

## 18. Cygnet STP

### 18.1 Activity and report details

Activity name	Cygnet STP		
Activity address	Channel Highway, Cygnet		
Permit number	Licence to Operate - 3489	Date of issue	14/10/1991
EPN	11749/1	Date of issue	27/03/2024
Treatment level	Secondary Treatment		
Authorised dry weather flows	400 kL/day		
Key influent source	Residential		
Contact person	Kate Westgate		
Report author	George Fitzgibbon		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2024		

**Figure 18-1: Cygnet Sewage Treatment Plant**



## 18.2 Monitoring and compliance summary

### 18.2.1. Flow data

**Table 18–A: Flow monitoring summary**

	Influent	Effluent	Reuse
<b>Location name</b>	Inlet	Port Cygnet Bay	No reuse scheme
<b>Coordinates</b>	E507390 N5220470	507444E 5220400N	NA
<b>Method of measurement</b>	Level Sensor	Estimate based on influent	NA
<b>Date of last calibration/validation (if applicable).</b>	26/07/2023	NA – to be installed	NA

**Table 18–B: Annual flow and rainfall data**

Month	Average daily influent volume (kL/day)	Rainfall (mm/month) BOM Station ID 94269	Discharge to waters total effluent volume (ML)	Discharge to reuse total effluent volume (ML)
July 2023	228	87.8	7.08	--
August 2023	228	32.2	7.08	--
September 2023	236	95.6	7.08	--
October 2023	228	77.8	7.08	--
November 2023	236	33.9	7.08	--
December 2023	228	23.2	7.08	--
January 2024	246	30.8	7.62	--
February 2024	265	14.6	7.70	--
March 2024	254	10.0	7.87	--
April 2024	267	29.4	8.02	--
May 2024	264	27.0	8.17	--
June 2024	300	64.4	9.00	--
Annual 2023–24	249	526.7	90.86	--
<b>% of total discharge</b>	--	--	100.0%	--

2023–24 monthly flow data was submitted directly to the EPA.

## 18.3 Bypass events

No events recorded.

## 18.4 Discharge compliance with permit limits

**Table 18–C: Discharge compliance with permit limits**

	Ammonia	BOD5	Chlorine	Nitrogen	Oil and Grease	pH	Phosphorus	E coli	Enterococci	Total suspended solids
Permit/EPN limit	mg/L	mg/L	mg/L	mg/L	mg/L	Units	mg/L	MPN/100mL	MPN/100mL	mg/L
Maximum	10.0	--	1.5	--	--	8.5	--	400	--	--
90th Percentile	5.0	20.0	1.0	25.0	--	--	9.0	200	100	30.0
50th Percentile	3.0	15.0	--	18.0	--	--	6.0	100	50	20.0
Minimum	--	--	--	--	--	6.5	--	--	--	--
Samples analysed										
Number required	12	12	12	12	12	12	12	12	12	12
Number analysed	12	12	12	12	12	12	12	12	12	12
Statistical summary										
Maximum	31.4	33	6.80	39.6	5.8	7.5	11.1	285	865	34.0
90th percentile	21.5	9	2.16	27.8	2.9	7.4	8.3	78	10	19.9
50th percentile	2.7	8	1.26	11.6	1.5	7.1	4.4	10	10	7.4
Minimum	1.1	5	0.46	4.6	1.0	6.9	1.0	10	10	4.0
EPN Limit Compliance										
% compliance with Maximum	83%	--	67%	--	--	--	--	100%	--	--
% compliance with 90th percentile	83%	92%	17%	83%	--	--	92%	92%	92%	92%
% compliance with 50th percentile	58%	92%	--	83%	--	--	58%	92%	92%	83%
% compliance with pH range	--	--	--	--	--	100%	--	--	--	--

**Table 18-D: Mass loads to the environment**

Parameter	EPN limit	Frequency	2023-24 result
Nitrogen	--	Annual	1348.5
Phosphorous (kg)	--	Annual	492.1
Method	Time weighted/Grab sample method		

**Table 18-E: Performance analysis (discharge to environment)**

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
Ammonia	18/01/2024 22/02/2024	The treatment process is not specifically designed or capable of removing ammonia and nitrogen, in part due to aeration system limitations.	No specific action undertaken
Chlorine	18/01/2024 22/02/2024 23/05/2024 24/06/2024	Poor chlorine control	New chlorine dosing system installed to improve the system reliability and automation. Additional sensors installed to automate chlorine dosing during high flow periods.

No other parameters had exceedances in the reporting period.

### 18.5 Reuse annual reporting

No Recycled Water Scheme associated with this STP.

