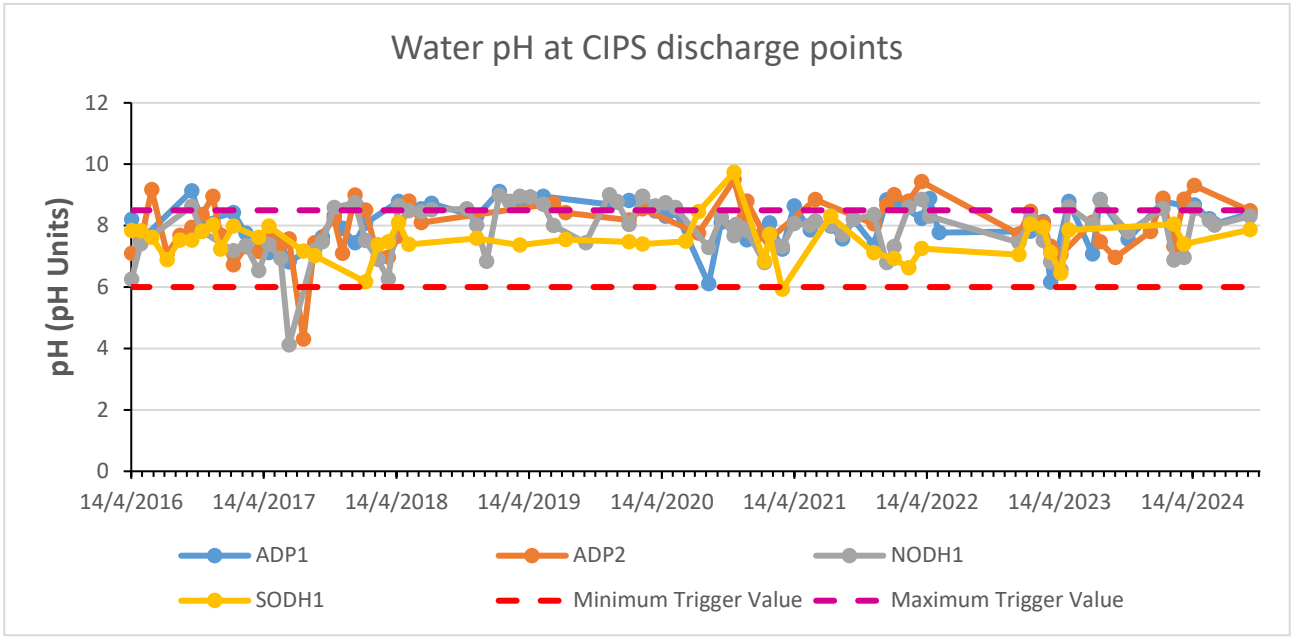

Figure 11: pH (pH units) at monthly monitoring sites from April 2016 to October 2024

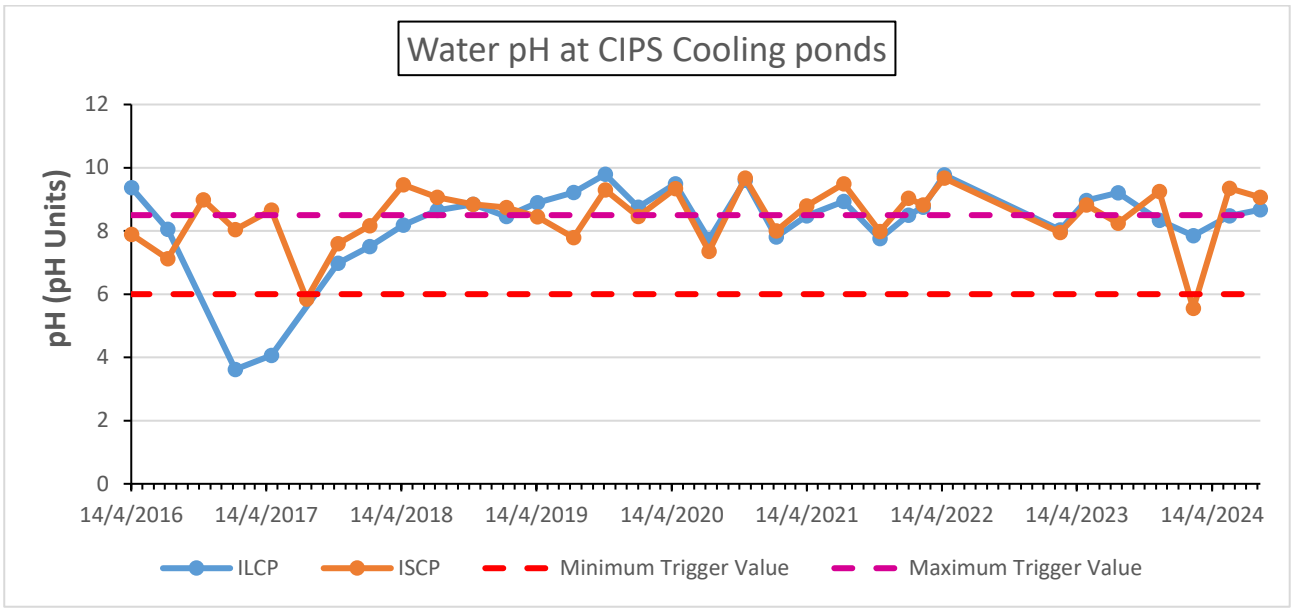

Figure 12: pH (pH units) at quarterly monitoring sites from April 2016 to October 2024

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

Temperature

Figure 13 and Figure 14 below as well as Table A 2 in Additional data section 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 from April 2026 to October 2024. WDL212-04 does not specify trigger value for this parameter. During the current reporting period (1 November 2023 to 31 October 2024), Temperature varied between 25.86 – 34.2 °C at all monitoring sites. Water Temperature at all monitoring sites were typical of mean water temperature in the Darwin region of Northern Australia (25 – 32°C) (Chapman, 1969). The variation in water temperature usually depicts air temperature in the Darwin region at a time. Air temperature in the Darwin region is usually low between May and September (dry season) with the South-East trade winds and comparatively low dry season insolation. Subsequent increased insolation with seasonal warming and low average wind speed increase air temperature in the build-up and wet seasons (October to April). Historic seasonal temperature trends were similar for all monitoring years presented in Figure 13 and Figure 14.

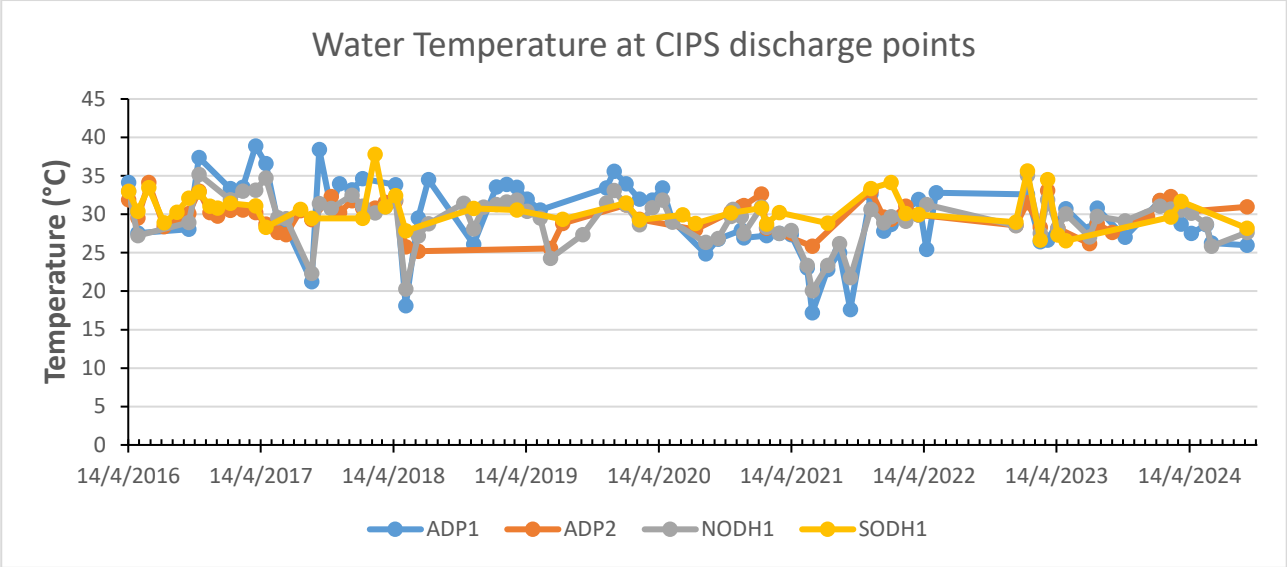

Figure 13: Water Temperature (°C) at monthly monitoring sites from April 2016 to October 2024.

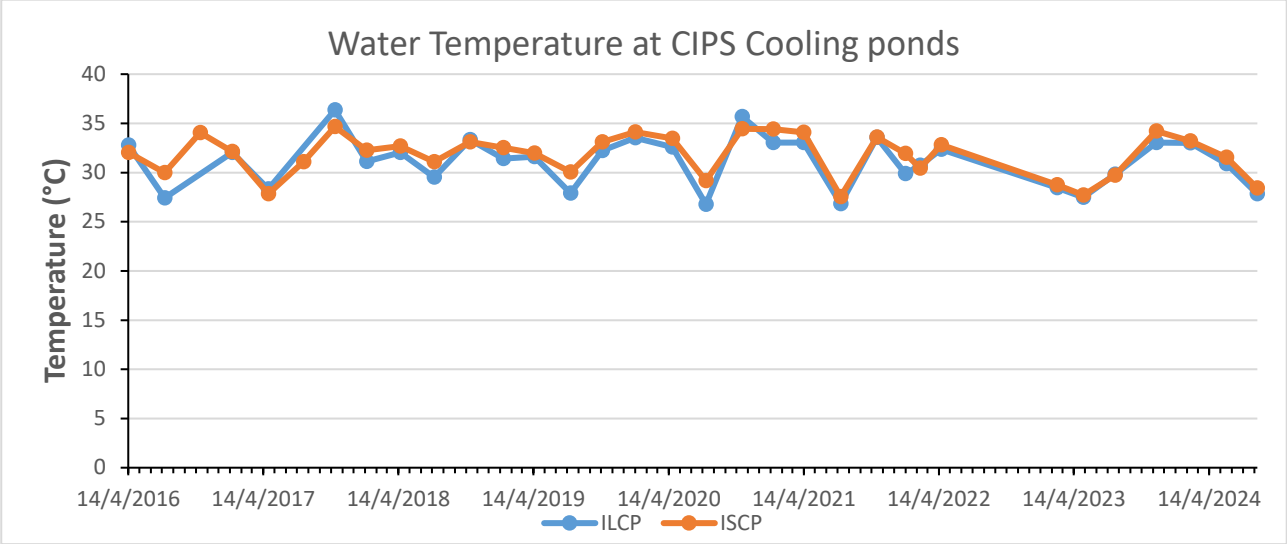

Figure 14: Water Temperature (°C) at quarterly monitoring sites from April 2016 to October 2024.

Dissolved Oxygen

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) are shown in Figure 15 and Figure 16, respectively. WDL212-04 does not specify trigger value for DO % Sat. DO % Sat ranged between 45.5 % - 98.8 % at the monthly sites from November 2023 to October 2024. DO % Sat has been variable throughout the monitoring period from April 2016 to October 2024 at all monthly sites with no seasonal trend. However, DO % Sat was relatively low at ADP2 compared to the other monthly monitoring sites (Figure 15). 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 ADP2 (Rounds, 2002).

DO % Sat varied between 55.5 % - 105.1 % at the quarterly monitoring sites from November 2023 to October 2024 (Figure 16). Table A 3 in Additional data section shows the DO % Sat data at all the monitoring sites from April 2016 to October 2024. DO % Sat has been variable at all monitoring sites from 2016 to date.

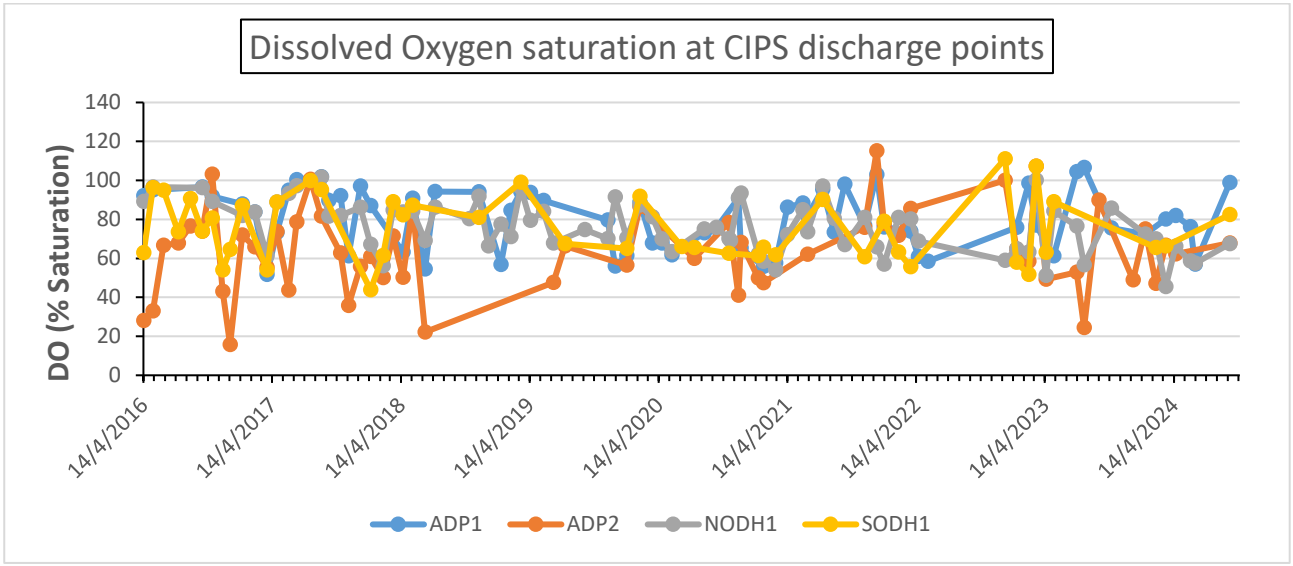

Figure 15: Dissolved Oxygen (% Saturation) at monthly monitoring sites from April 2016 to October 2024.

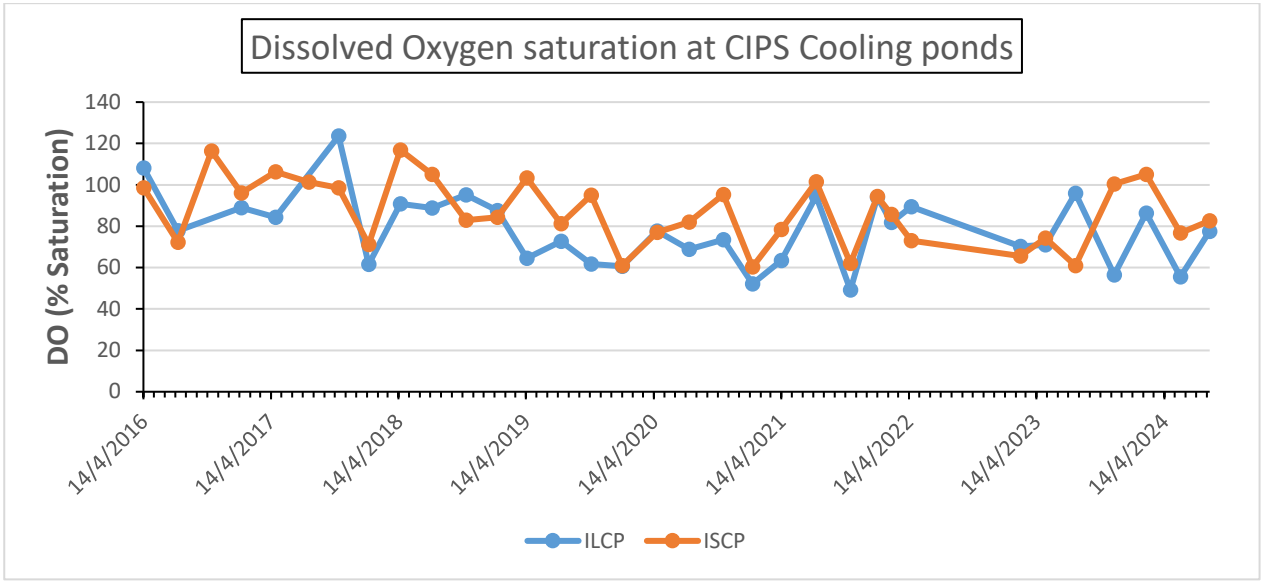

Figure 16: Dissolved Oxygen (% Saturation) at quarterly monitoring sites from April 2016 to October 2024

Electrical Conductivity (EC µs/cm)

Electrical Conductivity corrected to its equivalent at 25°C (EC_{25}) is an indirect measure of the total concentration of dissolved salts in water. The Electrical Conductivity (EC) values recorded at all WDL212-04 water monitoring sites from April 2016 to October 2024 are presented in Figure 17, Figure 18 and Table A 4(in Additional data section). WDL212-04 does not specify trigger value for EC. EC ranged between 96 – 40300 µs/cm at the monthly monitoring sites in this reporting period (November 2023 to October 2024). Historically (2016 -2024), EC is lowest at ADP2 and highest at SODH1 due to the influence of rainwater and, saltwater from the Darwin Aquaculture Centre and/or tidal influence of marine water pooling, respectively (Figure 17).

EC at the quarterly monitoring sites ranged from 156 - 3930 µs/cm from November 2023 to October 2024. EC is generally elevated during the build-up period (October -December) at these sites due to evaporation and concentration of salts. The elevation of EC during build-up at ILCP is usually high compared to ISCP, mainly due to the large surface area of ILCP for evaporation and concentration of salts. The build-up elevation of EC at ILCP is highest in 2018, 2019 and 2023 (descending order) compared to the remaining years (Figure 18).

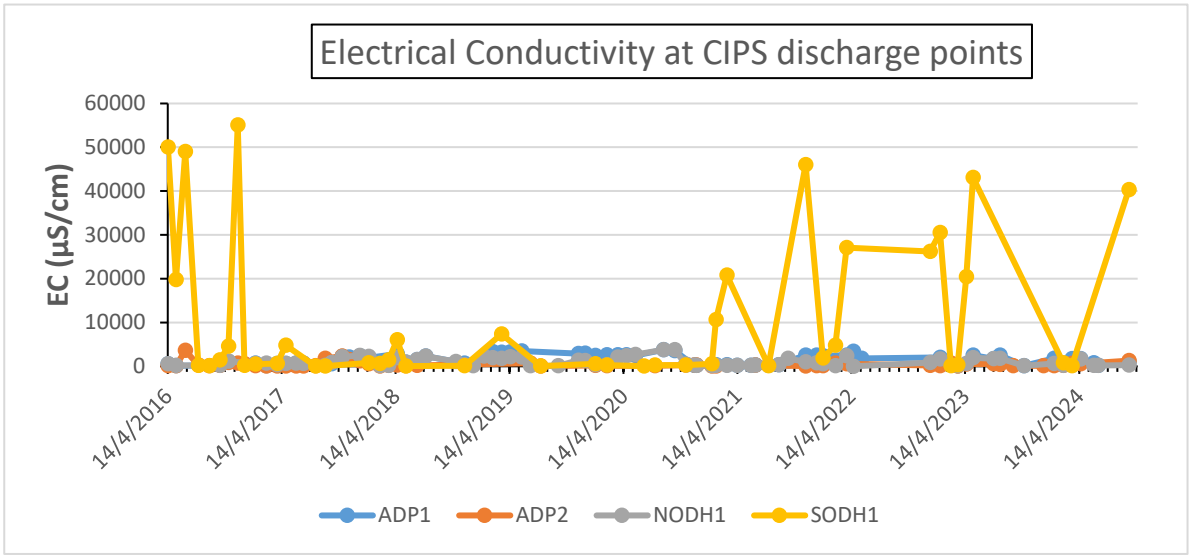

Figure 17: EC (µS) at monthly monitoring sites from April 2016 to October 2024

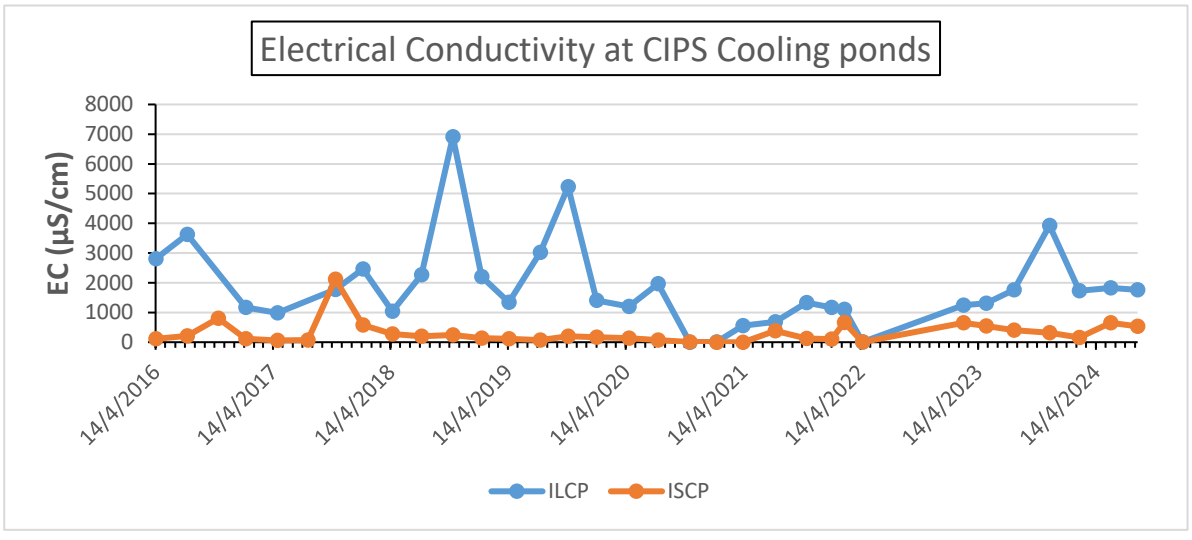

Figure 18: EC (µS) at quarterly monitoring sites from April 2016 to October 2024

Turbidity (NTU)

Recorded Turbidity data from April 2016 to October 2024 at all WDL212-04 water monitoring sites are shown in Figure 19, Figure 20 and Table A 5 (see Additional data section). No trigger value is specified for Turbidity in WDL212-04. Turbidity was variable and ranged between 0.85 – 22.1 NTU at the monthly monitoring sites from November 2023 to October 2024. Generally, Turbidity is slightly elevated during the wet season at the monthly monitoring sites. Except for the high Turbidity recorded at SODH1 on 15 December 2016 (125 NTU) and 27 February 2023 (68.3 NTU), and NODH1 on 20 November 2018 (52.2 NTU) and 21 May 2020 (131 NTU), Turbidity is generally below 20 NTU at the monthly monitoring sites from 2016 to date (Figure 19).

Turbidity was variable and ranged from 1.58 - 20 NTU at the quarterly monitoring sites for the present monitoring period (1 November 2023 to 31 October 2024). Except for the high Turbidity recorded at ISCP (20 NTU) on 22 November 2023, variability in Turbidity recorded in the 2023/24 monitoring period is comparable to that of 2022/23 but less than the remaining years from 2016 (Figure 20).

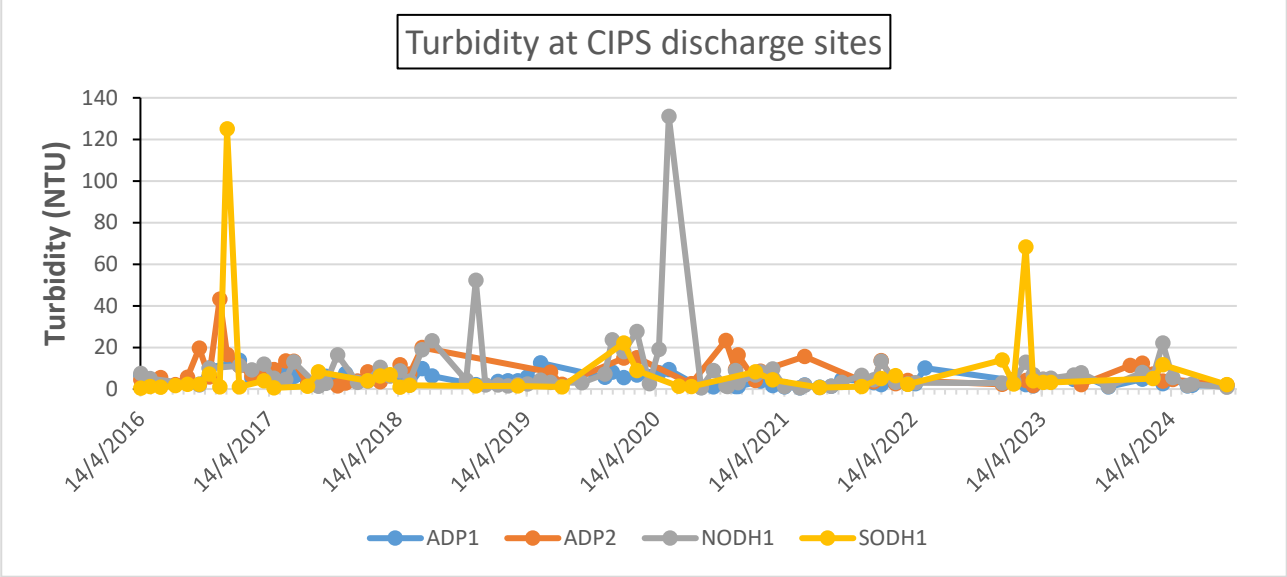

Figure 19: Turbidity (NTU) at monthly monitoring sites from April 2016 to October 2024

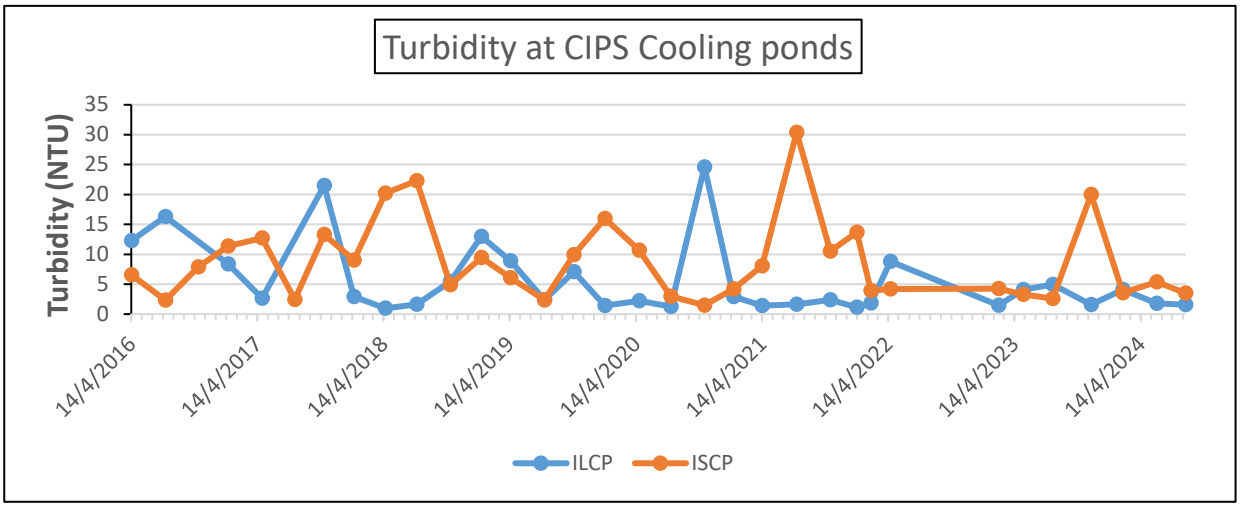

Figure 20: Turbidity (NTU) at quarterly monitoring sites from April 2016 to October 2024

Free Chlorine (mg/L)

Figure 21, Figure 22 and Table A 6 (in Additional data section) show free chlorine concentrations at all WDL212-04 water monitoring sites from October 2018 to October 2024. WDL212-04 does not specify a trigger value for this parameter. Free chlorine concentration varied from below instrument detection limit (0.01 mg/L) - 1.16 mg/L at all monitoring sites from November 2023 to October 2024. Generally, free chlorine concentration is slightly elevated at ADP1 and NODH1 due to operational dosing of cooling system water with sodium hypochlorite to prevent bacterial growth. Except for high free chlorine concentration recorded at ADP1 and NODH1 between April 2020 and March 2022, all recorded free chlorine concentration remains below 1.5 mg/L at all monitoring site from 2018 to 2024 (Figure 21 and Figure 22).

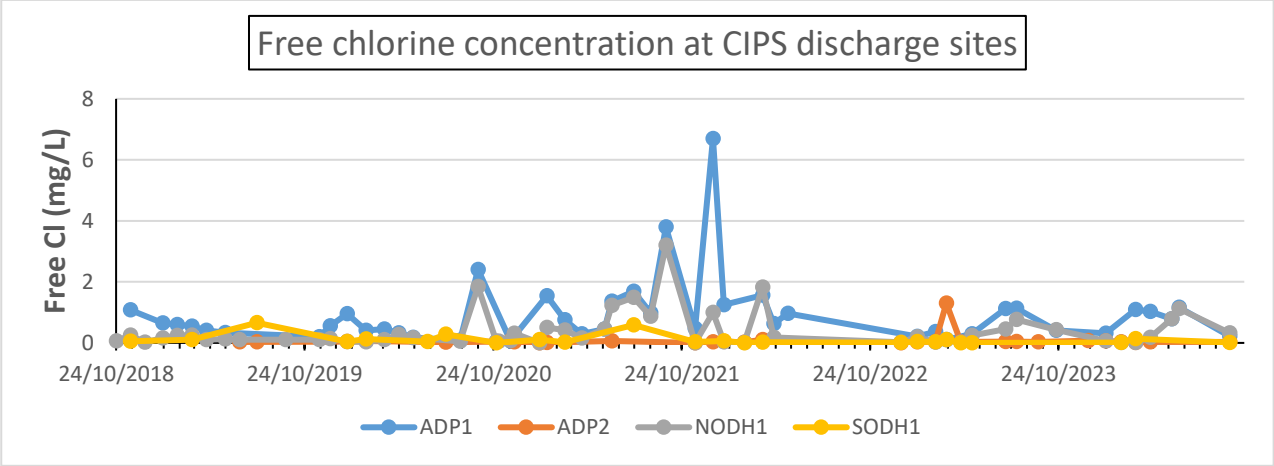

Figure 21: Free Cl (mg/L) at monthly monitoring sites from April 2016 to October 2024

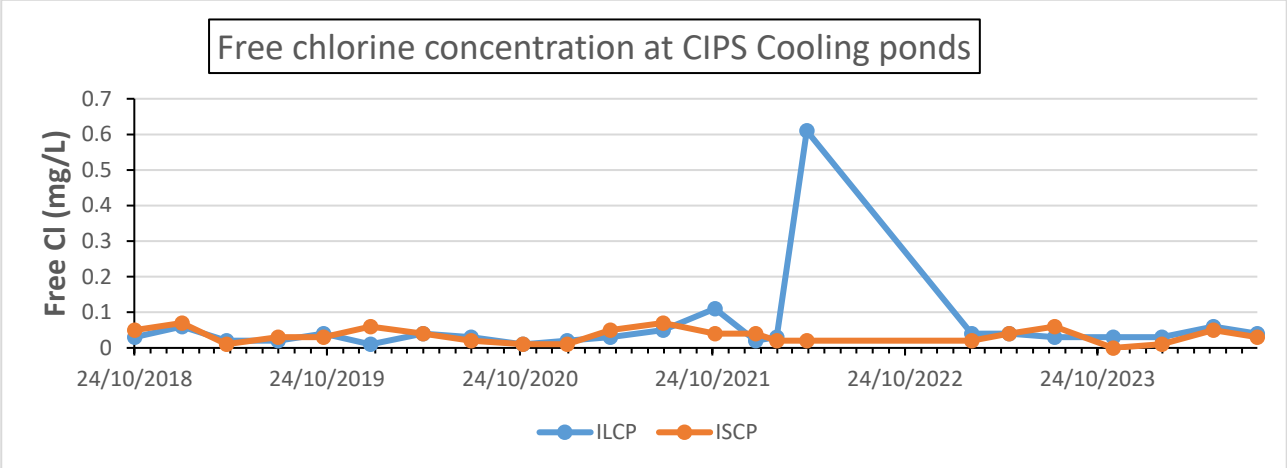

Figure 22: Free Cl (mg/L) at quarterly monitoring sites from April 2016 to October 2024

3.1.4 Results of nutrient and Total Suspended Solids analysis

Total Suspended Solids (TSS) (mg/L)

The concentration of Total Suspended Solids (TSS) recorded at the monthly and quarterly monitoring sites from April 2016 to October 2024 are shown in Figure 23, Figure 24 and Table A 7. TSS concentration at each monitoring site was compared with trigger value (25 mg/L) specified in WDL212-04. Trigger Value for TSS is shown in red colour, while the pink colour denotes the laboratory limit of reporting (LOR) (5 mg/L). Trigger Value for TSS in water are imposed at ADP1, ADP2, NODH1 and SODH1, but only exceedance of trigger value to discharges at ADP1 and ADP2 are applicable for WDL212-04 incident notification.

In this reporting year (November 2023 to October 2024), TSS ranged from below LOR (< 5) – 40 mg/L at the monthly monitoring sites. Apart from TSS recorded at SODH1 (40 mg/L) on 19 September 2024, TSS at the monthly monitoring sites, especially the compliance points (ADP1 and ADP2) did not exceed the trigger value and as such, no notifiable incident was reported for TSS. The EC (40300 µS/cm) of sampled water at SODH1 on 19 September 2024 indicate marine origin and not from electricity generation at CIPS. The high tide on the day at 0656 hrs of 7.68 m sits above the height of the stormwater drain at SODH1. As such, marine water entered the drain. Sampling undertaken at 0945 hrs has likely captured this marine water. Monitoring of the marine environment undertaken on 21 August 2024 recorded high TSS (51.0 mg/L and 64.0 mg/L) near SODH1, on similar tidal conditions (i.e., large tidal movements increase suspended solids). Except for TSS (40 mg/L) recorded at SODH1 on 19 September 2024, TSS at the monthly monitoring sites in this monitoring year is showing a decreasing trend compared to previous years from 2016 (Figure 23).

TSS in the quarterly monitoring sites ranged from below LOR (< 5) – 31 mg/L in this reporting period (November 2023 to October 2024). TSS concentration is usually below the trigger value (25 mg/L) specified in WDL212-04 at these monitoring sites. Except for TSS of 31 mg/L recorded at ISCP on 22 November 2023, all TSS concentrations are below the trigger value from 22 July 2021 (Figure 24).

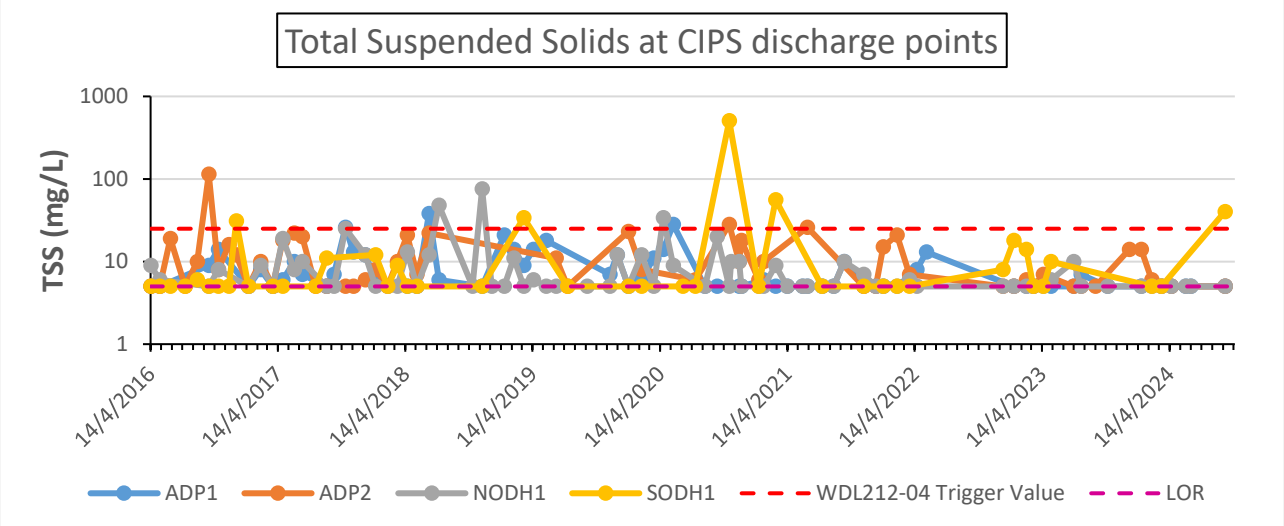

Figure 23: Total Suspended Solids (TSS, mg/L) at monthly monitoring sites from April 2016 to October 2024

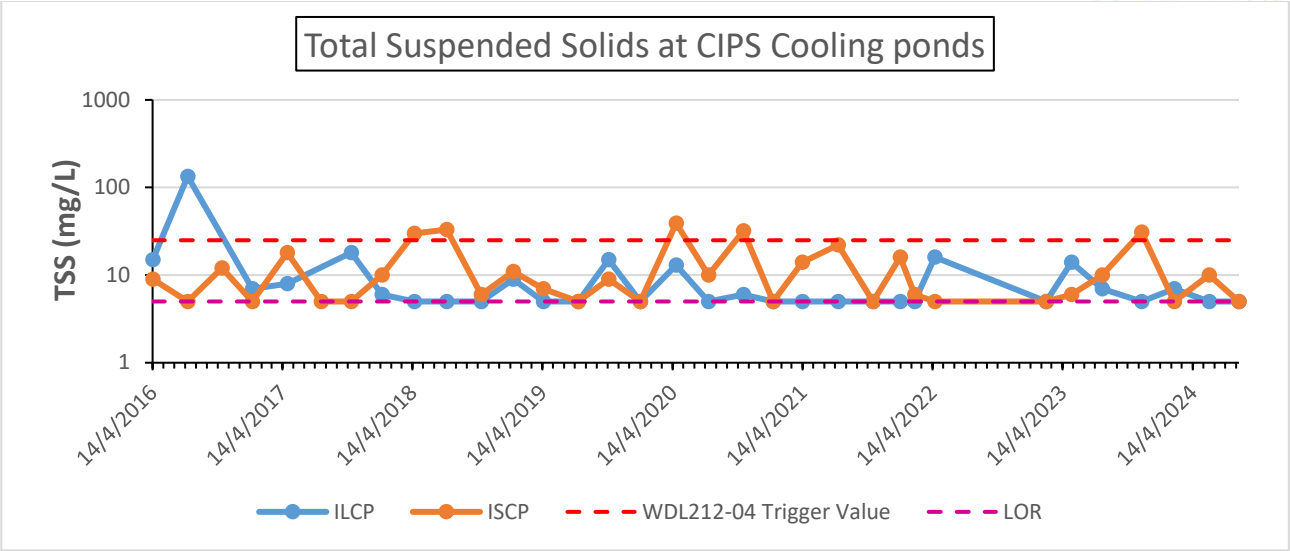

Figure 24 Total Suspended Solids (TSS, mg/L) at quarterly monitoring sites from April 2016 to October 2024

Total Phosphorous (TP) (mg/L)

Figure 25, Figure 26 and Table A 8 show concentration of Total Phosphorous (TP) at the monthly and quarterly monitoring sites from April 2016 to October 2024. TP concentrations were compared with trigger value (0.3 mg/L) specified in WDL212-04. Trigger Value for TP is shown in doted red line, while the doted pink line denotes LOR (0.01 mg/L). Trigger Value for TP in water are imposed at ADP1, ADP2, NODH1 and SODH1, but only exceedance of trigger value at ADP1 and ADP2 are applicable for WDL212-04 incident notification.

TP ranged from below LOR (< 0.01) – 0.27 mg/L at the monthly monitoring sites in this reporting period (November 2023 to October 2024). TP was variable and below TP trigger value at all monthly monitoring sites throughout this reporting period. As such, no notification was reported for TP in this year. Generally, TP is showing a decreasing trend in this year at all monthly monitoring sites compared to the previous years from 2016 (Figure 25).

In this reporting year (November 2023 to October 2024), TP varied from below LOR (< 0.01) – 0.14 mg/L at the quarterly monitoring sites. All TP concentrations at the quarterly sites are below the trigger value and showing a decreasing trend in this reporting year. Apart from TP (0.65 mg/L) recorded at ILCP on 13 April 2021, all TP concentrations at the quarterly monitoring sites are variable and below the trigger value (Figure 26).

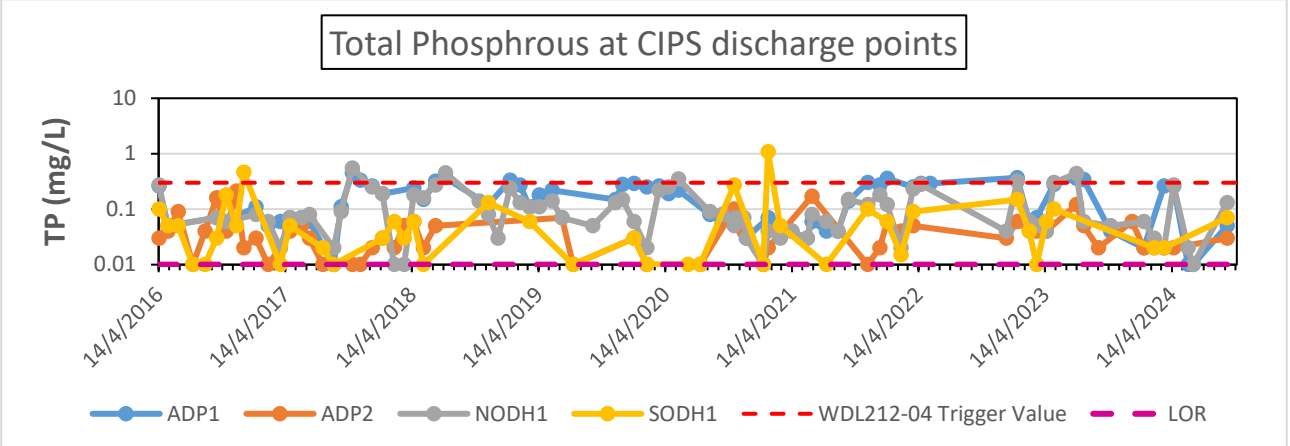

Figure 25: Total Phosphorous concentration (TP, mg/L) at monthly monitoring sites from April 2016 to October 2024

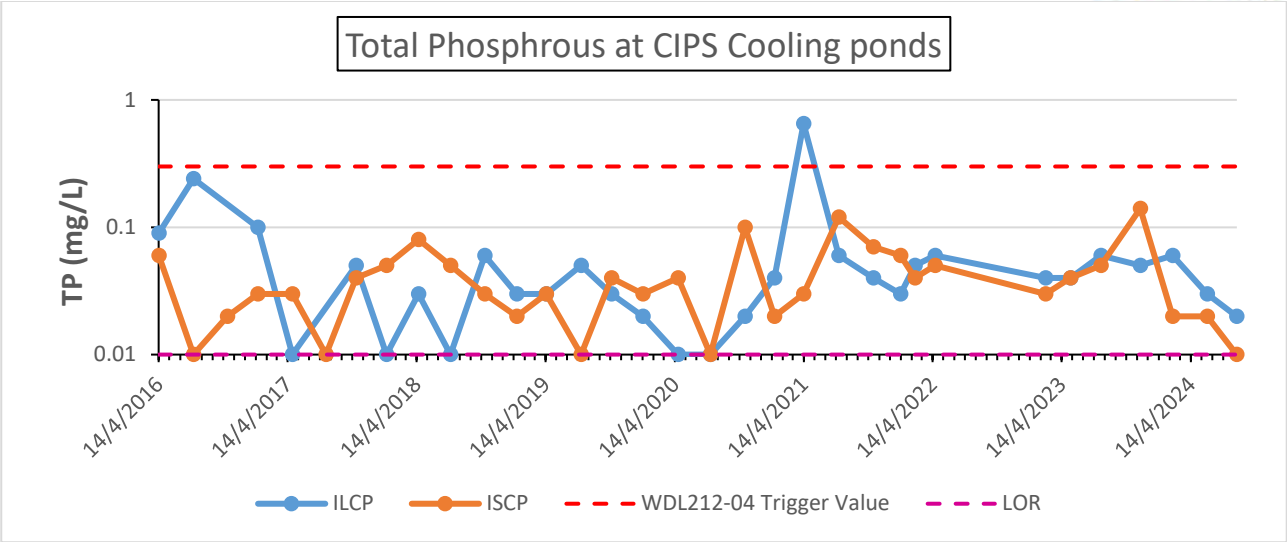

Figure 26: Total Phosphorous concentration (TP, mg/L) at quarterly monitoring sites from April 2016 to October 2024

Total Nitrogen (TN) (mg/L)

Total Nitrogen (TN) concentration at the monthly and quarterly monitoring sites from April 2016 to October 2024 are shown in Figure 27, Figure 28 and Table A 9. Trigger Value for TN (3.5 mg/L) stated in WDL212-04, and LOR (0.1 mg/L) are shown in doted red and pink lines, respectively. Trigger Value for TN in water is imposed at ADP1, ADP2, NODH1 and SODH1, but only exceedance of trigger value at ADP1 and ADP2 are applicable for WDL212-04 incident notification.

TN concentrations at the monthly monitoring sites ranged from 0.3 – **4.1** mg/L in this reporting period (November 2023 to October 2024). Except for TN of **4.1** mg/L recorded at ADP2 on 22 February 2024, all TN concentrations were below the trigger value at the monthly sites in this reporting year. The exceedance at ADP2 was not three or more times the TN trigger value nor recorded on three consecutive sampling occasions. Therefore, there was no notifiable incident at the compliance points (ADP1 and ADP2) for TN within the monitoring period (November 2023 to October 2024). Historically, TN concentrations are variable at the monthly monitoring sites. Apart from the 2021/22 monitoring year, the variability in TN is less in this reporting period compared to the other years starting from 2016 (Figure 27).

TN concentrations range from 0.9 – 3.9 mg/L at the quarterly monitoring sites in this reporting period (November 2023 to October 2024). TN was relatively stable and below TN trigger value at ILCP but variable at ISCP and exceeded the trigger value on two occasions (Figure 28). However, no notification is required for exceedance at ISCP.

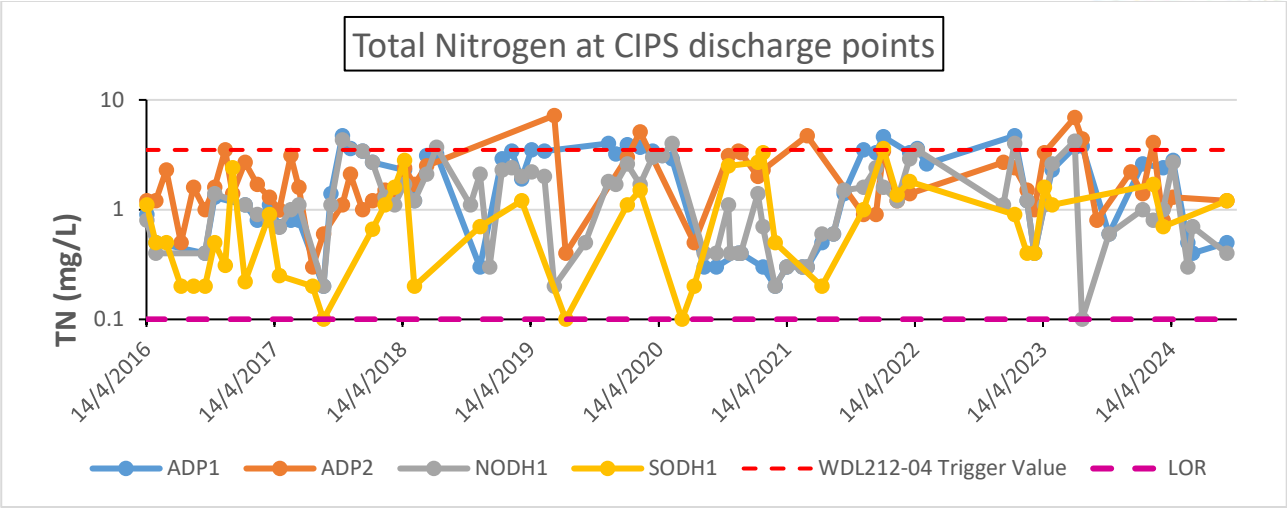

Figure 27: Total Nitrogen concentration (TN, mg/L) at monthly monitoring sites from April 2016 to October 2024

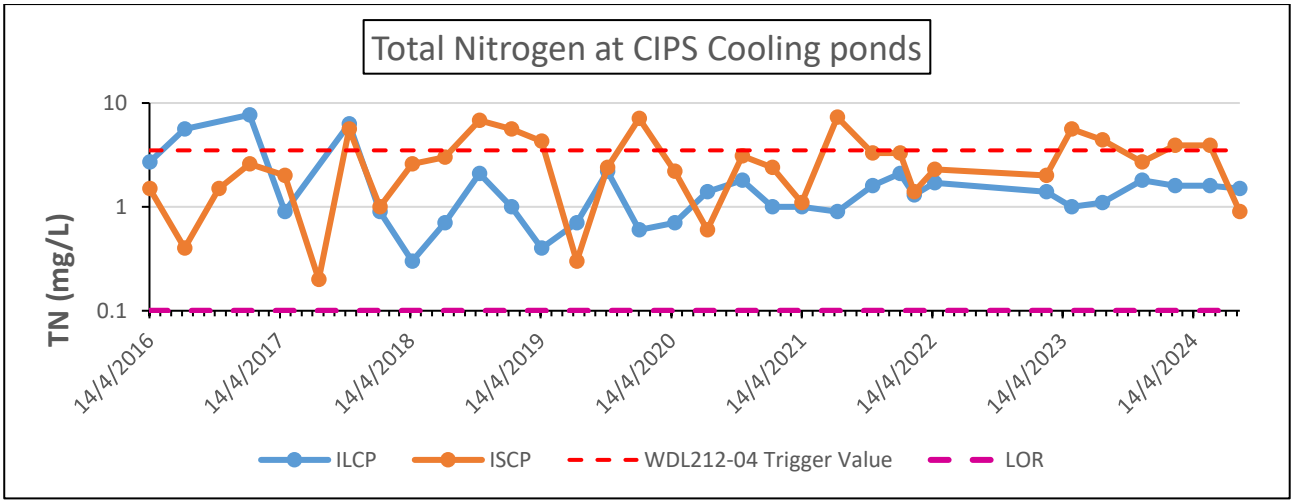

Figure 28: Total Nitrogen concentration (TN, mg/L) at quarterly monitoring sites from April 2016 to October 2024

3.1.5 Results of metal analysis

Metal concentrations at the monthly and quarterly monitoring sites from April 2016 to October 2024 are shown from Figure 29 to Figure 40 and Table A 10 to Table A 19 (see Additional data section). Water samples were analysed for 10 metal elements (Total and Filtered) as part of the monitoring program. As detailed in Appendix 2 (Page 20) of WDL212-03; "*Trigger Values specified in WDL212-04 for metals and metalloids apply to filtered/dissolved fraction only*". No trigger value is imposed on arsenic (As) in water under WDL212-04. Trigger Value for filtered Al and Zn in water are imposed at ADP1, ADP2, NODH1 and SODH1. Trigger Values for all other filtered metals in water are imposed at only ADP1 and ADP2. However, only exceedance of trigger values at ADP1 and ADP2 for all filtered metals are applicable for WDL212-04 incident notification. Before 18 July 2024, wastewater discharge at CIPS was managed under WDL212-03 with Zn trigger value of 21 µg/L, which is imposed at only ADP1 and ADP2. Trigger value was not imposed for Al at any site under WDL212-03. The monitoring year starts from 1 November 2023 and ends on 31 October 2024.