### 18.6. Ambient monitoring program

**Table 18–F: Program details**

<b>Program</b>	Post new outfall commissioning ambient monitoring program
<b>Status</b>	Ambient water quality, sediment and biological monitoring has commenced during the reporting period.
<b>Update</b>	12-month monitoring program commenced in May 2024 and is due for completion in April 2025.
<b>Comments</b>	An Ambient Monitoring Report will be submitted by 18 July 2025 to comply with condition M8 of EPN 11749.

### 18.7. Groundwater monitoring

Site Status: Red – (2022–23 Report)

Cygnet STP groundwater monitoring network consists of three monitoring bores ID numbers CYGW1–3. Located between the STP and the Port Cygnet salt marsh, bore ID# CYGW1 is situated on the western boundary of the STP, with bore ID# CYGW2 on the south and bore ID# CYGW3 located on the eastern boundary of the STP.

Bi-annual sampling was completed at all three monitoring bores (ID#'s CYGW1–3) in February 2024 and June 2024. Bi-annual sampling of the Cygnet STP and the receiving environment, Port Cygnet, was also completed.

The groundwater monitoring report for the 2023–24 sampling event is due September 2024. The 2022–23 report results indicate the STP is likely discharging into the groundwaters and receiving environment. The likely receiving environment continues to be the tidal zone of Huon estuary. Biological indicators were reported at or below the laboratory limit of reporting at all bores indicating currently minimal risk to the receiving water from biological hazards.

Bi-annual sampling at the extended suite is planned to continue during the 2024–25 groundwater monitoring program at all three bores and the receiving environment is also planned to continue. Refer to Table 18–I regarding future works to STP.

### 18.8. Inflow and infiltration (I&I)

The latest revision to the TasWater Inflow and Infiltration Management Plan includes details of the actions undertaken statewide to address I&I issues. Update to the actions completed will be provided in the next revision due September 2024.

A Multi Criteria Assessment was undertaken by TasWater in 2024 to prioritise I&I investigation and works state-wide. This catchment was ranked 10 out of 108 in priority (high). Actions in the period included:

- SPS Upgrades (Shellfish Program)
- Conductivity Monitoring
- CCTV of 2,200m sewer mains
- Rectification Works

### 18.9. Sludge and biosolids

The latest revision to the Sewage Sludge Management Plan (SSMP) includes full details of the actions undertaken during the reporting period.

There are no sludge/biosolids dewatering facilities at this site, with the un-stabilised sludge being transferred via liquid sludge transport to Macquarie Point STP, no stockpiling occurs. This STP was fully compliant with the 2023–24 Sewage Sludge Management Plan.

**Table 18–G: Desludging status and comments**

Desludging status	Comments
Low Priority	Sludge at Cygnet is removed from the sludge lagoon approximately monthly and is taken to Macquarie Point for additional treatment.

### 18.10. Non-compliance with other permit requirements

**Table 18–H: EPN non-compliances**

EPN condition	Description of non-conformance	Future actions to be taken
EF2 Effluent quality limits for discharge to water	Discharge compliance with permit limits	See section 18–5. Discharge compliance with permit limits and Performance Analysis.
EM1/EM1/EM4 Discharge Management Plan EM4	Discharge Management Plan overdue.	Submission timeframe FY27. Plan in development for DMP submission dates following post new outfall commissioning AMP
EM3 Emission Limit Guidelines Compliance Plan	Not complete.	Risk based emission limits are to be confirmed after new outfall relocation project commissioned and implementation of post new outfall commissioning ambient monitoring plan (PNOC-AMP).
OP5 Lagoon Liner	Historical groundwater monitoring results have indicated potential leakage from Cygnet STP into local groundwater. See Annual GW Reports	TasWater has undertaken 3 levels of investigation to better understand the issues regarding leakage from the Cygnet STP site. Works will be planned in the future to repair cracks in the concrete within the retention basin.

### 18.11. Complaints and incident reporting

No complaints recorded during the period.

**Table 18-I: Incident reporting**

Date	Category	Details	Mitigation actions
13/11/2023	Disinfection	Chlorine failure due to the cut over work for the new outfall pipeline being installed at the STP. The chlorine system became out of sequence from the restart and the chlorine failed to turn back on when required. Approx. 5kL was discharged through the short outfall into the bay.	Rectified.
06/02/2024	Mechanical	Brush aerator motor failure	Installed a spare motor to rectify.
23/04/2024	Mechanical	Leaking decant weir. The seal is below the settled sludge level, meaning mixed liquor is leaking into the chlorine contact basin, being disinfected, and pumped to outfall.	Seal rectified.

## 18.12. Any other relevant information

**Table 18-J: Projects or significant operational events that occurred in FY 2023–2024**

Project or significant operational event	Progress
Cygnnet STP new outfall relocation	New outfall drilling component completed in July 2023. Land based pipeline was completed FY2024.
Chlorine Dosing Upgrade	Completed

For further information on Cygnnet STP please contact TasWater on 13 6992

[www.taswater.com.au](http://www.taswater.com.au)