Filtered Al (Figure 29, Table A10 to Table A 14) and total Al (Table A 15 to Table A 19) concentrations were variable at all monthly monitoring sites throughout this year. Filtered Al concentration was generally below the Al trigger value (82 µg/L) at all monthly monitoring sites except for 220 µg/L each recorded at ADP2 on

21 March 2024 and 18 April 2024. However, these do not constitute non-conformance as the monitoring were undertaken under WDL212-03. Apart from these two elevated concentrations at ADP2, filtered Al concentration was low in this monitoring period at the monthly monitoring sites compared to the previous years from 2026. Toal Al concentration has been variable with intermittent elevation at ADP2, NODH1 and SODH1 throughout the years. Filtered Al concentration was relatively stable at ILCP (Figure 39) but variable at ISCP (Figure 40) throughout the years.

Filtered As (Figure 30, Figure 39, Figure 40, Table A 10 to Table A 14), Cd (Figure 31, Figure 39, Figure 40 Table A 10 to Table A 14), Cr (Figure 32, Figure 39, Figure 40, Table A 10 to Table A 14), Co (Figure 33, Figure 39, Figure 40, Table A 10 to Table A 14), Pb (Figure 35, Figure 39, Figure 40, Table A 10 to Table A 14), Hg (Figure 36, Figure 39, Figure 40, Table A 10 to Table A 14), and Ni (Figure 37, Figure 39, Figure 40, Table A 10 to Table A 14) concentrations at all water monitoring sites were equal to or below 1 µg/L in this monitoring period, except for As of 3 µg/L recorded at NODH1 on 18 April 2024, Cr of 3 µg/L at ADP1 (23 December 2023, 21 March 2024), 4 µg/L and 3 µg/L at ADP1 and NODH1, respectively on 18 April 2024, Pb of 2 µg/L at ISCP on 22 February 2024 and Ni of 4 µg/L and 2 µg/L both recorded at ISCP on 22 February 2024 and 30 May 2024, respectively. None of these filtered metals exceeded their specified trigger value in WDL212-04 in this monitoring period. Filtered As, Cd, Cr, Co, Pb, Hg and Ni were low and stable in this monitoring period compared the previous years from 2016 at all monitoring sites. Total As, Cd, Cr, Co, Pb, Hg and Ni concentrations (Table A 15 to Table A 19) followed similar trend and were either equal or higher than corresponding filtered metal at all monitoring sites throughout the years.

In this monitoring period, filtered Cu (Figure 34, Figure 39, Figure 40, Table A 10 to Table A 14) concentration was variable at all water monitoring sites especially at ADP1 and ISCP. Filtered Cu did not exceed its trigger value of 8 µg/L at any site in this monitoring year. Filtered Cu concentration was low at all sites in this monitoring year compared to the previous years from 2016. Total Cu concentration (Table A 15 to Table A 19) followed similar trend with occasional elevation above 8 µg/L at ADP2 and ISCP.

Apart from ILCP, filtered Zn concentration at all water monitoring sites were variable in this monitoring period (Figure 38, Figure 39, Figure 40, Table A 10 to Table A 14). Except ISCP, filtered Zn concentration at all water monitoring sites were comparable or lower than the previous years. Filtered Zn concentration at ADP2 on 20 December 2023 (**33** µg/L), 23 January 2024 (**48** µg/L) and 22 February 2024 (**346** µg/L), NODH1 on 22 February 2024 (**73** µg/L) and 21 March 2024 (**62** µg/L), and ISCP on 23 November 2023 (**51** µg/L) and 22 February 2024 (**674** µg/L) exceeded Zn trigger value of 21 µg/L under WDL212-03 in this monitoring period. Out of these, only the exceedance at ADP2 on 22 February 2024 required notification under WDL212-03. ADP2 received water from ISCP. Evaporation of water and concentration of Zinc in the settling water and sediment in ISCP during the build-up season and remobilisation of Zinc due to low water pH at ISCP (5.55) on the day of monitoring remains the likely contributing factor to the elevated Filtered Zn at ADP2. Zinc is used as an anti-wear agent in oils and lubricants. ISCP receives wastewater from the neutralisation basin and oil/water separator. The high filtered Zn concentration at ADP2 was notified to the NT EPA on 4 March 2024. It is worth to note that a one-off filtered Zn concentration of 346 µg/L at either ADP1 or ADP2 does not constitute a non-compliance in the current WDL212-04 with filterable Zn trigger value of 152 µg/L. Total Zn concentration (Table A 15 to Table A 19) was also variable with frequent elevation above Zn trigger value in WDL212-03 at ADP2, NODH1, SODH1 and ISCP.

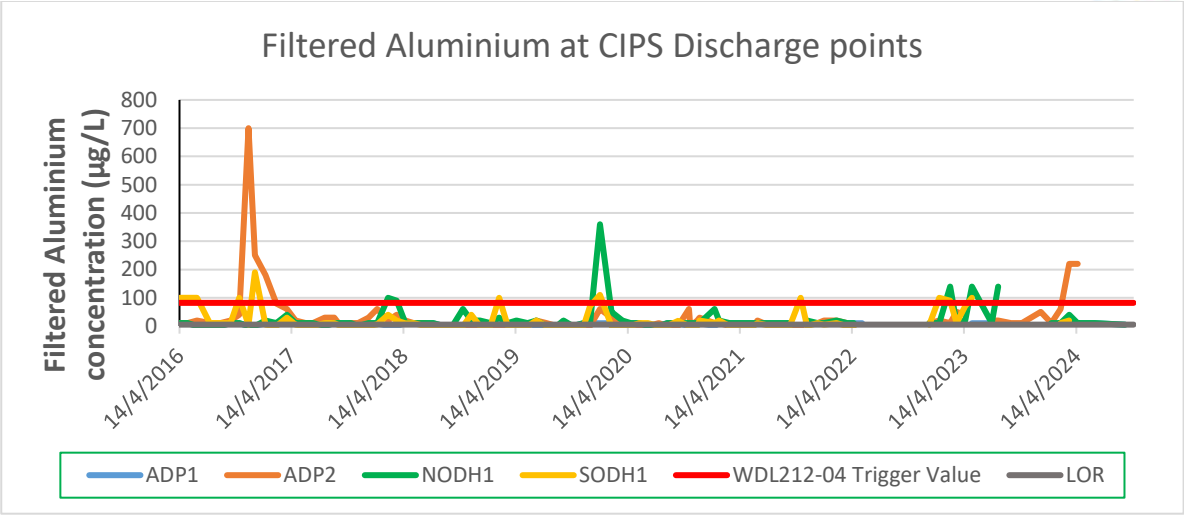

Figure 29: Filtered aluminium concentration at the monthly monitoring sites from April 2016 to October 2024

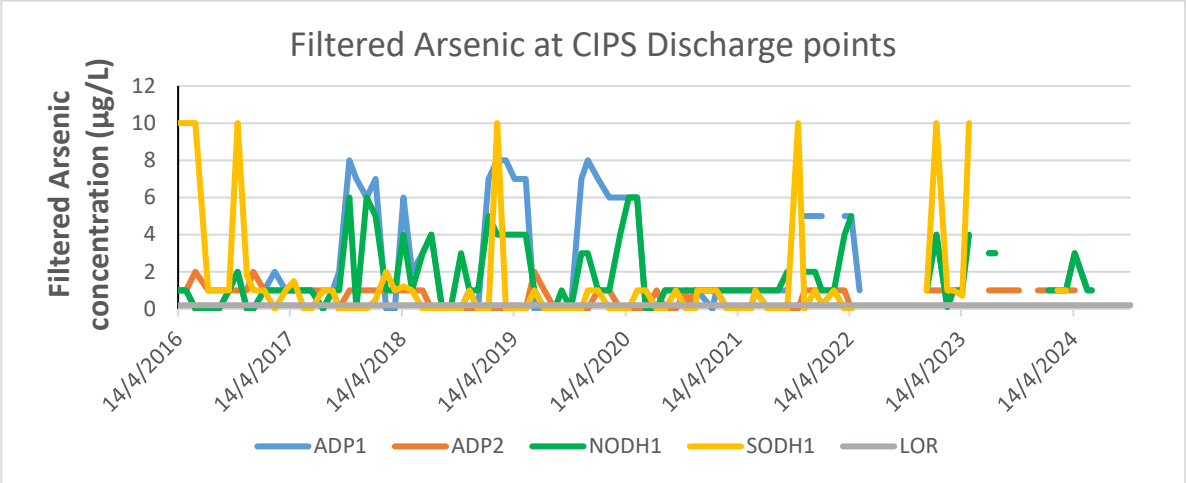

Figure 30: Filtered arsenic concentration at the monthly monitoring sites from April 2016 to October 2024

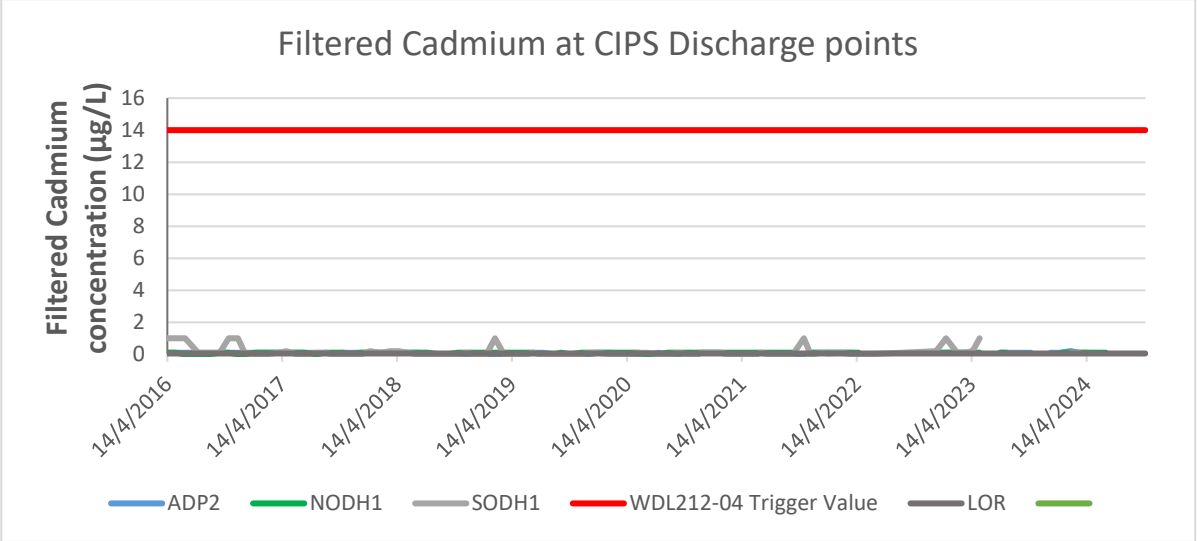

Figure 31: Filtered cadmium concentration at the monthly monitoring sites from April 2016 to October 2024

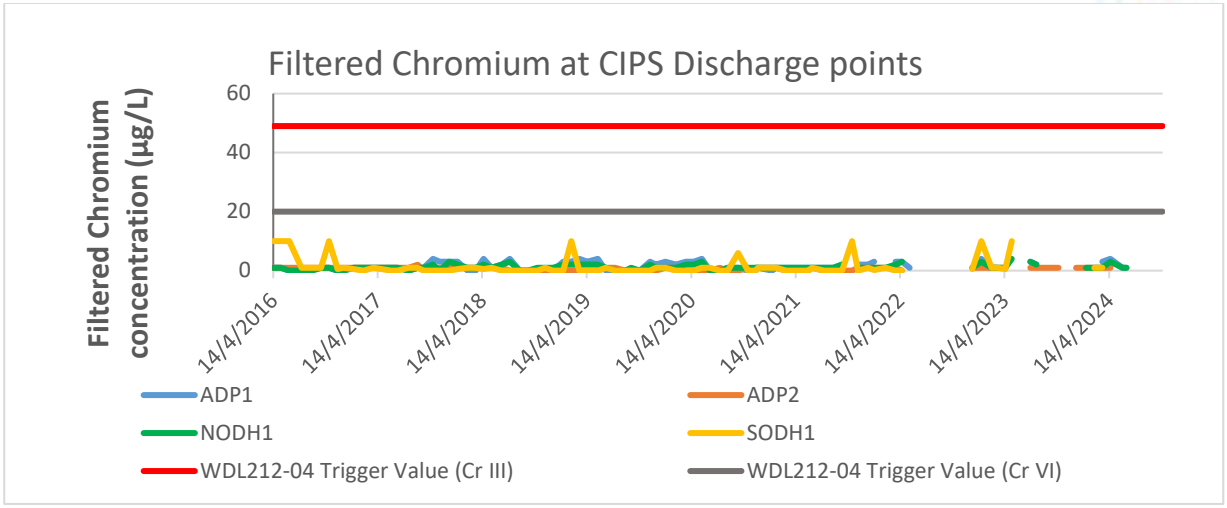

Figure 32: Filtered chromium concentration at the monthly monitoring sites from April 2016 to October 2024

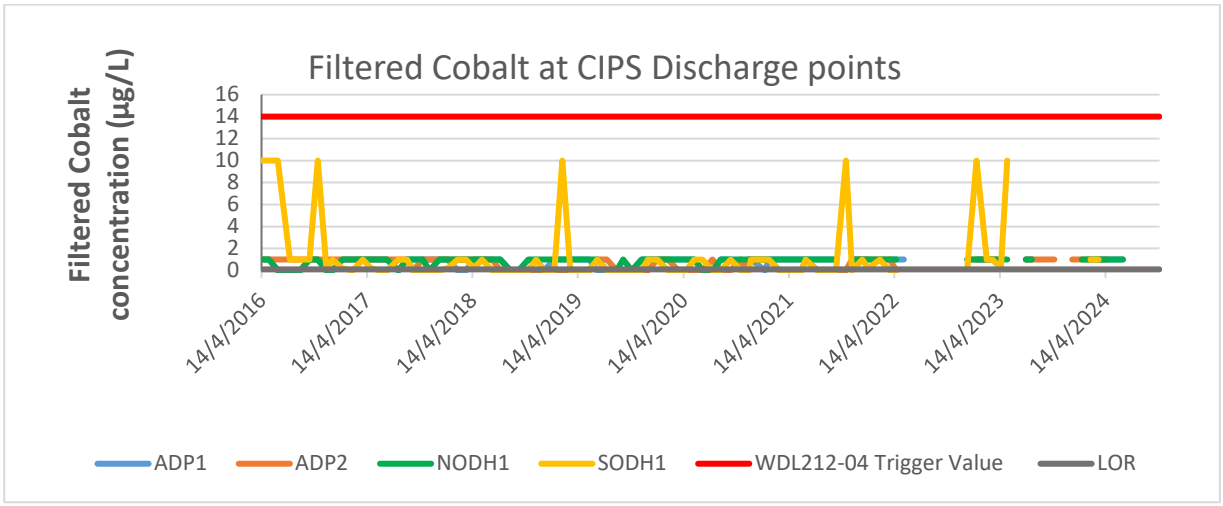

Figure 33: Filtered cobalt concentration at the monthly monitoring sites from April 2016 to October 2024

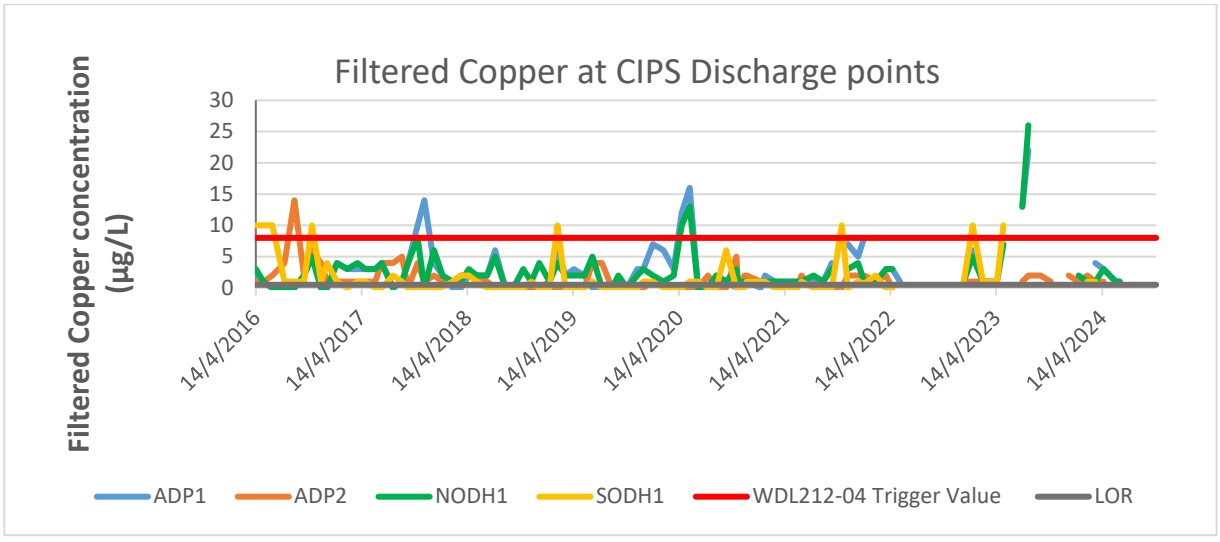

Figure 34: Filtered copper concentration at the monthly monitoring sites from April 2016 to October 2024

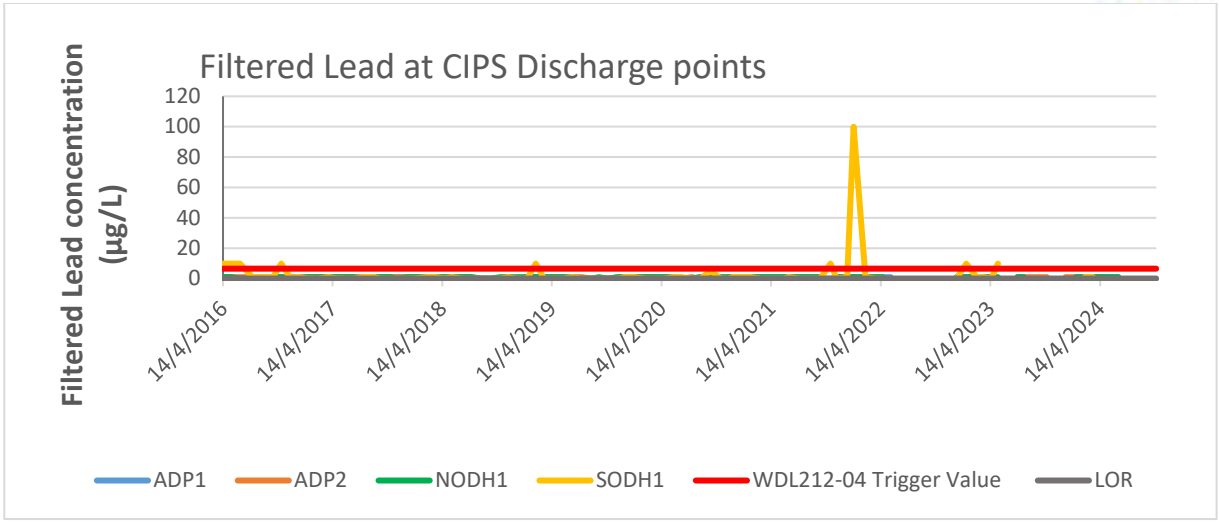

Figure 35: Filtered lead concentration at the monthly monitoring sites from April 2016 to October 2024

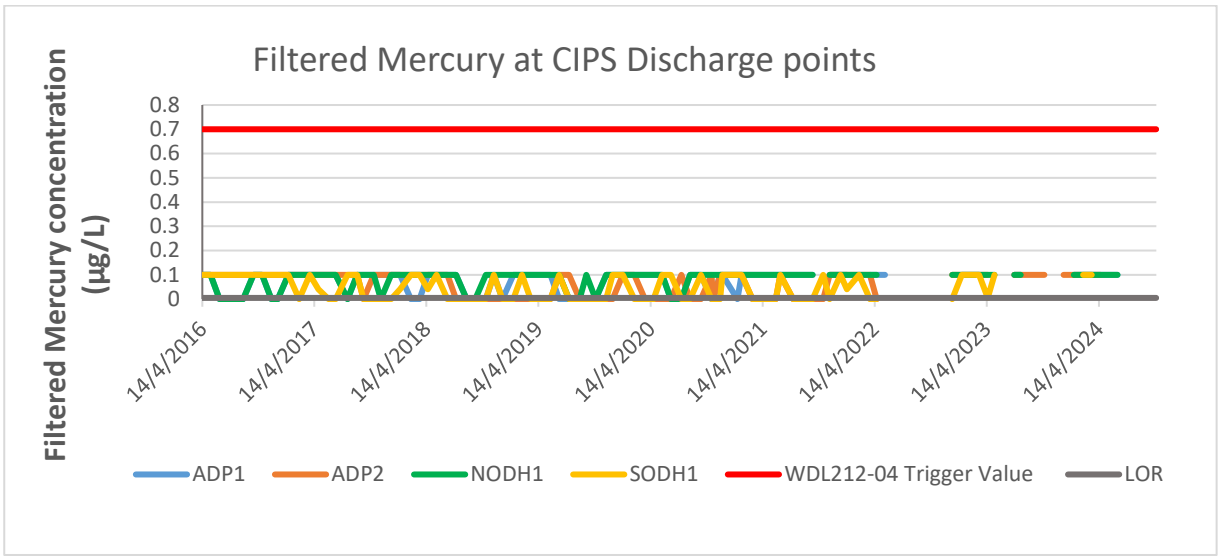

Figure 36: Filtered mercury concentration at the monthly monitoring sites from April 2016 to October 2024

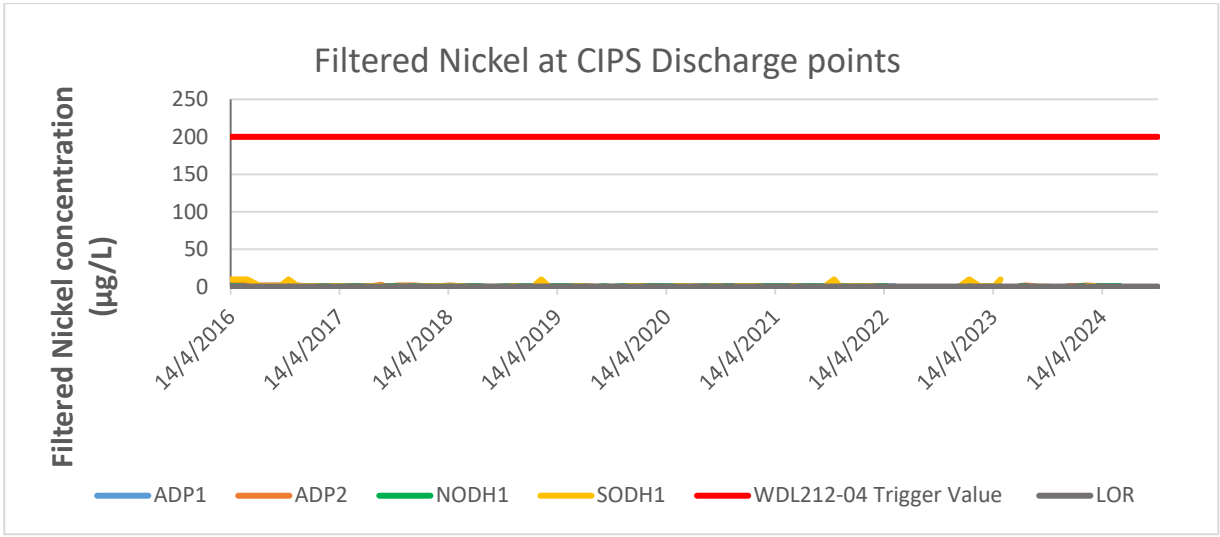

Figure 37: Filtered nickel concentration at the monthly monitoring sites from April 2016 to October 2024

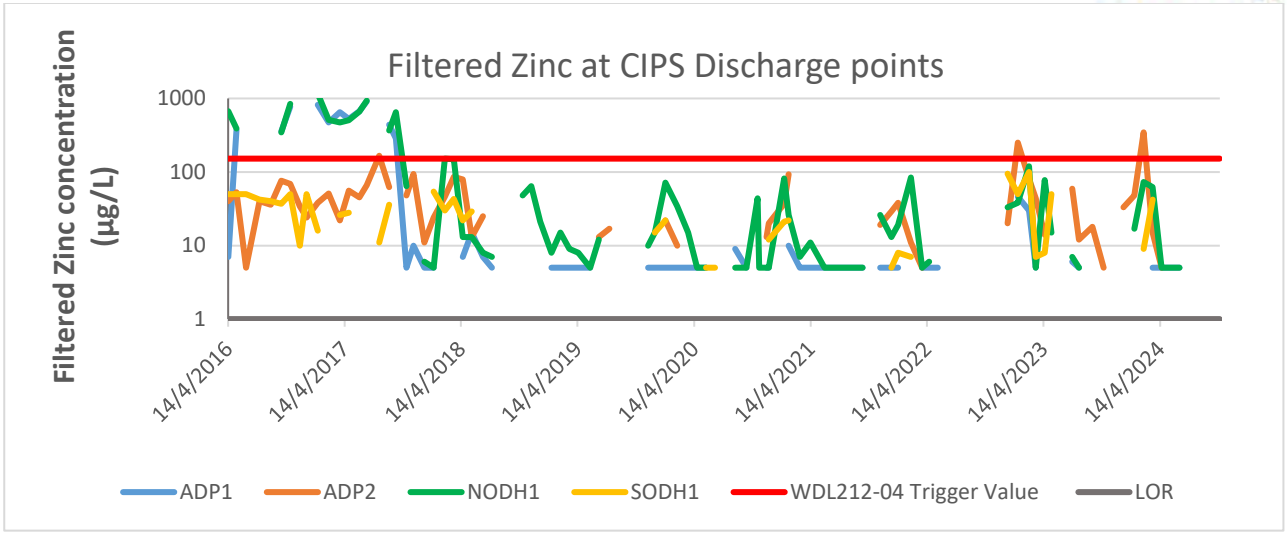

Figure 38: Filtered zinc concentration at the monthly monitoring sites from April 2016 to October 2024

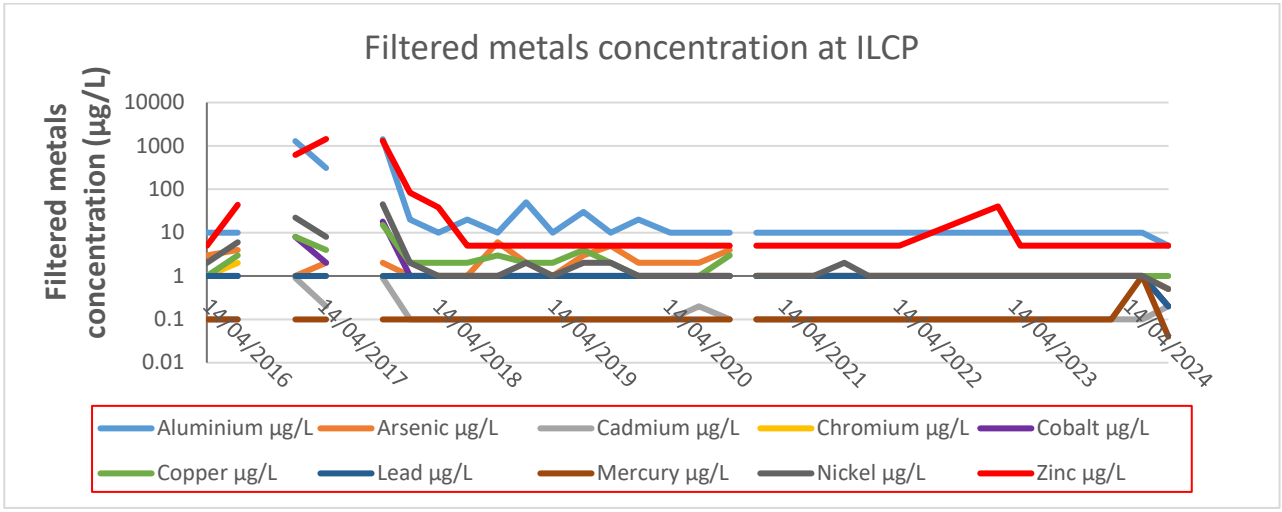

Figure 39: Filtered metal concentrations at the quarterly monitoring sites from April 2016 to October 2024

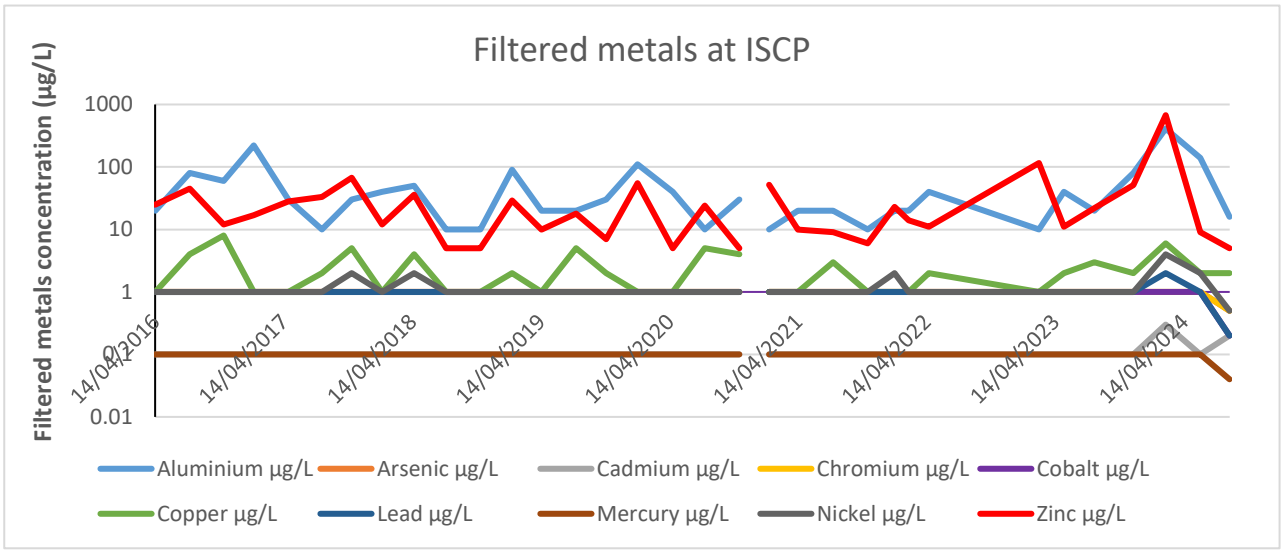

Figure 40: Filtered metal concentrations at the quarterly monitoring sites from April 2016 to October 2024

3.1.6 Results of hydrocarbons analysis

Hydrocarbons concentrations at all the CIPS surface water monitoring sites are given in Table A 20 to Table A 24 in the additional data section. Trigger values are not applicable for hydrocarbons in water under WDL212-04. Polycyclic Aromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPH), Benzene, Ethylbenzene, Toluene, and Xylenes (BTEX) are analysed in water at all monitoring sites. All hydrocarbons were below the LOR for each chemical at all CIPS water monitoring sites except TPH recorded at ADP2 and ISCP. At ADP2, TPH fractions C15 – C28 (300 µg/L) was recorded on 20 December 2023, C10 – C14 (300 µg/L), C15 – C28 (400 µg/L) and C29 – C36 (140 µg/L) were recorded on 18 April 2024. While at ISCP, TPH fractions C15 – C28 (580 µg/L) and C29 – C36 (100 µg/L) as well as C10 – C14 (650 µg/L) and C15 – C28 (440 µg/L) were detected on 22 November 2023 and 30 May 2024, respectively. The detected TPH concentrations can be attributed to diesel range organics (DRO) (C10 – C28 fraction), and motor oils (C29 – C36 fraction) (Collins, 2007). CIPS is classified as a heavy industrial site which uses diesel and mineral oils for power generation and equipment maintenance. Wastewater from CIPS site is directed to oil/water separator to remove all hydrocarbons. ISCP receives effluent from the oil/water separator and discharge to ADP2 (Figure 4). This suggest that the oil/water separator could not trap all the TPH flowing through it.

However, the concentration of key hydrocarbons of environmental interest BTEX and PAHs were all below their respective laboratory LOR at all sites throughout this year.

Contamination load

3.1.7 Contamination loads at ADP1 and ADP2

Monthly contamination loads for nutrients, metals and hydrocarbons at ADP1 and ADP2 for this reporting year (1 November 2023 to 31 October 2024) are shown in Table 3 and Table 4, respectively. 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, 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), aluminium (Al), arsenic (As), chromium (Cr), copper (Cu), and zinc (Zn) at ADP1, all other reported contamination loads for contaminants at ADP1 in this year were estimated with the absolute value of their respective LOR. At ADP2, only the absolute value of PAHs and BTEX were used in the estimation of contamination loads throughout the year.

Compared to the previous year, contamination load at ADP1 for this year increased by a least factor of 2.1 for filtered Cu and most factor of 9.6 for total Zn. However, the estimated contamination load at ADP1 for this year may be somewhat biased due to the erroneously high discharge data recorded from 12 March 2024 to 30 April 2024 (section 3.1.1).

Since no discharge data was recorded at ADP2 for the previous year, estimated contamination loads at this site could not be compared. Apart from total Al, total Cd, total Co, total Pb and total Ni, the estimated

contamination loads at ADP1 were generally higher compared to those at ADP2. This is largely due to the small volume of water discharged at ADP2 (9443.13 kL) compared to ADP1 (122200 kL).

Table 3: Annual and monthly contamination loads for nutrients, metals and hydrocarbons at ADP1 from November 2023 to October 2024.

	Contaminant	Unit	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	Oct-24	Annual
Nutrients and Suspended Solids	Total Nitrogen (TN)	g		3865.60	1922.14	6931.76	172609.92	2656.28	185329.42
	Total Phosphorus (TP)	g		61.23	36.67	479.47	16028.06	200.63	16605.43
	Total Suspended Solids (TSS)	g		9103.85	967.80	24136.46	308232.00	7186.50	342440.11
Filtered Metals	Aluminium	g		18.21	1.94	48.27	616.46	165.809	684.88
	Arsenic	g		4.86	4.73	1.34	184.94	1.4373	195.87
	Cadmium	g		0.18	0.02	0.48	6.16	0.14373	6.85
	Chromium	g		4.22	2.61	6.73	246.59	2.869652	260.14
	Cobalt	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Copper	g		5.42	3.81	7.67	184.94	3.585828	201.85
	Lead	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Mercury	g		0.18	0.02	0.48	6.16	0.14373	6.85
	Nickel	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Zinc	g		12.71	4.59	24.14	308.23	7.1865	349.66
Total Metals	Aluminium	g		18.21	1.94	57.76	1849.39	172.9708	1927.30
	Arsenic	g		5.42	3.81	6.73	184.94	2.869652	200.90
	Cadmium	g		0.18	0.02	0.48	6.16	0.14373	6.85
	Chromium	g		4.22	2.61	7.67	184.94	3.585828	199.44
	Cobalt	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Copper	g		9.02	7.44	4.83	431.52	2.158424	452.81
	Lead	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Mercury	g		0.18	0.02	0.48	6.16	0.14373	6.85
	Nickel	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Zinc	g		22.31	14.25	24.14	1294.57	16.56111	1355.27
Polycyclic Aromatic Hydrocarbons	Naphthalene	g		1.82	0.19	8.62	61.65	1.4373	72.28
	Acenaphthylene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Acenaphthene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Fluorene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Phenanthrene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Anthracene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Fluoranthene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Pyrene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Benz(a)anthracene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Chrysene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Benzo(b+j)fluoranthene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Benzo(k)fluoranthene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Benzo(a)pyrene	g		0.91	0.10	2.41	30.82	0.71865	34.24

	Contaminant	Unit	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	Oct-24	Annual
	Indeno(1.2.3.cd)pyrene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Dibenz(a.h)anthracene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Benzo(g.h.i)perylene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Sum of polycyclic aromatic hydrocarbons	g		0.91	0.10	2.41	30.82	0.71865	34.24
	Benzo(a)pyrene TEQ (zero)	g		0.91	0.10	2.41	30.82	0.71865	34.24
Total Petroleum Hydrocarbons	C6 - C9 Fraction	g		36.42	3.87	96.55	1232.93	28.746	1369.76
	C10 - C14 Fraction	g		91.04	9.68	241.36	3082.32	252.146	3424.40
	C15 - C28 Fraction	g		182.08	19.36	482.73	6164.64	360.0672	6848.80
	C29 - C36 Fraction	g		91.04	9.68	241.36	3082.32	136.7661	3424.40
	C10 - C36 Fraction (sum)	g		91.04	9.68	241.36	3082.32	641.5529	3424.40
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	g		36.42	3.87	96.55	1232.93	28.746	1369.76
	C6 - C10 Fraction minus BTEX	g		36.42	3.87	96.55	1232.93	28.746	1369.76
	C10 - C16 Fraction	g		182.08	19.36	482.73	6164.64	273.5323	6848.80
	C16 - C34 Fraction	g		182.08	19.36	482.73	6164.64	424.9683	6848.80
	C34 - C40 Fraction	g		182.08	19.36	482.73	6164.64	150.9412	6848.80
	C10 - C40 Fraction (sum)	g		182.08	19.36	482.73	6164.64	706.2066	6848.80
	C10 - C16 Fraction minus Naphthalene	g		182.08	19.36	482.73	6164.64	273.5323	6848.80
BTEXN	Benzene	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Toluene	g		3.64	0.39	9.65	123.29	2.8746	136.98
	Ethylbenzene	g		3.64	0.39	9.65	123.29	2.8746	136.98
	meta- & para-Xylene	g		3.64	0.39	9.65	123.29	2.8746	136.98
	ortho-Xylene	g		3.64	0.39	9.65	123.29	2.8746	136.98
	Total Xylenes	g		3.64	0.39	9.65	123.29	2.8746	136.98
	Sum of BTEX	g		1.82	0.19	4.83	61.65	1.4373	68.49
	Naphthalene	g		9.10	0.97	24.14	308.23	7.1865	342.44

Table 4: Annual and monthly contamination loads for nutrients, metals and hydrocarbons at ADP2 from November 2023 to October 2024.

	Contaminant	Unit	Mar-24	Apr-24	Sep-24	Oct-24	Annual
Nutrients and Suspended Solids	Total Nitrogen (TN)	g	583.71	1062.79	8195.14	445.8541	9841.64
	Total Phosphorus (TP)	g	30.93	13.20	204.51	1.419587	248.64
	Total Suspended Solids (TSS)	g	7533.71	3300.90	34134.00	1533.5	44968.61
Filtered Metals	Aluminium	g	371.87	145.24	47.33	168.3624	564.44
	Arsenic	g	1.55	0.66	4.11	0.495277	6.31
	Cadmium	g	0.13	0.07	0.34	0.054242	0.54

	Contaminant	Unit	Mar-24	Apr-24	Sep-24	Oct-24	Annual
	Chromium	g	1.55	0.66	1.39	0.683853	3.60
	Cobalt	g	1.55	0.66	0.71	0.730997	2.92
	Copper	g	1.35	0.66	8.19	0.212412	10.19
	Lead	g	1.55	0.66	0.71	0.730997	2.92
	Mercury	g	0.15	0.07	0.10	0.071214	0.32
	Nickel	g	1.35	0.66	3.43	0.542421	5.44
	Zinc	g	42.34	0.79	27.34	2.004941	70.47
Total Metals	Aluminium	g	2169.01	292.52	60.92	167.4196	2522.45
	Arsenic	g	55.62	12.02	4.11	0.495277	71.75
	Cadmium	g	8.68	1.94	0.34	0.054242	10.96
	Chromium	g	1.55	0.66	2.07	0.636709	4.28
	Cobalt	g	182.96	41.89	0.71	0.730997	225.55
	Copper	g	24.98	4.00	9.58	0.896265	38.55
	Lead	g	75.56	16.93	0.71	0.730997	93.20
	Mercury	g	0.15	0.07	0.17	0.066028	0.39
	Nickel	g	259.51	59.89	23.82	0.871903	343.22
	Zinc	g	86.56	21.26	27.72	12.12078	135.54
Polycyclic Aromatic Hydrocarbons	Naphthalene	g	7.73	0.98	6.83	0.3067	15.53
	Acenaphthylene	g	1.55	0.66	6.83	0.3067	9.03
	Acenaphthene	g	1.55	0.66	6.83	0.3067	9.03
	Fluorene	g	1.55	0.66	6.83	0.3067	9.03
	Phenanthrene	g	1.55	0.66	6.83	0.3067	9.03
	Anthracene	g	1.55	0.66	6.83	0.3067	9.03
	Fluoranthene	g	1.55	0.66	6.83	0.3067	9.03
	Pyrene	g	1.55	0.66	6.83	0.3067	9.03
	Benz(a)anthracene	g	1.55	0.66	6.83	0.3067	9.03
	Chrysene	g	1.55	0.66	6.83	0.3067	9.03
	Benzo(b+j)fluoranthene	g	1.55	0.66	6.83	0.3067	9.03
	Benzo(k)fluoranthene	g	1.55	0.66	6.83	0.3067	9.03
	Benzo(a)pyrene	g	0.77	0.33	3.41	0.15335	4.52
	Indeno(1.2.3.cd)pyrene	g	1.55	0.66	6.83	0.3067	9.03
	Dibenz(a.h)anthracene	g	1.55	0.66	6.83	0.3067	9.03
	Benzo(g.h.i)perylene	g	1.55	0.66	6.83	0.3067	9.03
	Sum of polycyclic aromatic hydrocarbons	g	0.77	0.33	3.41	0.15335	4.52
	Benzo(a)pyrene TEQ (zero)	g	0.77	0.33	3.41	0.15335	4.52
Total Petroleum Hydrocarbons	C6 - C9 Fraction	g	30.93	13.20	136.54	6.134	180.67
	C10 - C14 Fraction	g	77.32	300.33	348.78	209.8703	726.43
	C15 - C28 Fraction	g	154.63	386.81	691.61	264.1124	1233.05
	C29 - C36 Fraction	g	77.32	129.25	344.02	85.36772	550.58
	C10 - C36 Fraction (sum)	g	77.32	877.75	364.84	630.0666	1319.91

	Contaminant	Unit	Mar-24	Apr-24	Sep-24	Oct-24	Annual
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	g	30.93	13.20	136.54	6.134	180.67
	C6 - C10 Fraction minus BTEX	g	30.93	13.20	136.54	6.134	180.67
	C10 - C16 Fraction	g	154.63	258.49	688.04	170.7354	1101.16
	C16 - C34 Fraction	g	154.63	483.04	694.28	334.1451	1331.96
	C34 - C40 Fraction	g	154.63	76.71	682.98	38.45141	914.32
	C10 - C40 Fraction (sum)	g	154.63	900.07	705.89	637.6202	1760.59
	C10 - C16 Fraction minus Naphthalene	g	154.63	258.49	688.04	170.7354	1101.16
BTEXN	Benzene	g	1.55	0.66	6.83	0.3067	9.03
	Toluene	g	3.09	1.32	13.65	0.6134	18.07
	Ethylbenzene	g	3.09	1.32	13.65	0.6134	18.07
	meta- & para-Xylene	g	3.09	1.32	13.65	0.6134	18.07
	ortho-Xylene	g	3.09	1.32	13.65	0.6134	18.07
	Total Xylenes	g	3.09	1.32	13.65	0.6134	18.07
	Sum of BTEX	g	1.55	0.66	6.83	0.3067	9.03
	Naphthalene	g	7.73	3.30	34.13	1.5335	45.17

Sediment Monitoring Results

Results of sediment monitoring at NODH2 and SODH2 from January 2021 to October 2024 are presented in Table 5 and Table 6, respectively. Trigger Values specified for these sites under WDL212-04, are also provided. Although WDL212-04 specified annual sediment monitoring, sediment samples were collected on a quarterly basis in this reporting period (November 2023 to October 2024) to provide the opportunity for early detection for any environmental harm resulting from the wastewater discharged during electricity generation to the marine receiving environment.

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 WDL212-04), the result is shown in **Bold** font. Where results of monitoring are elevated above the trigger value and requires "notification" under WDL212-04, the result is shown in Bold Red font.

3.1.8 Results of metal analysis in sediment

Metal concentrations in sediment at NODH2 and SODH2 from January 2021 to October 2024 are shown in Table 5 and Table 6 below. All the metal results in sediment for the current reporting period (November 2023 to October 2024) are below WDL212-04 specified trigger values. Most metal concentrations at NODH2 showed a slight increasing trend but metal concentrations at SODH2 remain stable within this reporting period. In general, except for average Zn concentration at NODH2 that increased this year, average concentration of all metals in sediment are comparable 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.

3.1.9 Results of hydrocarbon analysis in sediment

Hydrocarbons including Total Petroleum Hydrocarbons (TPHs), Polynuclear Aromatic Hydrocarbons (PAHs) and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) concentrations at NODH2 and SODH2 from January 2021 to October 2024 are shown in Table 5 and Table 6 below. All hydrocarbon results in sediment for this year (November 2023 to October 2024) and that of the preceding three (3) years are less than the LOR and below trigger values specified in WDL212-04. On this basis, there is no evidence of the influence of hydrocarbons from CIPS on Darwin Harbour sediment quality.

Table 5: Sediment-Chemicals concentrations at NODH2 from January 2021 to October 2024.

	Chemical	Units	WDL212-04 Trigger Value	LOR	21/01/2021	13/04/2021	22/07/2021	28/10/2021	13/01/2022	22/02/2022	3/08/2023	22/02/2024	30/05/2024	21/08/2024
Total Metals	Aluminium	mg/kg	18800	50	12500	6440	11000	22000	15000	19300	10600	8440	15000	16200
	Arsenic	mg/kg	20	5	13	11	14	12	10	13	9	8	16	17
	Cadmium	mg/kg	1.5	1	1	1	1	1	1	1	1	<1	<1	<1
	Chromium	mg/kg	80	2	28	27	30	41	33	41	28	23	39	40
	Cobalt	mg/kg	8	2	6	7	6	8	6	7	6	5	6	7
	Copper	mg/kg	65	5	7	6	6	11	6	11	6	5	12	8
	Lead	mg/kg	50	5	10	8	9	11	15	14	6	9	13	12
	Mercury	mg/kg	0.15	0.1							0.1	<0.1	<0.1	<0.1
	Nickel	mg/kg	21	2	9	9	9	12	10	14	8	7	11	12
	Zinc	mg/kg	200	5	28	32	34	34	27	68	33	23	106	54
Polycyclic Aromatic Hydrocarbons	Naphthalene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Acenaphthylene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Acenaphthene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Fluorene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Phenanthrene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Anthracene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Fluoranthene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Pyrene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Benz(a)anthracene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Chrysene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Benzo(b+j)fluoranthene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Benzo(k)fluoranthene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Benzo(a)pyrene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Indeno(1.2.3.cd)pyrene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8

	Chemical	Units	WDL212-04 Trigger Value	LOR	21/01/2021	13/04/2021	22/07/2021	28/10/2021	13/01/2022	22/02/2022	3/08/2023	22/02/2024	30/05/2024	21/08/2024
	Dibenz(a.h)anthracene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Benzo(g.h.i)perylene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Sum of polycyclic aromatic hydrocarbons	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
	Benzo(a)pyrene TEQ (zero)	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
Total Petroleum Hydrocarbons	C6 - C9 Fraction	mg/kg	10	10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10
	C10 - C14 Fraction	mg/kg	50	50	<50	<50	<50	<50	<50	<50	50	<50	<50	<50
	C15 - C28 Fraction	mg/kg	100	100	<100	<100	<100	<100	<100	<100	100	<100	<100	<100
	C29 - C36 Fraction	mg/kg	100	100	<100	<100	<100	<100	<100	<100	100	<100	<100	<100
	C10 - C36 Fraction (sum)	mg/kg	50	50	<50	<50	<50	<50	<50	<50	50	<50	<50	<50
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	mg/kg	10	10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10
	C6 - C10 Fraction minus BTEX	mg/kg	10	10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10
	C10 - C16 Fraction	mg/kg	50	50	<50	<50	<50	<50	<50	<50	50	<50	<50	<50
	C16 - C34 Fraction	mg/kg	100	100	<100	<100	<100	<100	<100	<100	100	<100	<100	<100
	C34 - C40 Fraction	mg/kg	100	100	<100	<100	<100	<100	<100	<100	100	<100	<100	<100
	C10 - C40 Fraction (sum)	mg/kg	50	50	<50	<50	<50	<50	<50	<50	50	<50	<50	<50
	C10 - C16 Fraction minus Naphthalene	mg/kg	50	50	<50	<50	<50	<50	<50	<50	50	<50	<50	<50
BTEXN	Benzene	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
	Toluene	mg/kg	0.5	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.5	<0.2	<0.2	<0.2
	Ethylbenzene	mg/kg	0.5	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.5	<0.2	<0.2	<0.2
	meta- & para-Xylene	mg/kg	0.5	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.5	<0.2	<0.2	<0.2
	ortho-Xylene	mg/kg	0.5	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.5	<0.2	<0.2	<0.2
	Total Xylenes	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
	Sum of BTEX	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
	Naphthalene	mg/kg	1	1	<1	<1	<1	<1	<1	<1	1	<0.2	<1	<1

Table 6: Sediment-Chemicals concentrations at SODH2 from January 2021 to October 2024

	Chemical	Units	WDL212-04 Trigger Value	LOR	21/01/2021	13/04/2021	22/07/2021	28/10/2021	13/01/2022	22/02/2022	3/08/2023	22/02/2024	21/08/2024
Total Metals	Aluminium	mg/kg	18800	50	6810	4900	9910	8210	13300	14600	10600	8100	11400
	Arsenic	mg/kg	20	5	9	10	14	9	13	11	11.4	12	19
	Cadmium	mg/kg	1.5	1	1	1	1	1	1	1	0.1	<1	<1
	Chromium	mg/kg	80	2	16	16	27	16	29	31	25.3	25	29
	Cobalt	mg/kg	8	2	4	4	6	3	5	6	5.4	4	5
	Copper	mg/kg	65	5	5	5	6	5	6	7	4.6	5	6
	Lead	mg/kg	50	5	7	5	9	5	12	8	8.5	8	10
	Mercury	mg/kg	0.15	0.1							0.01	0.1	<0.1
	Nickel	mg/kg	21	2	5	5	8	5	8	10	7.4	7	8
	Zinc	mg/kg	200	5	13	17	22	11	21	24	21.4	17	23
Polycyclic Aromatic Hydrocarbons	Naphthalene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Acenaphthylene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Acenaphthene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Fluorene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Phenanthrene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Anthracene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Fluoranthene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Pyrene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Benz(a)anthracene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Chrysene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Benzo(b+j)fluoranthene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Benzo(k)fluoranthene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Benzo(a)pyrene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Indeno(1.2.3.cd)pyrene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Dibenz(a.h)anthracene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Benzo(g.h.i)perylene	mg/kg	0.8	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
	Sum of polycyclic aromatic hydrocarbons	mg/kg	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero)	mg/kg	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Petroleum Hydrocarb	C6 - C9 Fraction	mg/kg	10	10	10	10	10	10	10	10	10	<10	<10
	C10 - C14 Fraction	mg/kg	50	50	50	50	50	50	50	50	50	<50	<50

	Chemical	Units	WDL212-04 Trigger Value	LOR	21/01/2021	13/04/2021	22/07/2021	28/10/2021	13/01/2022	22/02/2022	3/08/2023	22/02/2024	21/08/2024
	C15 - C28 Fraction	mg/kg	100	100	100	100	100	100	100	100	100	<100	<100
	C29 - C36 Fraction	mg/kg	100	100	100	100	100	100	100	100	100	<100	<100
	C10 - C36 Fraction (sum)	mg/kg	50	50	50	50	50	50	50	50	50	<50	<50
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	mg/kg	10	10	10	10	10	10	10	10	10	<10	<10
	C6 - C10 Fraction minus BTEX	mg/kg	10	10	10	10	10	10	10	10	10	<10	<10
	C10 - C16 Fraction	mg/kg	50	50	50	50	50	50	50	50	50	<50	<50
	C16 - C34 Fraction	mg/kg	100	100	100	100	100	100	100	100	100	<100	<100
	C34 - C40 Fraction	mg/kg	100	100	100	100	100	100	100	100	100	<100	<100
	C10 - C40 Fraction (sum)	mg/kg	50	50	50	50	50	50	50	50	50	<50	<50
	C10 - C16 Fraction minus Naphthalene	mg/kg	50	50	50	50	50	50	50	50	50	<50	<50
BTEXN	Benzene	mg/kg	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	<0.2	<0.2
	Toluene	mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<0.2	<0.2
	Ethylbenzene	mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<0.2	<0.2
	meta- & para-Xylene	mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<0.2	<0.2
	ortho-Xylene	mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<0.2	<0.2
	Total Xylenes	mg/kg	0.5	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.2	<0.5	<0.5
	Sum of BTEX	mg/kg	0.2	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.5	<0.2	<0.2
	Naphthalene	mg/kg	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Investigation undertaken within the year

Following up on the incident of elevated Zinc concentration on 22 February 2024 at ADP2, an investigation report is provided below.

Condition 26.1.

The incident was detected by Trop Water Pty Ltd on Friday 1 March 2024 upon completion of the final assessment of the Certificate of Analysis and the supporting laboratory Quality Control Report and QA/QC Compliance Assessment documentation received from the analysing laboratory on 29 February 2024. It was observed that, Filtrable Zinc concentration at APD2 was **346** µg/L, which is more than three times the Trigger value (21 µg/L) of Zinc under WDL212-03.

Condition 26.2.

The identified incident occurred during the 22 February 2024 monitoring event at 1056 hrs.

Condition 26.3.

Discharge was occurring on the day of incident and a volumetric estimation of flow was recorded as 4.5 L/min. The source of discharge to ADP2 is the wastewater from the neutralisation basin and oil/water separator, via the small settling pond, i.e. all final inflow to ADP2 originates at the outlet pipe-works of the small pond (ISCP).

Condition 26.4.

The potential cause of Zinc exceedance at ADP2 is likely to be the elevated Filtrable Zinc concentration **674** µg/L, in the small settling pond (ISCP) (Table 7), upstream of ADP2. Evaporation of water and concentration of Zinc in the settling water and sediment in ISCP during the build-up season and remobilisation of Zinc due to low water pH (5.55) on the day of monitoring remains the likely contributing factor. Zinc is used as an anti-wear agent in oils and lubricants. ISCP receives wastewater from the neutralisation basin and oil/water separator. It should be noted that all Hydrocarbon analytical results at ISCP, ADP2 and SODH1 were below the limit of detection.

Condition 26.5.

Table 7: Monitoring results for Zinc (µg/L for water and mg/kg for sediment) measured upstream and downstream of Authorised Discharge Point 2 (ADP2) under WDL212-03.

Date	Sample type	ILCP (µg/L)	ISCP (µg/L)	ADP2 (µg/L)	SODH1 (µg/L)	SODH2** (mg/kg)	SODH3 (µg/L)	SODH4 (µg/L)	WDL212-03 Trigger Value
22/02/2024	Filtered	<5	**674**	**346**	9		<5	<5	21 or 200**
	Total	<5	**708**	**435**	10	17	<5	<5	21 or 200**
09/05/2023	Filtered	<5	11	No flow	<50*		<50*	<50*	21 or 200**
	Total	<5	17	No flow	<50*	9	<50*	<50*	21 or 200**
03/08/2023	Filtered	<5	**22**	12	No flow		<50*	<50*	21 or 200**
	Total	<5	**25**	**23**	No flow	19	<50*	<50*	21 or 200**
22/11/2023	Filtered	<5	**51**	No flow	No flow		<5	<5	21 or 200**
	Total	<5	**176**	No flow	No flow	21.4	<5	<5	21 or 200**

*Laboratory limit of reporting (LOR) was raised to 50 µg/L due to marine water.
**Sediment samples or sediment trigger value (measured in mg/kg)

Condition 26.6.

Volumetric estimation of flow was recorded as 4.5 L/min. The sample point ADP2 is on the CIPS property and is not influenced by any stream or river. Additionally, this sampling point does not represent discharge to the marine receiving environment.

Condition 26.7.

There is no available weather station on site. Therefore, the rainfall data from the nearest weather stations to the site, Darwin Airport and East Arm stations are used to provide indicative rainfall data for the CIPS site. Daily rainfall recorded at Darwin Airport (BOM Station ID 014015) for the period February 2024 is shown in Figure 41. Figure 42 below also shows the daily rainfall recorded in the month of February 2024 at East Arm (BOM Station ID 014260). A total of 446.6 mm and 428.0 mm of rainfall was recorded at Darwin Airport and East Arm stations, respectively in the month of February 2024. Monthly accumulated rainfall recorded prior to sampling on 22 February 2024 was 358.2 mm (Darwin Airport) and 325.0 mm (East Arm). On the day of sampling, no rainfall was recorded at both Darwin Airport and East Arm stations.

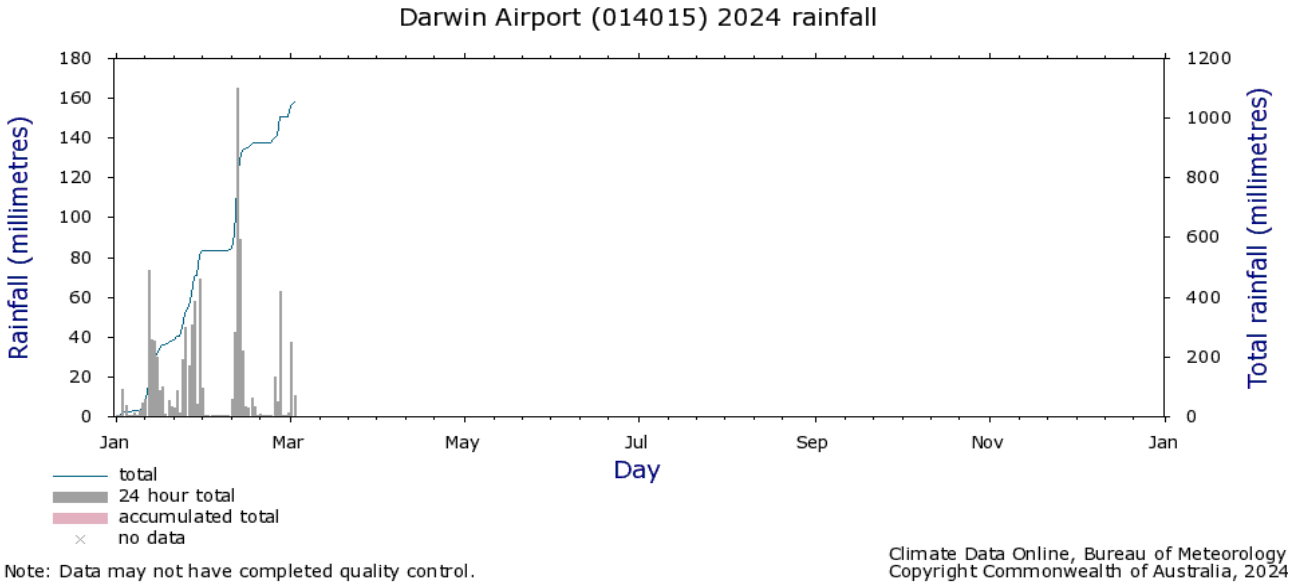

Figure 41: Daily rainfall recorded at Darwin Airport (Bureau of Meteorology Station ID 014015) for the month of February 2024 (adopted from Bureau of Meteorology 2024).

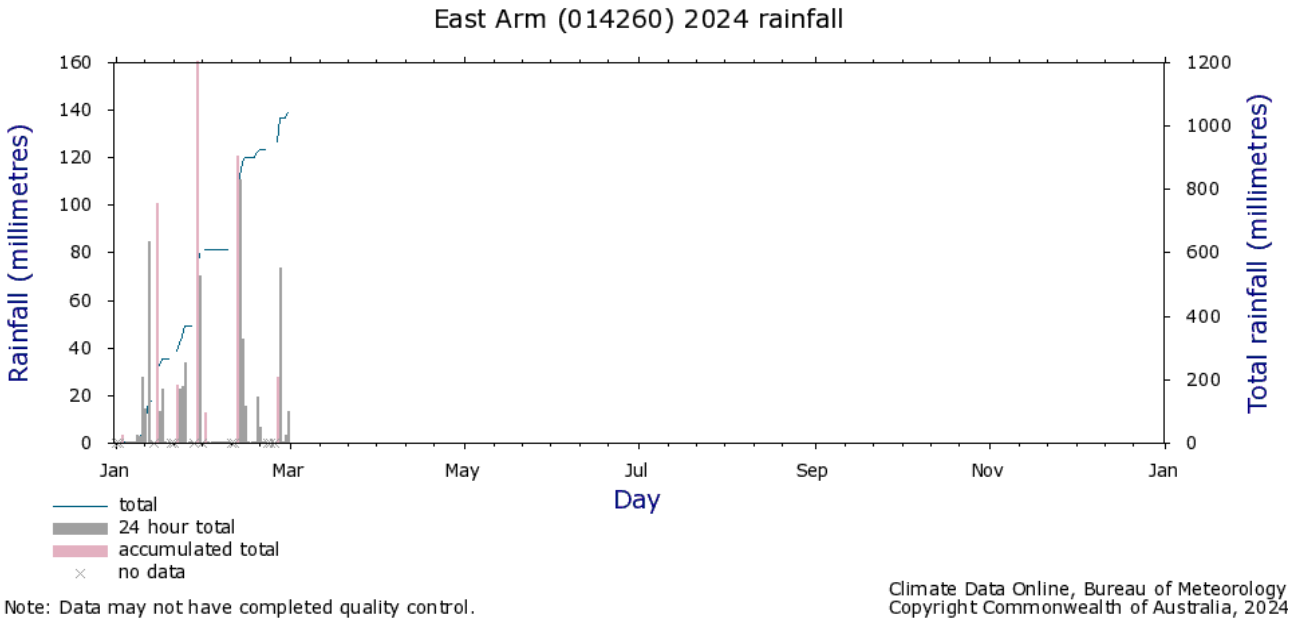

Figure 42: Daily rainfall for the month of February 2024 at East Arm (Bureau of Meteorology Station ID 014260) (adopted from Bureau of Meteorology 2024).

Condition 26.8.

It is highly unlikely that the elevated Filtered Zinc concentration (346 µg/L) at ADP2 has had any negative impact on the Darwin Harbour marine environment. Although concentrations above the relevant Trigger Values is an indicator for potential risk of environmental harm, ADP2 is on CIPS property and is not representative of the receiving environment. Total and Filtered Zinc concentration at SODH1 (also land based monitoring site), downstream of ADP2 are 10 µg/L (Total) and 9 µg/L (Filterable) on 22 February 2024. Also, Total and Filtered Zinc concentration at SODH3 and SODH4 (marine receiving environment) were all less than the LOR of 5 µg/L, an indication that the elevated Zinc concentration at ADP2 was not detected in the receiving environment (Table 7).

Further, the marine sediment Zinc result of 17 mg/kg, collected at SODH2 (Darwin Harbour receiving environment) on 22 February 2024 was approximately one order of magnitude below the Zinc Trigger Value defined in the Sediment Quality Guidelines (200 mg/kg) under WDL-212-03 (Table 7). Figure 43 below shows photograph of mangroves (taken on 22 February 2024) around the southern discharge receiving environment, where wastewater from ADP2 discharges via SODH1 into Darwin Harbour.

Figure 43: Photo of mangroves around the receiving environment where wastewater from ADP2 is discharged via SODH1 into the Darwin Harbour (Taken on 22 February 2024).

Condition 26.9.

The weir at ADP2 has been raised to restrict discharge. Under normal operating conditions, discharge only occurs at ADP2 during and after significant rainfall events.

Condition 26.10.

Territory Generation circulated the water between the small and large settling ponds, during the 2024 dry season to reduce the level of accumulated contaminants in the small pond.

Conclusion

Trigger values are imposed on discharged wastewater at sample point ADP2, prior to leaving the CIPS property boundary and discharging to Darwin Harbour (marine water). It should be noted that laboratory analytical result for filtered Zn samples collected at SODH1 (9 µg/L), as well as SODH3 (mixing zone) and SODH4 (receiving environment) (<5 µg/L) on 22 February 2024 were below the Zn Trigger value (21 µg/L) at SODH1 and, further, below the analytical method's limit of detection in the marine water (<5 µg/L). In addition, marine sediment (SODH2) Total Zinc result (17 mg/kg) on 22 February 2024 was significantly below

the Trigger Value defined in the Sediment Quality Guidelines (200 mg/kg) under WDL212-03. It is therefore highly unlikely that the elevated Zinc concentration observed at ADP2 on 22 February 2024 has had any adverse impact on the receiving environment. Monitoring under WDL212-03 and subsequently under WDL212-04 is being continued, to assess any impact of wastewater discharge on the receiving environment.

4 CONCLUSIONS

Wastewater discharged from CIPS and sediment in Darwin Harbour receiving environment were monitored from November 2023 to October 2024 in accordance with WDL212-03 (November 2023 to June 2024) and subsequently with WDL212-04 (July 2024 to date) to assess environmental harm (if any) resulting from power generation. Monitoring results for the reporting period is presented and discussed in this report.

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

- Wastewater is discharged 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. In addition, the level transmitter of the flow meter installed at ADP1 developed a fault for substantial time within the year.
- pH was outside the WDL212-04 pH trigger value range of 6.00 – 8.50 pH units at ADP1 and ADP2 on 23 January 2024 (**8.78** and **8.89**), 21 March 2024 (**8.66** and **8.86**) and 18 April 2024 (**8.67** and **9.31**), respectively. The high pH at ADP1 and ADP2 is typical of most thermal power cooling water operation systems (7.0 - 9.5) (Ahmed, Jamal & Shujaatullah, 2020). The exceedances at ADP1 and ADP2 were not three or more times the pH trigger value range, nor recorded on three consecutive sampling occasions. Therefore, there was no notifiable incident at the compliance points (ADP1 and ADP2) for pH within the monitoring period (November 2023 to October 2024).
- All TP, TN and TSS were below their respective trigger values specified in WDL212-04 at ADP1 and ADP2 in this reporting year, except for TN of **4.1** mg/L recorded at ADP2 on 22 February 2024. This one-off elevated TN concentration is less than three or more times the TN trigger value of 3.5 mg/L.
- Except for filtered Zn, all filtered metals concentration were below the trigger values specified for each metal in WDL212-04. Filtered Zn concentration at ADP2 on 20 December 2023 (**33** µg/L), 23 January 2024 (**48** µg/L) and 22 February 2024 (**346** µg/L), NODH1 on 22 February 2024 (**73** µg/L) and 21 March 2024 (**62** µg/L), and ISCP on 23 November 2023 (**51** µg/L) and 22 February 2024 (**674** µg/L) exceeded Zn trigger value of 21 µg/L under WDL212-03 in this monitoring period. Out of these, only the exceedance at ADP2 on 22 February 2024 required notification under WDL212-03. ADP2 received water from the small evaporation pond, ISCP. Evaporation of water and concentration of Zinc in the settling water and sediment in ISCP during the build-up season and remobilisation of Zinc due to low water pH at ISCP (5.55) on the day of monitoring remains the likely contributing factor to the elevated Filtered Zn at ADP2. Zinc is used as an anti-wear agent in oils and lubricants. ISCP receives wastewater from the neutralisation basin and oil/water separator. The high filtered Zn concentration at ADP2 was notified to the NT EPA on 4 March 2024. However, it is worth to note that a one-off filtered Zn concentration of 346 µg/L at either ADP1 or ADP2 does not constitute a non-compliance in the current WDL212-04 with filterable Zn trigger value of 152 µg/L.
- All hydrocarbons were below the LOR for each chemical at all CIPS water monitoring sites except TPH recorded at ADP2 and ISCP. The detected TPH concentrations at ADP2 and ISCP can be attributed to diesel range organics (DRO) (C10 – C28 fraction), and motor oils (C29 – C36 fraction) (Collins, 2007). CIPS is classified as a heavy industrial site which uses diesel and mineral oils for power generation and equipment maintenance. Wastewater from CIPS site is directed to oil/water separator to remove all hydrocarbon. ISCP receives effluent from the oil/water separator and discharges to ADP2 (Figure 4). This suggests that the oil/water separator could not trap all the TPH flowing through it. However, the concentration of key hydrocarbons of environmental interest BTEX and PAHs were all below their respective laboratory LOR at all sites throughout this year.
- Except estimated contamination load for TN, TP, TSS, Al, As, Cr, Cu, and Zn at ADP1, all other reported contamination loads for contaminants at ADP1 were estimated with the absolute value of their respective LOR in this year. At ADP2, only the absolute value of PAHs and BTEX were used in the estimation of contamination loads throughout the year. Compared to the previous year, contamination load at ADP1 for this year increased by a least factor of 2.1 for filtered Cu and most factor of 9.6 for total

Zn. However, the estimated contamination load at ADP1 for this year is biased due to the erroneously high discharge data recorded from 12 March 2024 to 30 April 2024 (section 3.1.1).

- Metal monitoring results in sediment at NODH2 and SODH2 were consistently below the specified trigger values in WDL212-04. Apart from average Zn concentration at NODH2 that increased this year, average concentration of all metals in sediment are comparable 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.
- All hydrocarbon results in sediment for this year and that of the preceding three (3) years are less than the LOR and below trigger values specified in WDL212-04. Therefore, the is no evidence of the influence of hydrocarbons from CIPS on Darwin Harbour sediment quality.

The sporadic and unpredictable nature of discharge from ADP1 couple with faulty flow meter, resulted in operational conditions where compliance with condition 29.1 and 22 were not achieved for a significant number of monitoring events. However, TGen is looking into alternative technology for measuring discharge volume. In view of the elevated levels of contaminants in the small pond (ISCP) TGen circulated the water between the small and large (ILCP) settling ponds, during the 2024 dry season to reduce the level of accumulated contaminants in the small pond.

Based on the monitoring results obtained during the reporting period, there is a strong indication that wastewater discharged from CIPS has not adversely impacted the receiving environment (Darwin Harbour) water and sediment quality. Therefore, the monitoring objective set out by TGen to protect the receiving environment was achieved. Trop Water (on behalf of TGen) will continue to monitor wastewater and sediment quality condition in accordance with the monitoring program specified in WDL212-04.

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WDL212-04 (2024): Channel Island Power Station-Waste Discharge Licence, July 2024

ADDITIONAL DATA

A.1 pH

Table A 1: pH at WDL212-04 water monitoring sites.

			Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	WDL212-04 Tri	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		22/02/2024	7.85	**5.55**
18/12/2018					6.84			30/05/2024	8.48	9.35
22/1/2019			9.11		8.98			21/08/2024	8.67	9.07
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			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	pH unit	6 - 8.5	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										
20/12/2023				7.8						
23/01/2024			**8.78**	**8.89**	8.56					
22/02/2024				7.32	6.88	8.04				
21/03/2024			**8.66**	**8.86**	6.96	7.4				
18/04/2024			**8.67**	**9.31**	8.56					
30/05/2024			8.22		8.16					
13/06/2024			8.06		8.01					
23/07/2024										
21/08/2024										
19/09/2024			8.4	8.48	8.3	7.87				
17/10/2024										

A.2 Temperature

Table A 2: Temperature (C) at WDL212-04 water monitoring sites.

			Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	WDL212-04 Trig	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		22/02/2024	33	33.21
18/12/2018					30.93			30/05/2024	30.9	31.54
22/1/2019			33.55		31.27			21/08/2024	27.84	28.43
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			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	°C		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										
20/12/2023				29.69						
23/01/2024			31.75	31.8	31.06					
22/02/2024				32.31	30.69	29.64				
21/03/2024			28.71	31.28	30.54	31.68				
18/04/2024			27.52	30.4	30.12					
30/05/2024			28.64		28.73					
13/06/2024			26.27		25.86					
23/07/2024										
21/08/2024										
19/09/2024			25.97	30.95	27.62	28.17				
17/10/2024										

A.3 Dissolved Oxygen (% saturation)

Table A 3: Dissolved Oxygen at WDL212-04 water monitoring sites.

			Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	WDL212-04 Trig	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		22/02/2024	86.4	105.1
18/12/2018					66.3			30/05/2024	55.5	76.8
22/1/2019			56.8		77.5			21/08/2024	77.5	82.6
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			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	% Saturation		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										
20/12/2023				49						
23/01/2024			72.4	75.1	72.4					
22/02/2024				47.1	70	65.5				
21/03/2024			80.2	66.7	45.5	66.3				
18/04/2024			82	62.2	66.2					
30/05/2024			76.2		58.6					
13/06/2024			57		57.4					
23/07/2024										
21/08/2024										
19/09/2024			98.8	67.8	67.5	82.5				
17/10/2024										

A.4 Electrical Conductivity(µS/cm)

Table A 4: Electrical Conductivity at WDL212-04 water monitoring sites.

			Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	WDL212-04 Trig	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		22/02/2024	1730	156
18/12/2018					98			30/05/2024	1830	649
22/1/2019			1780		2310			21/08/2024	1760	531
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			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	µS/cm		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										
20/12/2023				96						
23/01/2024			1770	96	605					
22/02/2024				169	202	788				
21/03/2024			1700	606	195	119				
18/04/2024			1720	576	1690					
30/05/2024			780		211					
13/06/2024			189		188					
23/07/2024										
21/08/2024										
19/09/2024			1000	1310	286	40300				
17/10/2024										

A.5 Turbidity

Table A 5: Turbidity (NTU) at WDL212-04 water monitoring sites.

			Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	WDL212-04 Tri	ADP1	ADP2	NODH1	SODH1		Date	ILCP	ISCP
14/4/2016	NTU		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		22/02/2024	4.08	3.55
18/12/2018					1.9			30/05/2024	1.8	5.36
22/1/2019			3.59		1.9			21/08/2024	1.58	3.51
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			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										
20/12/2023				11.4						
23/01/2024			4.67	12.4	7.93					
22/02/2024				7.11	5.62	5.04				
21/03/2024			2.55	3.77	22.1	11.6				
18/04/2024			4.84	4.59	5.54					
30/05/2024			1.54		1.68					
13/06/2024			1.76		2.34					
23/07/2024										
21/08/2024										
19/09/2024			1.59	1.97	0.85	2.15				
17/10/2024										

A.6 Free Chlorine(mg/L)

Table A 6: Free Chlorine concentration at WDL212-04 water monitoring sites.

			Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	WDL212-04 Trig	ADP1	ADP2	NODH1	SODH1		Date	ILCP	ISCP
14/4/2016								14/4/2016		
10/5/2016								21/7/2016		
9/6/2016								25/10/2016		
21/7/2016								19/1/2017		
25/8/2016								27/4/2017		
27/9/2016								31/7/2017		
25/10/2016								24/10/2017		
24/11/2016								18/1/2018		
15/12/2016								19/4/2018		
19/1/2017								19/7/2018		
23/2/2017								24/10/2018	0.03	0.05
30/3/2017								22/1/2019	0.06	0.07
27/4/2017								16/4/2019	0.02	0.01
30/5/2017								23/7/2019	0.02	0.03
22/6/2017								17/10/2019	0.04	0.03
31/7/2017								14/1/2020	0.01	0.06
31/8/2017								23/4/2020	0.04	0.04
21/9/2017								23/7/2020	0.03	0.02
24/10/2017								29/10/2020	0.01	0.01
16/11/2017								3/11/2020		
20/12/2017								21/1/2021	0.02	0.01
18/1/2018								13/4/2021	0.03	0.05
22/2/2018								22/7/2021	0.05	0.07
22/3/2018								28/10/2021	0.11	0.04
19/4/2018								13/1/2022	0.02	0.04
17/5/2018								22/2/2022	0.03	0.02
21/6/2018								20/04/2022	0.61	0.02
19/7/2018								27/02/2023	0.04	0.02
23/8/2018								9/05/2023	0.04	0.04
20/9/2018								3/08/2023	0.03	0.06
24/10/2018					0.06			22/11/2023	0.03	0
20/11/2018			1.08		0.25	0.05		22/02/2024	0.03	0.01
18/12/2018					0.02			30/05/2024	0.06	0.05
22/1/2019			0.65		0.16			21/08/2024	0.04	0.03
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	mg/L		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				0	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										
20/12/2023				0.07						
23/01/2024			0.32	0.06	0.06					
22/02/2024				0.03	0.01	0.01				
21/03/2024			1.09	0.01	0.01	0.14				
18/04/2024			1.03	0.03	0.18					
30/05/2024			0.79		0.79					
13/06/2024			1.16		1.12					
23/07/2024										
21/08/2024										
19/09/2024			0.22	0.03	0.33	0.01				
17/10/2024										

A.7 Total Suspended Solids (TSS) (mg/L)

Table A 7: Total Suspended Solids concentration at WDL212-04 water monitoring sites.

				Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	LOR	WDL212-04 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		22/02/2024	7	5
18/12/2018						5			30/05/2024	5	10
22/1/2019				21		5			21/08/2024	5	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				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	mg/L	5	25	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											
20/12/2023					14						
23/01/2024				5	14	5					
22/02/2024					6	5	5				
21/03/2024				5	5	5	5				
18/04/2024				5	5	5					
30/05/2024				5		5					
13/06/2024				5		5					
23/07/2024											
21/08/2024											
19/09/2024				5	5	5	**40**				
17/10/2024											

A.8 Total Phosphorous (TP) (mg/L)

Table A 8: Total Phosphorous concentration at WDL212-04 water monitoring sites.

				Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	LOR	WDL212-04 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		22/02/2024	0.06	0.02
18/12/2018						0.03			30/05/2024	0.03	0.02
22/1/2019				0.33		0.24			21/08/2024	0.02	0.01
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				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	mg/L	0.01	0.3	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											
20/12/2023					0.06						
23/01/2024				0.02	0.02	0.06					
22/02/2024					0.02	0.03	0.02				
21/03/2024				0.26	0.02	0.02	0.02				
18/04/2024				0.26	0.02	0.27					
30/05/2024				0.01		0.02					
13/06/2024				0.01		0.01					
23/07/2024											
21/08/2024											
19/09/2024				0.05	0.03	0.13	0.07				
17/10/2024											

A.9 Total Nitrogen (TN) (mg/L)

Table A 9: Total Nitrogen concentration at WDL212-04 water monitoring sites.

				Monthly monitoring sites					Quarterly monitoring sites		
Date	Units	LOR	WDL212-04 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		22/02/2024	1.6	3.9
18/12/2018						0.3			30/05/2024	1.6	3.9
22/1/2019				2.9		2.3			21/08/2024	1.5	0.9
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				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	mg/L	0.1	3.5	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											
20/12/2023					2.2						
23/01/2024				2.6	1.4	1					
22/02/2024					4.1	0.8	1.7				
21/03/2024				2.4	0.8	1	0.7				
18/04/2024				2.8	1.3	2.7					
30/05/2024				0.5		0.3					
13/06/2024				0.4		0.7					
23/07/2024											
21/08/2024											
19/09/2024				0.5	1.2	0.4	1.2				
17/10/2024											

A.10 Filtered Metals at ADP1

Table A 10: Filtered metals at WDL212-04 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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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										
20/12/2023										
23/01/2024	<10	4	<0.1	3	<1.0	4	<1.0	<0.1	<1.0	8
22/02/2024										
21/03/2024	<10	<1.0	<0.1	3	<1.0	4	<1.0	<0.1	<1.0	<5.0
18/04/2024	<10	3	<0.1	4	<1.0	3	<1.0	<0.1	<1.0	<5.0
30/05/2024	<10.0	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<5.0
13/06/2024	<10	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<5.0
23/07/2024										
21/08/2024										
19/09/2024	<5	0.4	<0.05	0.6	<0.1	2.2	<0.1	0.006	<0.5	<1
17/10/2024										

A.11 Filtered Metals at ADP2

Table A 11: Filtered metals at WDL212-04 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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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										
20/12/2023	50	<1.0	<0.1	<1.0	<1.0	2	<1.0	<0.1	1	33
23/01/2024	10	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	0.1	1	48
22/02/2024	60	<1.0	0.2	<1.0	<1.0	2	<1.0	<0.1	2	346
21/03/2024	220	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	15
18/04/2024	220	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<5.0
30/05/2024										
13/06/2024										
23/07/2024										
21/08/2024										
19/09/2024	6	0.6	<0.05	0.2	<0.1	1.2	<0.1	0.014	<0.5	4
17/10/2024										

A.12 Filtered Metals at ADP2

Table A 12: Filtered metals at WDL212-04 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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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										
20/12/2023										
23/01/2024	10	1	<0.1	<1.0	<1.0	2	<1.0	<0.1	<1.0	17
22/02/2024	10	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	**73**
21/03/2024	40	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	**62**
18/04/2024	<10	3	<0.1	3	<1.0	3	<1.0	<0.1	<1.0	<5.0
30/05/2024	<10.0	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<5.0
13/06/2024	<10	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<5.0
23/07/2024										
21/08/2024										
19/09/2024	<5	0.4	<0.05	0.6	<0.1	2.2	<0.1	0.007	<0.5	3
17/10/2024										

A.13 Filtered Metals at SODH1

Table A 13: Filtered metals at WDL212-04 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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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										
20/12/2023										
23/01/2024										
22/02/2024	10	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	9
21/03/2024	20	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	42
18/04/2024										
30/05/2024										
13/06/2024										
23/07/2024										
21/08/2024										
19/09/2024	10	1	1.9	0.9	<0.2	1	<0.2	<0.005	1.3	101
17/10/2024										

A.14 Filtered Metals at Cooling ponds

Table A 14: Filtered metals at WDL212-04 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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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
22/02/2024	<10.0	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<5.0
30/05/2024	<10.0	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<5.0
21/08/2024	<5.0	<0.5	<0.2	<0.5	<0.2	<1.0	<0.2	<0.04	<0.5	<5.0

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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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**
22/02/2024	410	<1.0	0.3	<1.0	<1.0	6	2	<0.1	4	**674**
30/05/2024	140	<1.0	<0.1	<1.0	<1.0	2	<1.0	<0.1	2	9
21/08/2024	16	<0.5	<0.2	<0.5	<0.2	2	<0.2	<0.04	<0.5	<5.0

A.15 Total Metals at ADP1

Table A 15: Total metals at WDL212-04 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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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	**23**	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										
20/12/2023										
23/01/2024	10	4	<0.1	3	<1.0	7	<1.0	<0.1	<1.0	16
22/02/2024										
21/03/2024	20	3	<0.1	4	<1.0	1	<1.0	<0.1	<1.0	5
18/04/2024	30	3	<0.1	3	<1.0	7	<1.0	<0.1	<1.0	21
30/05/2024	<10	<1.0	<0.1	<1.0	<1.0	1	<1.0	<0.1	<1.0	<5.0
13/06/2024	<10	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<5.0
23/07/2024										
21/08/2024										
19/09/2024	<5	0.5	<0.05	0.6	<0.1	2.4	<0.1	0.008	<0.5	2
17/10/2024										

A.16 Total Metals at ADP2

Table A 16: Total metals at WDL212-04 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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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										
20/12/2023	60	<1.0	<0.1	<1.0	<1.0	3	<1.0	<0.1	1	**71**
23/01/2024	30	<1.0	<0.1	<1.0	<1.0	2	<1.0	<0.1	<1.0	**123**
22/02/2024	410	<1.0	0.2	1	<1.0	6	6	<0.1	2	**435**
21/03/2024	1290	32	5	1	**105**	**15**	44	<0.1	149	**99**
18/04/2024	220	<1.0	<0.1	<1.0	<1.0	2	<1.0	<0.1	<1.0	18
30/05/2024										
13/06/2024										
23/07/2024										
21/08/2024										
19/09/2024	8	0.6	<0.05	0.3	<0.1	1.4	<0.1	0.025	3.5	4
17/10/2024										

A.17 Total Metals at NODH1

Table A 17: Total metals at WDL212-04 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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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										
20/12/2023										
23/01/2024	10	2	0.1	1	<1.0	4	<1.0	<0.1	<1.0	40
22/02/2024	130	<1.0	<0.1	<1.0	<1.0	1	<1.0	<0.1	<1.0	**76**
21/03/2024	130	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	**74**
18/04/2024	160	3	<0.1	4	<1.0	7	<1.0	<0.1	<1.0	16
30/05/2024	<10.0	<1.0	<0.1	<1.0	<1.0	1	<1.0	<0.1	<1.0	<5.0
13/06/2024	<10	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<5.0
23/07/2024										
21/08/2024										
19/09/2024	<5	0.4	<0.05	0.7	<0.1	2.4	<0.1	0.01	<0.5	5
17/10/2024										

A.18 Total Metals at SODH1

Table A 18: Total metals at WDL212-04 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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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										
20/12/2023										
23/01/2024										
22/02/2024	70	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	10
21/03/2024	170	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	**65**
18/04/2024										
30/05/2024										
13/06/2024										
23/07/2024										
21/08/2024										
19/09/2024	187	1.2	1.9	1.7	0.4	2	0.4	0.007	1.8	131
17/10/2024										

A.19 Total Metals at ILCP and ISCP

Table A 19: Total metals at WDL212-04 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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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
22/02/2024	20	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<5.0
30/05/2024	<10.0	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	9
21/08/2024	<5.0	<0.6	<0.2	<0.5	<0.2	<1.0	<0.2	0.04	0.7	<5.0

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
WDL212-04 Trigger Value	82	N/A	14	49.0 (Cr III) 20.0 (Cr VI)	14	8	6.6	0.7	200	152
LOR	5	0.2	0.05	0.2	0.1	0.5	0.1	0.005	0.5	1
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**
22/02/2024	**750**	<1.0	0.4	2	<1.0	9	9	<0.1	4	**708**
30/05/2024	**160**	<1.0	<0.1	<1.0	<1.0	2	<1.0	<0.1	3	17
21/08/2024	27	<0.5	<0.2	2.7	<0.2	4	<0.2	<0.04	1.4	11

A.20 Hydrocarbons at ADP1

Table A 20: Hydrocarbons at WDL212-04 ADP1 site.

ADP1																			
Group of Hydrocarbon	Hydrocarbon	Units	WDL212-04 Trigger Value	LOR	22/12/2022	23/01/2023	27/02/2023	20/03/2023	9/05/2023	13/07/2023	3/08/2023	19/10/2023	23/01/2024	21/03/2024	18/04/2024	30/05/2024	13/06/2024	21/08/2024	19/09/2024
Polycyclic Aromatic Hydrocarbons	Naphthal	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Acenapht	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Acenapht	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Fluorene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Phenanth	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Anthracen	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Fluoranth	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Pyrene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Benz(a)an	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Chrysene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Benzo(b+	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Benzo(k)f	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Benzo(a)p	µg/L	N/A	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
	Indeno(1.	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Dibenz(a.	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Benzo(g.h	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Sum of po	µg/L	N/A	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
	Benzo(a)p	µg/L	N/A	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
Total Petroleum Hydrocarbons	C6 - C9 Fra	µg/L	N/A	20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20		<20
	C10 - C14	µg/L	N/A	50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50		<50
	C15 - C28	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100		<100
	C29 - C36	µg/L	N/A	50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50		<50
	C10 - C36	µg/L	N/A	50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50		<50
Total Recoverable Petroleum Hydrocarbons	C6 - C10 F	µg/L	N/A	20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20		<20
	C6 - C10 F	µg/L	N/A	20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20		<20
	C10 - C16	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100		<100
	C16 - C34	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100		<100
	C34 - C40	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100		<100
	C10 - C40	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100		<100
	C10 - C16	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100		<100
BTEXN	Benzene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Toluene	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2
	Ethylbenz	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2
	meta- & p	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2
	ortho-Xyl	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2
	Total Xyle	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2
	Sum of BT	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1
	Naphthal	µg/L	N/A	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5

A.21 Hydrocarbons at ADP2

Table A 21: Hydrocarbons at WDL212-04 ADP2 site.

ADP2																		
Group of Hydrocarbon	Hydrocarbon	Units	WDL212-04 Trigger Value	LOR	22/12/2022	23/01/2023	27/02/2023	20/03/2023	17/04/2023	13/07/2023	3/08/2023	14/09/2023	20/12/2023	23/01/2024	22/02/2024	21/03/2024	18/04/2024	19/09/2024
Polycyclic Aromatic Hydrocarbons	Naphthale	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Acenapht	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Acenapht	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Fluorene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Phenanth	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Anthracer	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Fluoranth	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Pyrene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benz(a)an	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Chrysene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(b+j	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(k)f	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(a)p	µg/L	N/A	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
	Indeno(1,	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Dibenz(a.	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(g.h	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Sum of po	µg/L	N/A	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
	Benzo(a)p	µg/L	N/A	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
Total Petroleum Hydrocarbons	C6 - C9 Fra	µg/L	N/A	20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20.0	<20.0	<20	<20
	C10 - C14	µg/L	N/A	50		640	<50	<50	<50	140	<50	<50	<50	<50	<50.0	<50.0	300	<50
	C15 - C28	µg/L	N/A	100		260	<100	<100	340	310	370	<100	300	<100	<100.0	<100.0	400	<100
	C29 - C36	µg/L	N/A	50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50.0	<50.0	140	<50
	C10 - C36	µg/L	N/A	50		900	<50	<50	340	450	370	<50	300	<50	<50.0	<50.0	840	<50
Total Recoverable Petroleum Hydrocarbons	C6 - C10 F	µg/L	N/A	20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 F	µg/L	N/A	20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C16	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	280	<100
	C16 - C34	µg/L	N/A	100		250	<100	<100	340	300	320	<100	300	<100	<100	<100	490	<100
	C34 - C40	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	110	<100
	C10 - C40	µg/L	N/A	100		250	<100	<100	340	300	320	<100	300	<100	<100	<100	880	<100
	C10 - C16	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	280	<100
BTEXN	Benzene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenz	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	meta- & p	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	ortho-Xyl	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Total Xyle	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Sum of BT	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Naphthale	µg/L	N/A	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

A.22 Hydrocarbons at NODH1

Table A 22: Hydrocarbons at WDL212-04 NODH1 site.

NODH1																			
Group of Hydrocarbon	Hydrocarbon	Units	WDL212-04 Trigger Value	LOR	23/01/2023	27/02/2023	20/03/2023	17/04/2023	9/05/2023	13/07/2023	3/08/2023	19/10/2023	23/01/2024	22/02/2024	21/03/2024	18/04/2024	30/05/2024	13/06/2024	19/09/2024
Polycyclic Aromatic Hydrocarbons	Naphthale	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Acenapht	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Acenapht	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Fluorene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Phenanth	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Anthracen	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Fluoranth	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Pyrene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benz(a)an	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Chrysene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(b+j	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(k)f	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(a)p	µg/L	N/A	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
	Indeno(1.	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Dibenz(a.	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(g.h	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Sum of po	µg/L	N/A	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
	Benzo(a)p	µg/L	N/A	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
Total Petroleum Hydrocarbons	C6 - C9 Fra	µg/L	N/A	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14	µg/L	N/A	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28	µg/L	N/A	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36	µg/L	N/A	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36	µg/L	N/A	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Recoverable Petroleum Hydrocarbons	C6 - C10 F	µg/L	N/A	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 F	µg/L	N/A	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C16	µg/L	N/A	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C16 - C34	µg/L	N/A	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C34 - C40	µg/L	N/A	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C10 - C40	µg/L	N/A	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C10 - C16	µg/L	N/A	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
BTEXN	Benzene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	N/A	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenz	µg/L	N/A	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	meta- & p	µg/L	N/A	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	ortho-Xyl	µg/L	N/A	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Total Xyle	µg/L	N/A	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Sum of BT	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Naphthale	µg/L	N/A	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

A.23 Hydrocarbons at SODH1

Table A 23: Hydrocarbons at WDL212-04 SODH1 site.

SODH1													
Group of Hydrocarbon	Hydrocarbon	Units	WDL212-04 Trigger Value	LOR	22/12/2022	23/01/2023	27/02/2023	20/03/2023	17/04/2023	9/05/2023	22/02/2024	21/03/2024	19/09/2024
Polycyclic Aromatic Hydrocarbons	Naphthale	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Acenapht	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Acenapht	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Fluorene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Phenanth	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Anthracer	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Fluoranth	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Pyrene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Benz(a)an	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Chrysene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(b+j	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(k)f	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(a)p	µg/L	N/A	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Indeno(1.	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Dibenz(a.	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(g.h	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Sum of po	µg/L	N/A	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)p	µg/L	N/A	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Petroleum Hydrocarbons	C6 - C9 Fra	µg/L	N/A	20		<20	<20	30	<20	<20	<20	<20	<20
	C10 - C14	µg/L	N/A	50		<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36	µg/L	N/A	50		<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36	µg/L	N/A	50		<50	<50	<50	<50	<50	<50	<50	<50
Total Recoverable Petroleum Hydrocarbons	C6 - C10 F	µg/L	N/A	20		<20	<20	30	<20	<20	<20	<20	<20
	C6 - C10 F	µg/L	N/A	20		<20	<20	30	<20	<20	<20	<20	<20
	C10 - C16	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100
	C16 - C34	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100
	C34 - C40	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100
	C10 - C40	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100
	C10 - C16	µg/L	N/A	100		<100	<100	<100	<100	<100	<100	<100	<100
BTEXN	Benzene	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenz	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2
	meta- & p	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2
	ortho-Xyl	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2
	Total Xyle	µg/L	N/A	2		<2	<2	<2	<2	<2	<2	<2	<2
	Sum of BT	µg/L	N/A	1		<1	<1	<1	<1	<1	<1	<1	<1
	Naphthale	µg/L	N/A	5		<5	<5	<5	<5	<5	<5	<5	<5

A.24 Hydrocarbons at ILCP and ISCP

Table A 24: Hydrocarbons at WDL212-04 Cooling ponds sites.

					ILCP							ISCP						
Group of Hydrocarbon	Hydrocarbon	Units	WDL212-04 Trigger Value	LOR	27/2/2023	9/05/2023	3/08/2023	22/11/2023	22/02/2024	30/05/2024	21/08/2024	27/02/2023	9/05/2023	3/08/2023	22/11/2023	22/02/2024	30/05/2024	21/08/2024
Polycyclic Aromatic Hydrocarbons	Naphthalene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Acenaphthylene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Acenaphthene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Fluorene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Phenanthrene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Anthracene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Fluoranthene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Pyrene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benz(a)anthracene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Chrysene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(b+j)fluoranthene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(a)pyrene	µg/L	N/A	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
	Indeno(1.2.3.cd)pyrene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Dibenz(a.h)anthracene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(g.h.i)perylene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Sum of polycyclic aromatic hydr	µg/L	N/A	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
	Benzo(a)pyrene TEQ (zero)	µg/L	N/A	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
Total Petroleum Hydrocarbons	C6 - C9 Fraction	µg/L	N/A	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20.0	<20
	C10 - C14 Fraction	µg/L	N/A	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	650	<50
	C15 - C28 Fraction	µg/L	N/A	100	<100	2160	1220	<100	<100	<100	<100	<100	210	260	580	<100	440	<100
	C29 - C36 Fraction	µg/L	N/A	50	<50	60	<50	<50	<50	<50	<50	<50	<50	<50	100	<50	<50.0	<50
	C10 - C36 Fraction (sum)	µg/L	N/A	50	<50	2290	1220	<50	<50	<50	<50	<50	210	260	680	<50	1090	<50
Total Recoverable Petroleum Hydrocarbons	C6 - C10 Fraction	µg/L	N/A	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction minus BTEX	µg/L	N/A	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C16 Fraction	µg/L	N/A	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C16 - C34 Fraction	µg/L	N/A	100	<100	2180	1270	<100	<100	<100	<100	<100	200	220	600	<100	460	<100
	C34 - C40 Fraction	µg/L	N/A	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C10 - C40 Fraction (sum)	µg/L	N/A	100	<100	2180	1270	<100	<100	<100	<100	<100	200	220	600	<100	460	<100
	C10 - C16 Fraction minus Naphth	µg/L	N/A	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
BTEXN	Benzene	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	N/A	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	N/A	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	meta- & para-Xylene	µg/L	N/A	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	ortho-Xylene	µg/L	N/A	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Total Xylenes	µg/L	N/A	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Sum of BTEX	µg/L	N/A	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Naphthalene	µg/L	N/A	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

APPENDIX CERTIFICATES OF ANALYSIS

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 8689	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

right solutions. right partner.

TROP WATER

Page	: 2 of 15
Work Order	: ES2340540
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.
- 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.

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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	---	---	---

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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	---	---	---

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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	88.3	----	----	----
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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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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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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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 13:46	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									

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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	26.0
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

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

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	---	---	---	---

TROP WATER

Page	:	12 of 15
Work Order	:	ES2340540
Client	:	TROPICAL WATER NORTHERN TERRITORY
Project	:	CIPS WDL

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	---	---	---	---

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	---	---	---	---

Page	: 14 of 15
Work Order	: ES2340540
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

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	---	---	---	---	

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
EP080-SD: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	67	137
Toluene-D8	2037-26-5	74	134
4-Bromofluorobenzene	460-00-4	73	137

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	: **ES2344229**	Page	: 1 of 7
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	: 21-Dec-2023 12:30
Order number	: ---	Date Analysis Commenced	: 22-Dec-2023
C-O-C number	: ---	Issue Date	: 03-Jan-2024 13:24
Sampler	: DUC NGUYEN, 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
- 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 7
Work Order	: ES2344229
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP2	----	----	----	----
				Sampling date / time	20-Dec-2023 11:10	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2344229-001	------	------	------	------
					Result	---	---	---	---
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	---	5	mg/L		**14**	---	---	---	---
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.05**	---	---	---	---
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		**0.033**	---	---	---	---
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.06**	---	---	---	---
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	---	---	---	---
Copper	7440-50-8	0.001	mg/L		**0.003**	---	---	---	---
Cobalt	7440-48-4	0.001	mg/L		<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L		**0.001**	---	---	---	---
Lead	7439-92-1	0.001	mg/L		<0.001	---	---	---	---
Zinc	7440-66-6	0.005	mg/L		**0.071**	---	---	---	---
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		**0.31**	---	---	---	---

TROP WATER

Page : 4 of 7
Work Order : ES2344229
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP2	----	----	----	----
				Sampling date / time	20-Dec-2023 11:10	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2344229-001	-------	------	------	------
					Result	---	---	---	---
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	---	0.1	mg/L		**1.9**	----	---	---	---
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	---	0.1	mg/L		**2.2**	----	---	---	---
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	---	0.01	mg/L		**0.06**	----	---	---	---
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	----	---	---	---

TROP WATER

Page : 5 of 7
Work Order : ES2344229
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

ALS

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP2	----	----	----	----
				Sampling date / time	20-Dec-2023 11:10	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2344229-001	------	------	------	------
					Result	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	---	100	µg/L		**300**	----	---	---	---
C29 - C36 Fraction	---	50	µg/L		<50	----	---	---	---
^ C10 - C36 Fraction (sum)	---	50	µg/L		**300**	----	---	---	---
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		**300**	----	---	---	---
>C34 - C40 Fraction	---	100	µg/L		<100	----	---	---	---
^ >C10 - C40 Fraction (sum)	---	100	µg/L		**300**	----	---	---	---
^ >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	%		**21.8**	----	---	---	---
2-Chlorophenol-D4	93951-73-6	1.0	%		**43.0**	----	---	---	---
2.4.6-Tribromophenol	118-79-6	1.0	%		**39.2**	----	---	---	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**55.1**	----	---	---	---

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP2	----	----	----	----
				Sampling date / time	20-Dec-2023 11:10	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2344229-001	-------	------	------	------
					Result	---	---	---	---
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	1.0	%		65.0	----	---	---	---
4-Terphenyl-d14	1718-51-0	1.0	%		64.3	----	---	---	---
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		126	----	---	---	---
Toluene-D8	2037-26-5	2	%		118	----	---	---	---
4-Bromofluorobenzene	460-00-4	2	%		111	----	---	---	---

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	: ES2402189	Page	: 1 of 7
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	: 24-Jan-2024 08:30
Order number	: —	Date Analysis Commenced	: 24-Jan-2024
C-O-C number	: —	Issue Date	: 31-Jan-2024 13:28
Sampler	: GODFRED DUODU. 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*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

Page	: 2 of 7
Work Order	: ES2402189
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.

TROP WATER

Page	: 3 of 7
Work Order	: ES2402189
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	---	---
				Sampling date / time	23-Jan-2024 00:00	23-Jan-2024 00:00	23-Jan-2024 00:00	---	---
Compound	CAS Number	LOR	Unit		ES2402189-001	ES2402189-002	ES2402189-003	-------	-------
					Result	Result	Result	---	---
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	---	5	mg/L		<5	<5	14	---	---
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	0.01	0.01	---	---
Arsenic	7440-38-2	0.001	mg/L		0.004	0.001	<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	<0.001	<0.001	---	---
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	---	---
Copper	7440-50-8	0.001	mg/L		0.004	0.002	<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		0.008	0.017	0.048	---	---
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		0.01	0.10	0.03	---	---
Arsenic	7440-38-2	0.001	mg/L		0.004	0.002	<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	0.001	<0.001	---	---
Copper	7440-50-8	0.001	mg/L		0.007	0.004	0.002	---	---
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	<0.001	---	---
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	---	---
Zinc	7440-66-6	0.005	mg/L		0.016	0.040	0.123	---	---
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		0.46	0.19	<0.01	---	---

TROP WATER

Page : 4 of 7
Work Order : ES2402189
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	—	—
				Sampling date / time	23-Jan-2024 00:00	23-Jan-2024 00:00	23-Jan-2024 00:00	—	—
Compound	CAS Number	LOR	Unit		ES2402189-001	ES2402189-002	ES2402189-003	———	———
					Result	Result	Result	—	—
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	—	0.1	mg/L		2.1	0.8	1.4	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
* Total Nitrogen as N	—	0.1	mg/L		2.6	1.0	1.4	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	—	0.01	mg/L		0.20	0.06	0.02	----	----
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	<50	----	----

TROP WATER

Page : 5 of 7
Work Order : ES2402189
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	---	---
				Sampling date / time	23-Jan-2024 00:00	23-Jan-2024 00:00	23-Jan-2024 00:00	---	---
Compound	CAS Number	LOR	Unit		ES2402189-001	ES2402189-002	ES2402189-003	------	-------
					Result	Result	Result	---	---
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	---	100	µg/L		<100	<100	<100	----	----
C29 - C36 Fraction	---	50	µg/L		<50	<50	<50	----	----
* C10 - C36 Fraction (sum)	---	50	µg/L		<50	<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		<100	<100	<100	----	----
>C34 - C40 Fraction	---	100	µg/L		<100	<100	<100	----	----
* >C10 - C40 Fraction (sum)	---	100	µg/L		<100	<100	<100	----	----
* >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	%		22.3	23.4	21.7	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		36.7	44.3	44.6	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		33.6	43.0	45.5	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		54.0	56.4	52.1	----	----

Page	: 6 of 7
Work Order	: ES2402189
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	---	---
				Sampling date / time	23-Jan-2024 00:00	23-Jan-2024 00:00	23-Jan-2024 00:00	---	---
Compound	CAS Number	LOR	Unit		ES2402189-001	ES2402189-002	ES2402189-003	---	---
					Result	Result	Result	---	---
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	1.0	%		71.6	62.1	61.9	---	---
4-Terphenyl-d14	1718-51-0	1.0	%		64.0	80.1	74.2	---	---
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		126	118	109	---	---
Toluene-D8	2037-26-5	2	%		106	102	96.5	---	---
4-Bromofluorobenzene	460-00-4	2	%		107	102	96.6	---	---

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	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

CERTIFICATE OF ANALYSIS

Work Order	: ES2405729	Page	: 1 of 14
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	: 23-Feb-2024 15:00
Order number	: ---	Date Analysis Commenced	: 24-Feb-2024
C-O-C number	: ---	Issue Date	: 29-Feb-2024 13:45
Sampler	: GODFRED DUODU, Quentin Vander-Mower, 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

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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*
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.

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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.
- 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.
- EG035: Poor matrix spike recovery was obtained for Mercury on sample ES2405324 # 1. Confirmed by re-analysis.
- 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

Page : 3 of 14
Work Order : ES2405729
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NODH2	SODH2	---	---	---
			Sampling date / time	22-Feb-2024 08:15	22-Feb-2024 07:54	---	---	---
Compound	CAS Number	LOR	Unit	ES2405729-010	ES2405729-011	----	----	----
				Result	Result	---	---	---
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	55.6	52.6	---	---	---
EG005(ED093)T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	8440	8100	---	---	---
Arsenic	7440-38-2	5	mg/kg	8	12	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	<1	---	---	---
Chromium	7440-47-3	2	mg/kg	23	25	---	---	---
Cobalt	7440-48-4	2	mg/kg	5	4	---	---	---
Copper	7440-50-8	5	mg/kg	5	5	---	---	---
Lead	7439-92-1	5	mg/kg	9	8	---	---	---
Nickel	7440-02-0	2	mg/kg	7	7	---	---	---
Zinc	7440-66-6	5	mg/kg	23	17	---	---	---
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	0.4	0.4	---	---	---
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	960	820	---	---	---
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	960	820	---	---	---
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	391	348	---	---	---
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	---	---	---

TROP WATER

Page : 4 of 14
Work Order : ES2405729
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NODH2	SODH2	---	---	---
				Sampling date / time	22-Feb-2024 08:15	22-Feb-2024 07:54	---	---	---
Compound	CAS Number	LOR	Unit		ES2405729-010	ES2405729-011	----	----	----
					Result	Result	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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	---	---	---
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	---	---	---

TROP WATER

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Work Order : ES2405729
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NODH2	SODH2	---	---	---
				Sampling date / time	22-Feb-2024 08:15	22-Feb-2024 07:54	---	---	---
Compound	CAS Number	LOR	Unit		ES2405729-010	ES2405729-011	-----	-----	-----
					Result	Result	---	---	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>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									
Phenol-d6	13127-88-3	0.5	%		98.5	90.5	---	---	---
2-Chlorophenol-D4	93951-73-6	0.5	%		95.7	88.0	---	---	---
2.4.6-Tribromophenol	118-79-6	0.5	%		88.4	84.7	---	---	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		89.2	81.9	---	---	---
Anthracene-d10	1719-06-8	0.5	%		103	99.0	---	---	---
4-Terphenyl-d14	1718-51-0	0.5	%		103	101	---	---	---
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		85.0	76.9	---	---	---
Toluene-D8	2037-26-5	0.2	%		85.0	77.5	---	---	---
4-Bromofluorobenzene	460-00-4	0.2	%		89.8	82.0	---	---	---

TROP WATER

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Work Order : ES2405729
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	NODH1	ADP2	ILCP	ISCP
				Sampling date / time	22-Feb-2024 09:25	22-Feb-2024 10:05	22-Feb-2024 10:56	22-Feb-2024 10:36	22-Feb-2024 10:30
Compound	CAS Number	LOR	Unit		ES2405729-001	ES2405729-002	ES2405729-003	ES2405729-004	ES2405729-005
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	---	5	mg/L		<5	<5	6	7	5
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		0.01	0.01	0.06	<0.01	0.41
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	0.0002	<0.0001	0.0003
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	0.002	<0.001	0.006
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	0.002
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	0.002	<0.001	0.004
Zinc	7440-66-6	0.005	mg/L		0.009	0.073	0.346	<0.005	0.674
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		0.07	0.13	0.41	0.02	0.75
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	0.0002	<0.0001	0.0004
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	0.001	<0.001	0.002
Copper	7440-50-8	0.001	mg/L		<0.001	0.001	0.006	<0.001	0.009
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	0.004
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	0.002	<0.001	0.004
Zinc	7440-66-6	0.005	mg/L		0.010	0.076	0.435	<0.005	0.708
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	0.0004	<0.0001
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	---	0.01	mg/L		1.24	0.52	3.00	<0.01	2.70

TROP WATER

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Work Order : ES2405729
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	NODH1	ADP2	ILCP	ISCP
				Sampling date / time	22-Feb-2024 09:25	22-Feb-2024 10:05	22-Feb-2024 10:56	22-Feb-2024 10:36	22-Feb-2024 10:30
Compound	CAS Number	LOR	Unit		ES2405729-001	ES2405729-002	ES2405729-003	ES2405729-004	ES2405729-005
					Result	Result	Result	Result	Result
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		0.5	0.3	1.1	1.6	1.2
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		1.7	0.8	4.1	1.6	3.9
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.02	0.03	0.02	0.06	0.02
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

TROP WATER

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Work Order : ES2405729
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	NODH1	ADP2	ILCP	ISCP
				Sampling date / time	22-Feb-2024 09:25	22-Feb-2024 10:05	22-Feb-2024 10:56	22-Feb-2024 10:36	22-Feb-2024 10:30
Compound	CAS Number	LOR	Unit		ES2405729-001	ES2405729-002	ES2405729-003	ES2405729-004	ES2405729-005
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
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									
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	%		20.3	24.4	21.2	24.1	20.8
2-Chlorophenol-D4	93951-73-6	1.0	%		46.1	52.4	47.9	46.2	43.0
2.4.6-Tribromophenol	118-79-6	1.0	%		37.1	47.5	55.2	34.8	52.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		53.9	54.4	55.4	59.4	60.6

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	NODH1	ADP2	ILCP	ISCP
				Sampling date / time	22-Feb-2024 09:25	22-Feb-2024 10:05	22-Feb-2024 10:56	22-Feb-2024 10:36	22-Feb-2024 10:30
Compound	CAS Number	LOR	Unit		ES2405729-001	ES2405729-002	ES2405729-003	ES2405729-004	ES2405729-005
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	1.0	%		59.8	61.4	57.3	59.4	71.0
4-Terphenyl-d14	1718-51-0	1.0	%		58.0	62.2	58.0	62.8	64.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		106	105	102	104	109
Toluene-D8	2037-26-5	2	%		99.7	99.1	93.0	94.5	99.8
4-Bromofluorobenzene	460-00-4	2	%		114	112	107	109	114

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Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SODH3	SODH4	NODH3	NODH4	---
			Sampling date / time	22-Feb-2024 07:48	22-Feb-2024 07:43	22-Feb-2024 08:10	22-Feb-2024 08:04	---
Compound	CAS Number	LOR	Unit	ES2405729-006	ES2405729-007	ES2405729-008	ES2405729-009	------
				Result	Result	Result	Result	---
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	<5	<5	<5	---
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.005	µg/L	<0.005	<0.005	<0.005	<0.005	---
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.005	µg/L	<0.005	<0.005	<0.005	<0.005	---
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS								
Aluminium	7429-90-5	5	µg/L	<5	<5	9	<5	---
Arsenic	7440-38-2	0.5	µg/L	1.1	1.1	1.1	1.1	---
Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	---
Chromium	7440-47-3	0.5	µg/L	0.9	<0.5	<0.5	<0.5	---
Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	---
Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	---
Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	---
Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	---
Zinc	7440-66-6	5	µg/L	<5	<5	<5	<5	---
EG093T: Total Metals in Saline Water by ORC-ICPMS								
Aluminium	7429-90-5	5	µg/L	44	68	37	24	---
Arsenic	7440-38-2	0.5	µg/L	1.0	1.1	1.1	1.3	---
Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	---
Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	---
Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	---
Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	---
Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	---
Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	---
Zinc	7440-66-6	5	µg/L	<5	<5	<5	<5	---
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	<0.01	0.02	---

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Client : TROPICAL WATER NORTHERN TERRITORY
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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH3	SODH4	NODH3	NODH4	—
				Sampling date / time	22-Feb-2024 07:48	22-Feb-2024 07:43	22-Feb-2024 08:10	22-Feb-2024 08:04	—
Compound	CAS Number	LOR	Unit		ES2405729-006	ES2405729-007	ES2405729-008	ES2405729-009	———
					Result	Result	Result	Result	—
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	—	0.1	mg/L		0.2	0.1	0.2	0.2	—
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	—	0.1	mg/L		0.2	0.1	0.2	0.2	—
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	—	0.01	mg/L		0.04	0.02	0.03	0.04	—
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	—

TROP WATER

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Work Order : ES2405729
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SODH3	SODH4	NODH3	NODH4	----
			Sampling date / time	22-Feb-2024 07:48	22-Feb-2024 07:43	22-Feb-2024 08:10	22-Feb-2024 08:04	----
Compound	CAS Number	LOR	Unit	ES2405729-006	ES2405729-007	ES2405729-008	ES2405729-009	----
				Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued								
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	----
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	%	24.4	24.6	26.8	27.3	----
2-Chlorophenol-D4	93951-73-6	1.0	%	48.2	46.6	51.4	52.8	----
2.4.6-Tribromophenol	118-79-6	1.0	%	40.4	40.0	45.7	45.0	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	54.9	50.4	54.5	55.6	----

TROP WATER

Page	: 13 of 14
Work Order	: ES2405729
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH3	SODH4	NODH3	NODH4	----
				Sampling date / time	22-Feb-2024 07:48	22-Feb-2024 07:43	22-Feb-2024 08:10	22-Feb-2024 08:04	----
Compound	CAS Number	LOR	Unit		ES2405729-006	ES2405729-007	ES2405729-008	ES2405729-009	------
					Result	Result	Result	Result	----
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	1.0	%		59.9	59.9	64.9	62.2	----
4-Terphenyl-d14	1718-51-0	1.0	%		60.1	58.2	65.6	67.3	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		81.2	108	108	106	----
Toluene-D8	2037-26-5	2	%		80.0	92.6	99.8	94.2	----
4-Bromofluorobenzene	460-00-4	2	%		81.4	110	114	110	----

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	: ES2409329	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	: 22-Mar-2024 08:30
Order number	: ---	Date Analysis Commenced	: 25-Mar-2024
C-O-C number	: ---	Issue Date	: 02-Apr-2024 13:39
Sampler	: GODFRED DUODU, 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

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
a = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.

TROP WATER

Page	3 of 6
Work Order	ES2409329
Client	TROPICAL WATER NORTHERN TERRITORY
Project	CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ADP1	NODH1	ADP2	---
				Sampling date / time	21-Mar-2024 11:30	21-Mar-2024 10:18	21-Mar-2024 10:40	21-Mar-2024 11:10	---
Compound	CAS Number	LOR	Unit		ES2409329-001	ES2409329-002	ES2409329-003	ES2409329-004	---
					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		0.02	<0.01	0.04	0.22	---
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	0.003	<0.001	<0.001	---
Copper	7440-50-8	0.001	mg/L		<0.001	0.004	<0.001	0.002	---
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		0.042	<0.005	0.062	0.015	---
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		0.17	0.02	0.13	1.29	---
Arsenic	7440-38-2	0.001	mg/L		<0.001	0.003	<0.001	0.032	---
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	0.0050	---
Chromium	7440-47-3	0.001	mg/L		<0.001	0.004	<0.001	0.001	---
Copper	7440-50-8	0.001	mg/L		<0.001	0.001	<0.001	0.015	---
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	0.105	---
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	0.149	---
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	0.044	---
Zinc	7440-66-6	0.005	mg/L		0.065	0.005	0.074	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		0.41	0.42	0.46	0.04	---

Page	4 of 6
Work Order	ES2409329
Client	TROPICAL WATER NORTHERN TERRITORY
Project	CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ADP1	NODH1	ADP2	---
				Sampling date / time	21-Mar-2024 11:30	21-Mar-2024 10:15	21-Mar-2024 10:40	21-Mar-2024 11:10	---
Compound	CAS Number	LOR	Unit		ES2409329-001	ES2409329-002	ES2409329-003	ES2409329-004	---
					Result	Result	Result	Result	---
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	---	0.1	mg/L		0.3	2.0	0.5	0.8	---
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	---	0.1	mg/L		0.7	2.4	1.0	0.8	---
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	---	0.01	mg/L		0.02	0.26	0.02	0.02	---
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	---
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	---

TROP WATER

Page	5 of 6
Work Order	ES2409329
Client	TROPICAL WATER NORTHERN TERRITORY
Project	CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH1	ADP1	NODH1	ADP2	---
				Sampling date / time	21-Mar-2024 11:30	21-Mar-2024 10:18	21-Mar-2024 10:40	21-Mar-2024 11:10	---
Compound	CAS Number	LOR	Unit		ES2409329-001	ES2409329-002	ES2409329-003	ES2409329-004	---
					Result	Result	Result	Result	---
EP080: BTEXN - Continued									
^ Sum of BTEX	---	1	µg/L		<1	<1	<1	<1	---
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	---
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		111	112	108	107	---
Toluene-D8	2037-26-5	2	%		101	111	100	104	---
4-Bromofluorobenzene	460-00-4	2	%		119	125	117	117	---

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
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	: ES2412564	Page	: 1 of 7
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	: 19-Apr-2024 08:30
Order number	: —	Date Analysis Commenced	: 19-Apr-2024
C-O-C number	: —	Issue Date	: 30-Apr-2024 13:26
Sampler	: GODFRED DUODU, QUENTIN VANDA		
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:

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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*
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.

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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: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.

TROP WATER

Page : 3 of 7
Work Order : ES2412564
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ADP1	NODH1	ADP2	---	---
			Sampling date / time	18-Apr-2024 09:42	18-Apr-2024 10:05	18-Apr-2024 10:20	---	---
Compound	CAS Number	LOR	Unit	ES2412564-001	ES2412564-002	ES2412564-003	------	------
				Result	Result	Result	---	---
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	---	5	mg/L	<5	<5	<5	---	---
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.22	---	---
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	0.004	0.003	<0.001	---	---
Copper	7440-50-8	0.001	mg/L	0.003	0.003	<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	<0.001	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	---	---
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	---	---
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.03	0.16	0.22	---	---
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	0.004	<0.001	---	---
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	---	---
Copper	7440-50-8	0.001	mg/L	0.007	0.007	0.002	---	---
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	0.021	0.016	0.018	---	---
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	0.65	0.62	0.01	---	---

TROP WATER

Page : 4 of 7
Work Order : ES2412564
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	---	---
				Sampling date / time	18-Apr-2024 09:42	18-Apr-2024 10:05	18-Apr-2024 10:20	---	---
Compound	CAS Number	LOR	Unit		ES2412564-001	ES2412564-002	ES2412564-003	---	---
					Result	Result	Result	---	---
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	---	0.1	mg/L		2.1	2.1	1.3	---	---
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
* Total Nitrogen as N	---	0.1	mg/L		2.8	2.7	1.3	---	---
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	---	0.01	mg/L		0.26	0.27	0.02	---	---
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	300	---	---

TROP WATER

Page : 5 of 7
Work Order : ES2412564
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	---	---
				Sampling date / time	18-Apr-2024 09:42	18-Apr-2024 10:05	18-Apr-2024 10:20	---	---
Compound	CAS Number	LOR	Unit		ES2412564-001	ES2412564-002	ES2412564-003	---	---
					Result	Result	Result	---	---
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	---	100	µg/L		<100	<100	400	---	---
C29 - C36 Fraction	---	50	µg/L		<50	<50	140	---	---
* C10 - C36 Fraction (sum)	---	50	µg/L		<50	<50	540	---	---
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	280	---	---
>C16 - C34 Fraction	---	100	µg/L		<100	<100	490	---	---
>C34 - C40 Fraction	---	100	µg/L		<100	<100	110	---	---
* >C10 - C40 Fraction (sum)	---	100	µg/L		<100	<100	880	---	---
* >C10 - C16 Fraction minus Naphthalene (F2)	---	100	µg/L		<100	<100	280	---	---
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	%		23.8	26.5	19.2	---	---
2-Chlorophenol-D4	93951-73-6	1.0	%		45.3	51.4	32.6	---	---
2.4.6-Tribromophenol	118-79-6	1.0	%		31.7	42.0	20.9	---	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		51.2	61.8	57.6	---	---

Page	: 6 of 7
Work Order	: ES2412564
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ADP1	NODH1	ADP2	---	---
			Sampling date / time	18-Apr-2024 09:42	18-Apr-2024 10:05	18-Apr-2024 10:20	---	---
Compound	CAS Number	LOR	Unit	ES2412564-001	ES2412564-002	ES2412564-003	------	------
				Result	Result	Result	---	---
EP075(SIM)T: PAH Surrogates - Continued								
Anthracene-d10	1719-06-8	1.0	%	79.4	87.8	74.0	---	---
4-Terphenyl-d14	1718-51-0	1.0	%	84.6	87.7	75.1	---	---
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	108	125	127	---	---
Toluene-D8	2037-26-5	2	%	116	127	130	---	---
4-Bromofluorobenzene	460-00-4	2	%	109	132	134	---	---

Page	: 7 of 7
Work Order	: ES2412564
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-d5	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	: ES2417721	Page	: 1 of 15
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	: 31-May-2024 08:30
Order number	: ---	Date Analysis Commenced	: 31-May-2024
C-O-C number	: ---	Issue Date	: 07-Jun-2024 17:36
Sampler	: ARNOLD CUANAN, GODFRED DUODU, LABIN MAGAR		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 9		
No. of samples analysed	: 9		

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
Sanjeshni Jyoti	Senior Chemist Volatiles	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.
- EP075(SIM): LOR for particular sample(s) raised due to high moisture content.
- 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

Page	3 of 15
Work Order	ES2417721
Client	TROPICAL WATER NORTHERN TERRITORY
Project	CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SODH2	---	---	---	---
				Sampling date / time	30-May-2024 11:47	---	---	---	---
Compound	CAS Number	LOR	Unit		ES2417721-009	---	---	---	---
					Result	---	---	---	---
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	---	1.0	%		53.5	---	---	---	---
EG005(ED093)T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		15000	---	---	---	---
Arsenic	7440-38-2	5	mg/kg		16	---	---	---	---
Cadmium	7440-43-9	1	mg/kg		<1	---	---	---	---
Chromium	7440-47-3	2	mg/kg		39	---	---	---	---
Cobalt	7440-48-4	2	mg/kg		6	---	---	---	---
Copper	7440-50-8	5	mg/kg		12	---	---	---	---
Lead	7439-92-1	5	mg/kg		13	---	---	---	---
Nickel	7440-02-0	2	mg/kg		11	---	---	---	---
Zinc	7440-66-6	5	mg/kg		106	---	---	---	---
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		1840	---	---	---	---
EK062: Total Nitrogen as N (TKN + NOx)									
* Total Nitrogen as N	---	20	mg/kg		1840	---	---	---	---
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	---	2	mg/kg		507	---	---	---	---
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	---	---	---	---

TROP WATER

Page : 4 of 15
Work Order : ES2417721
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SODH2	—	—	—	—
				Sampling date / time	30-May-2024 11:47	—	—	—	—
Compound	CAS Number	LOR	Unit	ES2417721-009	———	———	———	———	
				Result	—	—	—	—	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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	----	----	----	----	
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	----	----	----	----	

TROP WATER

Page : 5 of 15
Work Order : ES2417721
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SODH2	---	---	---	---
				Sampling date / time	30-May-2024 11:47	---	---	---	---
Compound	CAS Number	LOR	Unit		ES2417721-009	------	------	------	------
					Result	---	---	---	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>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									
Phenol-d6	13127-88-3	0.5	%		75.4	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		81.9	---	---	---	---
2.4.6-Tribromophenol	118-79-6	0.5	%		81.9	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		87.3	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		92.8	---	---	---	---
4-Terphenyl-d14	1718-51-0	0.5	%		90.0	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		82.4	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		80.7	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		84.0	---	---	---	---

TROP WATER

Page : 6 of 15
Work Order : ES2417721
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ILCP	ISCP	SODH3
				Sampling date / time	30-May-2024 13:35	30-May-2024 13:50	30-May-2024 14:12	30-May-2024 14:06	30-May-2024 12:22
Compound	CAS Number	LOR	Unit		ES2417721-001	ES2417721-002	ES2417721-003	ES2417721-004	ES2417721-005
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	---	5	mg/L		<5	<5	<5	10	61
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	0.14	----
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	0.002	----
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	0.002	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	0.009	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	0.16	----
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	0.002	----
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	0.003	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	0.009	0.017	----
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	<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									

TROP WATER

Page : 7 of 15
Work Order : ES2417721
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ILCP	ISCP	SODH3
				Sampling date / time	30-May-2024 13:35	30-May-2024 13:50	30-May-2024 14:12	30-May-2024 14:08	30-May-2024 12:22
Compound	CAS Number	LOR	Unit		ES2417721-001	ES2417721-002	ES2417721-003	ES2417721-004	ES2417721-005
					Result	Result	Result	Result	Result
EG035T: Total Recoverable Mercury by FIMS - Continued									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<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		---	----	----	----	1.2
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		---	----	----	----	273
Arsenic	7440-38-2	0.5	µg/L		---	----	----	----	1.5
Cadmium	7440-43-9	0.2	µg/L		---	----	----	----	<0.2
Chromium	7440-47-3	0.5	µg/L		---	----	----	----	0.6
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		0.07	0.08	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	---	0.1	mg/L		0.4	0.2	1.3	1.8	0.2
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
* Total Nitrogen as N	---	0.1	mg/L		0.5	0.3	1.3	1.8	0.2

TROP WATER

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Work Order : ES2417721
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ILCP	ISCP	SODH3
				Sampling date / time	30-May-2024 13:35	30-May-2024 13:50	30-May-2024 14:12	30-May-2024 14:08	30-May-2024 12:22
Compound	CAS Number	LOR	Unit		ES2417721-001	ES2417721-002	ES2417721-003	ES2417721-004	ES2417721-005
					Result	Result	Result	Result	Result
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	---	0.01	mg/L		<0.01	0.02	0.03	0.02	0.04
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	650	<50
C15 - C28 Fraction	---	100	µg/L		<100	<100	<100	440	<100
C29 - C36 Fraction	---	50	µg/L		<50	<50	<50	<50	<50
* C10 - C36 Fraction (sum)	---	50	µg/L		<50	<50	<50	1090	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									

TROP WATER

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Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ILCP	ISCP	SODH3
				Sampling date / time	30-May-2024 13:35	30-May-2024 13:50	30-May-2024 14:12	30-May-2024 14:06	30-May-2024 12:22
Compound	CAS Number	LOR	Unit		ES2417721-001	ES2417721-002	ES2417721-003	ES2417721-004	ES2417721-005
					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	<100	<100	460	<100
>C34 - C40 Fraction	---	100	µg/L		<100	<100	<100	<100	<100
* >C10 - C40 Fraction (sum)	---	100	µg/L		<100	<100	<100	460	<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	%		24.2	24.4	24.3	25.8	26.3
2-Chlorophenol-D4	93951-73-6	1.0	%		49.8	52.0	50.6	31.3	53.6
2.4.6-Tribromophenol	118-79-6	1.0	%		49.6	51.7	41.8	34.2	42.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		68.3	72.8	60.2	60.9	57.6
Anthracene-d10	1719-06-8	1.0	%		85.9	91.8	78.0	82.1	83.9
4-Terphenyl-d14	1718-51-0	1.0	%		88.9	93.2	78.6	82.1	86.4
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		101	99.0	112	109	104

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ILCP	ISCP	SODH3
				Sampling date / time	30-May-2024 13:35	30-May-2024 13:50	30-May-2024 14:12	30-May-2024 14:08	30-May-2024 12:22
Compound	CAS Number	LOR	Unit		ES2417721-001	ES2417721-002	ES2417721-003	ES2417721-004	ES2417721-005
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	2	%		114	116	130	128	117
4-Bromofluorobenzene	460-00-4	2	%		123	123	131	128	123

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Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SODH4	NODH3	NODH4	---	---
			Sampling date / time	30-May-2024 12:30	30-May-2024 11:24	30-May-2024 11:10	---	---
Compound	CAS Number	LOR	Unit	ES2417721-006	ES2417721-007	ES2417721-008	------	-------
				Result	Result	Result	---	---
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	---	5	mg/L	60	42	35	---	---
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.005	µg/L	<0.005	<0.005	<0.005	---	---
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.005	µg/L	<0.005	<0.005	<0.005	---	---
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	1.5	1.3	1.4	---	---
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	239	243	239	---	---
Arsenic	7440-38-2	0.5	µg/L	1.6	1.6	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	0.5	---	---
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	---	---
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	---	0.01	mg/L	<0.01	<0.01	<0.01	---	---

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH4	NODH3	NODH4	---	---
				Sampling date / time	30-May-2024 12:30	30-May-2024 11:24	30-May-2024 11:10	---	---
Compound	CAS Number	LOR	Unit		ES2417721-006	ES2417721-007	ES2417721-008	------	------
					Result	Result	Result	---	---
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	---	0.1	mg/L		0.3	0.3	0.3	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
* Total Nitrogen as N	---	0.1	mg/L		0.3	0.3	0.3	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	---	0.01	mg/L		0.05	0.03	0.03	----	----
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	<50	----	----

TROP WATER

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Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH4	NODH3	NODH4	---	---
				Sampling date / time	30-May-2024 12:30	30-May-2024 11:24	30-May-2024 11:10	---	---
Compound	CAS Number	LOR	Unit		ES2417721-006	ES2417721-007	ES2417721-008	---	---
					Result	Result	Result	---	---
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	---	100	µg/L		<100	<100	<100	---	---
C29 - C36 Fraction	---	50	µg/L		<50	<50	<50	---	---
^ C10 - C36 Fraction (sum)	---	50	µg/L		<50	<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		<100	<100	<100	---	---
>C34 - C40 Fraction	---	100	µg/L		<100	<100	<100	---	---
^ >C10 - C40 Fraction (sum)	---	100	µg/L		<100	<100	<100	---	---
^ >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	%		31.6	32.0	32.1	---	---
2-Chlorophenol-D4	93951-73-6	1.0	%		61.2	60.9	60.8	---	---
2.4.6-Tribromophenol	118-79-6	1.0	%		55.3	44.4	40.0	---	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		78.0	68.4	68.0	---	---

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Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SODH4	NODH3	NODH4	---	---
				Sampling date / time	30-May-2024 12:30	30-May-2024 11:24	30-May-2024 11:10	---	---
Compound	CAS Number	LOR	Unit		ES2417721-006	ES2417721-007	ES2417721-008	----	----
					Result	Result	Result	---	---
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	1.0	%		90.7	88.6	89.2	----	---
4-Terphenyl-d14	1718-51-0	1.0	%		88.6	91.3	91.4	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		118	101	103	----	----
Toluene-D8	2037-26-5	2	%		126	113	115	----	---
4-Bromofluorobenzene	460-00-4	2	%		128	119	120	----	---

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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	: ES2419378	Page	: 1 of 7
Client	: TROPICAL WATER NORTHERN TERRITORY	Laboratory	: Environmental Division Sydney
Contact	: SAMPLES	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	: 14-Jun-2024 08:30
Order number	: —	Date Analysis Commenced	: 17-Jun-2024
C-O-C number	: —	Issue Date	: 21-Jun-2024 15:22
Sampler	: Duc Nguyen, GODFRED DUODU		
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
Sanjeshni Jyoti	Senior Chemist Volatiles	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.

TROP WATER

Page : 3 of 7
Work Order : ES2419378
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	—	—	—
				Sampling date / time	13-Jun-2024 11:40	13-Jun-2024 12:01	—	—	—
Compound	CAS Number	LOR	Unit		ES2419378-001	ES2419378-002	———	———	———
					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		<0.001	<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		<0.005	<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		0.13	0.17	----	----	----

TROP WATER

Page : 4 of 7
Work Order : ES2419378
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	---	---	---
				Sampling date / time	13-Jun-2024 11:40	13-Jun-2024 12:01	---	---	---
Compound	CAS Number	LOR	Unit		ES2419378-001	ES2419378-002	----	----	----
					Result	Result	---	---	---
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	---	0.1	mg/L		0.3	0.5	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
* Total Nitrogen as N	---	0.1	mg/L		0.4	0.7	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	---	0.01	mg/L		<0.01	0.01	----	----	----
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	----	----	----

TROP WATER

Page : 5 of 7
Work Order : ES2419378
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	—	—	—
				Sampling date / time	13-Jun-2024 11:40	13-Jun-2024 12:01	—	—	—
Compound	CAS Number	LOR	Unit		ES2419378-001	ES2419378-002	———	———	———
					Result	Result	—	—	—
EP080/071: Total Petroleum Hydrocarbons - Continued									
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	----	----	----
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	%		16.7	23.2	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		33.9	43.7	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		46.7	61.1	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		61.9	70.0	----	----	----

Page	: 6 of 7
Work Order	: ES2419378
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ADP1	NODH1	---	---	---
			Sampling date / time	13-Jun-2024 11:40	13-Jun-2024 12:01	---	---	---
Compound	CAS Number	LOR	Unit	ES2419378-001	ES2419378-002	----	----	----
				Result	Result	---	---	---
EP075(SIM)T: PAH Surrogates - Continued								
Anthracene-d10	1719-06-8	1.0	%	66.9	81.4	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	72.6	87.1	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	2	%	89.5	99.4	----	----	----
Toluene-D8	2037-26-5	2	%	76.5	96.1	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	93.4	104	---	---	---

CERTIFICATE OF ANALYSIS

Work Order	: ES2427414	Page	: 1 of 14
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-Aug-2024 13:30
Order number	: ---	Date Analysis Commenced	: 22-Aug-2024
C-O-C number	: ---	Issue Date	: 29-Aug-2024 17:41
Sampler	: ARNOLD CAUNAN, GODFRED DUODU		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 8		
No. of samples analysed	: 8		

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	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	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.
- EP075(SIM): LOR for particular sample(s) raised due to high moisture content.
- 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

Page : 3 of 14
Work Order : ES2427414
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NODH2	SODH2	---	---	---
			Sampling date / time	21-Aug-2024 10:53	21-Aug-2024 10:13	---	---	---
Compound	CAS Number	LOR	Unit	ES2427414-007	ES2427414-008	----	----	----
				Result	Result	---	---	---
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	---	1.0	%	54.8	57.4	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	16200	11400	----	----	----
Cobalt	7440-48-4	2	mg/kg	7	5	----	----	----
Arsenic	7440-38-2	5	mg/kg	17	13	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	40	29	----	----	----
Copper	7440-50-8	5	mg/kg	8	6	----	----	----
Lead	7439-92-1	5	mg/kg	12	10	----	----	----
Nickel	7440-02-0	2	mg/kg	12	8	----	----	----
Zinc	7440-66-6	5	mg/kg	54	23	----	----	----
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	1.1	0.4	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	---	20	mg/kg	2540	2940	----	----	----
EK062: Total Nitrogen as N (TKN + NOx)								
* Total Nitrogen as N	---	20	mg/kg	2540	2940	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	---	2	mg/kg	1000	1270	----	----	----
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	----	----	----

Page : 4 of 14
Work Order : ES2427414
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NODH2	SODH2	---	---	---
				Sampling date / time	21-Aug-2024 10:53	21-Aug-2024 10:13	---	---	---
Compound	CAS Number	LOR	Unit		ES2427414-007	ES2427414-008	-----	-----	-----
					Result	Result	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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	----	----	----
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	----	----	----

TROP WATER

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Work Order : ES2427414
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NODH2	SODH2	—	—	—
				Sampling date / time	21-Aug-2024 10:53	21-Aug-2024 10:13	—	—	—
Compound	CAS Number	LOR	Unit		ES2427414-007	ES2427414-008	——	——	——
					Result	Result	—	—	—
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>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									
Phenol-d6	13127-88-3	0.5	%		105	88.2	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		91.8	87.6	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		92.2	81.4	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		98.9	91.2	----	----	----
Anthracene-d10	1719-06-8	0.5	%		84.9	82.5	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		80.7	80.6	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		77.0	68.6	----	----	----
Toluene-D8	2037-26-5	0.2	%		78.1	67.0	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		90.0	76.9	----	----	----

TROP WATER

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Work Order : ES2427414
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	21-Aug-2024 08:49	21-Aug-2024 09:10	21-Aug-2024 10:22	21-Aug-2024 10:39	21-Aug-2024 11:00
Compound	CAS Number	LOR	Unit		ES2427414-001	ES2427414-002	ES2427414-003	ES2427414-004	ES2427414-005
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	---	5	mg/L		<5	5	51	64	<5
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.00004	mg/L		<0.00004	<0.00004	<0.00004	<0.00004	<0.00004
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.00004	mg/L		0.00004	<0.00004	<0.00004	<0.00004	<0.00004
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	16	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		<0.5	<0.5	1.4	1.3	1.3
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	2	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	27	589	419	112
Arsenic	7440-38-2	0.5	µg/L		0.6	<0.5	1.9	1.7	1.4
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	2.7	1.4	1.0	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	0.3	0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	4	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		0.7	1.4	0.8	0.8	<0.5
Zinc	7440-66-6	5	µg/L		<5	11	<5	<5	<5
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	---	0.01	mg/L		<0.01	0.08	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ILCP	ISCP	SODH3	SODH4	NODH3
				Sampling date / time	21-Aug-2024 08:49	21-Aug-2024 09:10	21-Aug-2024 10:22	21-Aug-2024 10:39	21-Aug-2024 11:00
Compound	CAS Number	LOR	Unit		ES2427414-001	ES2427414-002	ES2427414-003	ES2427414-004	ES2427414-005
					Result	Result	Result	Result	Result
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	—	0.1	mg/L		1.5	0.8	0.3	0.4	0.3
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
* Total Nitrogen as N	—	0.1	mg/L		1.5	0.9	0.3	0.4	0.3
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	—	0.01	mg/L		0.02	0.01	0.01	<0.01	<0.01
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ILCP	ISCP	SODH3	SODH4	NODH3
				Sampling date / time	21-Aug-2024 08:49	21-Aug-2024 09:10	21-Aug-2024 10:22	21-Aug-2024 10:39	21-Aug-2024 11:00
Compound	CAS Number	LOR	Unit		ES2427414-001	ES2427414-002	ES2427414-003	ES2427414-004	ES2427414-005
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
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									
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	%		33.0	31.5	34.8	29.4	26.5
2-Chlorophenol-D4	93951-73-6	1.0	%		47.7	49.7	60.8	52.3	47.5
2.4.6-Tribromophenol	118-79-6	1.0	%		36.6	33.5	52.2	37.9	32.3
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		65.8	77.0	75.8	67.6	62.7

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ILCP	ISCP	SODH3	SODH4	NODH3
				Sampling date / time	21-Aug-2024 08:49	21-Aug-2024 09:10	21-Aug-2024 10:22	21-Aug-2024 10:39	21-Aug-2024 11:00
Compound	CAS Number	LOR	Unit		ES2427414-001	ES2427414-002	ES2427414-003	ES2427414-004	ES2427414-005
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	1.0	%		55.2	81.6	85.5	63.1	68.9
4-Terphenyl-d14	1718-51-0	1.0	%		71.1	83.8	86.4	74.5	70.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		109	108	111	111	95.0
Toluene-D8	2037-26-5	2	%		96.9	93.4	93.4	94.6	79.5
4-Bromofluorobenzene	460-00-4	2	%		103	104	104	104	88.1

TROP WATER

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Work Order : ES2427414
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	NODH4	—	—	—	—
				Sampling date / time	21-Aug-2024 11:10	—	—	—	—
Compound	CAS Number	LOR	Unit	ES2427414-006	———	———	———	———	———
				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	0.00004	mg/L	<0.00004	----	----	----	----	----
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.00004	mg/L	<0.00004	----	----	----	----	----
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	1.3	----	----	----	----	----
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	----	----	----	----	----
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L	157	----	----	----	----	----
Arsenic	7440-38-2	0.5	µg/L	1.5	----	----	----	----	----
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	----	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	NODH4	---	---	---	---
				Sampling date / time	21-Aug-2024 11:10	---	---	---	---
Compound	CAS Number	LOR	Unit		ES2427414-006	------	------	------	------
					Result	---	---	---	---
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		0.4	---	---	---	---
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	---	0.01	mg/L		<0.01	---	---	---	---
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	---	---	---	---

TROP WATER

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Work Order : ES2427414
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	NODH4	—	—	—	—
				Sampling date / time	21-Aug-2024 11:10	—	—	—	—
Compound	CAS Number	LOR	Unit		ES2427414-006	——	——	——	——
					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	%		28.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		49.1	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		34.0	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		64.4	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	NODH4	---	---	---	---
				Sampling date / time	21-Aug-2024 11:10	---	---	---	---
Compound	CAS Number	LOR	Unit		ES2427414-006	----	----	----	----
					Result	---	---	---	---
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	1.0	%		72.4	---	---	---	---
4-Terphenyl-d14	1718-51-0	1.0	%		74.9	---	---	---	---
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		110	---	---	---	---
Toluene-D8	2037-26-5	2	%		95.1	---	---	---	---
4-Bromofluorobenzene	460-00-4	2	%		102	---	---	---	---

Page	: 14 of 14
Work Order	: ES2427414
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	: ES2430707	Page	: 1 of 8
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	: 23-Sep-2024 11:00
Order number	: ---	Date Analysis Commenced	: 24-Sep-2024
C-O-C number	: ---	Issue Date	: 30-Sep-2024 15:01
Sampler	: GODFRED DUODU, QUENTIN VANDA		
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
Sanjeshni Jyoti	Senior Chemist Volatiles	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.
- 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 8
Work Order	: ES2430707
Client	: TROPICAL WATER NORTHERN TERRITORY
Project	: CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	SODH1	—
				Sampling date / time	19-Sep-2024 10:09	19-Sep-2024 10:30	19-Sep-2024 10:47	19-Sep-2024 09:45	—
Compound	CAS Number	LOR	Unit		ES2430707-001	ES2430707-002	ES2430707-003	ES2430707-004	——
					Result	Result	Result	Result	—
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	——	5	mg/L		<5	<5	<5	40	——
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.005	µg/L		0.006	0.007	0.014	<0.005	——
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.005	µg/L		0.008	0.010	0.025	0.007	——
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		—	——	——	10	——
Arsenic	7440-38-2	0.5	µg/L		—	——	——	1.0	——
Cadmium	7440-43-9	0.2	µg/L		—	——	——	1.9	——
Chromium	7440-47-3	0.5	µg/L		—	——	——	0.9	——
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		—	—	—	1.3	——
Zinc	7440-66-6	5	µg/L		—	——	——	101	——
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		—	——	——	187	——
Arsenic	7440-38-2	0.5	µg/L		—	—	—	1.2	——
Cadmium	7440-43-9	0.2	µg/L		—	——	——	1.9	——
Chromium	7440-47-3	0.5	µg/L		—	——	—	1.7	——
Cobalt	7440-48-4	0.2	µg/L		—	——	—	0.4	——
Copper	7440-50-8	1	µg/L		—	——	——	2	——
Lead	7439-92-1	0.2	µg/L		—	——	—	0.4	——
Nickel	7440-02-0	0.5	µg/L		—	——	——	1.8	——
Zinc	7440-66-6	5	µg/L		—	—	——	131	——
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	6	——	——

TROP WATER

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Work Order : ES2430707
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ADP1	NODH1	ADP2	SODH1	—
			Sampling date / time	19-Sep-2024 10:09	19-Sep-2024 10:30	19-Sep-2024 10:47	19-Sep-2024 09:45	—
Compound	CAS Number	LOR	Unit	ES2430707-001	ES2430707-002	ES2430707-003	ES2430707-004	———
				Result	Result	Result	Result	—
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS - Continued								
Arsenic	7440-38-2	0.2	µg/L	0.4	0.4	0.6	----	----
Cadmium	7440-43-9	0.05	µg/L	<0.05	<0.05	<0.05	----	----
Chromium	7440-47-3	0.2	µg/L	0.6	0.6	0.2	----	----
Cobalt	7440-48-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Copper	7440-50-8	0.5	µg/L	2.2	2.2	1.2	----	----
Lead	7439-92-1	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Zinc	7440-66-6	1	µg/L	<1	3	4	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS								
Aluminium	7429-90-5	5	µg/L	<5	<5	8	----	----
Arsenic	7440-38-2	0.2	µg/L	0.5	0.4	0.6	----	----
Cadmium	7440-43-9	0.05	µg/L	<0.05	<0.05	<0.05	----	----
Chromium	7440-47-3	0.2	µg/L	0.6	0.7	0.3	----	----
Cobalt	7440-48-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Copper	7440-50-8	0.5	µg/L	2.4	2.4	1.4	----	----
Lead	7439-92-1	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	3.5	----	----
Zinc	7440-66-6	1	µg/L	2	5	4	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	———	0.01	mg/L	0.10	0.06	0.01	0.55	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	———	0.1	mg/L	0.4	0.3	1.2	0.6	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
* Total Nitrogen as N	———	0.1	mg/L	0.5	0.4	1.2	1.2	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	———	0.01	mg/L	0.05	0.13	0.03	0.07	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

TROP WATER

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Work Order : ES2430707
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	SODH1	—
				Sampling date / time	19-Sep-2024 10:09	19-Sep-2024 10:30	19-Sep-2024 10:47	19-Sep-2024 09:45	—
Compound	CAS Number	LOR	Unit		ES2430707-001	ES2430707-002	ES2430707-003	ES2430707-004	———
					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	<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	----

TROP WATER

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Work Order : ES2430707
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	SODH1	---
				Sampling date / time	19-Sep-2024 10:09	19-Sep-2024 10:30	19-Sep-2024 10:47	19-Sep-2024 09:45	---
Compound	CAS Number	LOR	Unit		ES2430707-001	ES2430707-002	ES2430707-003	ES2430707-004	------
					Result	Result	Result	Result	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
* 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	---
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	%		36.9	32.0	30.6	28.6	---
2-Chlorophenol-D4	93951-73-6	1.0	%		46.2	47.6	52.9	47.7	---
2.4.6-Tribromophenol	118-79-6	1.0	%		38.7	39.3	37.0	30.7	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		54.2	58.8	63.6	51.8	---
Anthracene-d10	1719-06-8	1.0	%		62.8	65.0	69.9	62.6	---
4-Terphenyl-d14	1718-51-0	1.0	%		65.0	69.2	74.4	63.7	---
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		90.3	102	102	98.8	---
Toluene-D8	2037-26-5	2	%		81.7	98.5	97.0	97.5	---

TROP WATER

Page : 7 of 8
Work Order : ES2430707
Client : TROPICAL WATER NORTHERN TERRITORY
Project : CIPS WDL

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ADP1	NODH1	ADP2	SODH1	---
				Sampling date / time	19-Sep-2024 10:09	19-Sep-2024 10:30	19-Sep-2024 10:47	19-Sep-2024 09:45	---
Compound	CAS Number	LOR	Unit		ES2430707-001	ES2430707-002	ES2430707-003	ES2430707-004	------
					Result	Result	Result	Result	---
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	2	%		99.1	99.1	110	106	---

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