

## 43. Prince of Wales (POW) STP

### 43.1 Activity and report details

Activity name	POW STP		
Activity address	Derwent Park Road, Prince of Wales Bay, Hobart		
Permit number	Licence to Operate - 3540	Date of issue	8/03/1991
EPN	9208/1 8545/1	Date of issue	13/06/2018 05/03/2013
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	9900 kL/day		
Key Influent Source	Residential/Industrial/Tankered 6 x Category 3 Customers, 3 x Category 4 Customers		
Contact person	Kate Westgate		
Report author	George Fitzgibbon		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2024		

**Figure 43- 1: Prince of Wales Sewage Treatment Plant**



## 43.2 Monitoring and compliance summary

### 43.2.1 Flow data

**Table 43-A: Flow monitoring summary**

	Influent	Effluent	Reuse
Location name	Inlet	Derwent River	No reuse scheme
Coordinates	E 524957 N 5257635	E 525066 N 5258516	NA
Method of measurement	In line meter	Level sensor	NA
Date of last calibration/validation (if applicable).	02/02/2024	02/02/2024	NA

**Table 43-B: Annual flow and rainfall data**

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 94030	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2023	8,385	22.5	276.79	--
August 2023	8,648	11.6	251.31	--
September 2023	9,145	32.1	253.29	--
October 2023	8,314	62.7	256.03	--
November 2023	7,936	29.0	238.08	--
December 2023	9,429	37.2	258.12	--
January 2024	8,802	41.0	228.79	--
February 2024	9,178	6.9	216.06	--
March 2024	9,580	11.4	234.95	--
April 2024	7,493	35.3	233.77	--
May 2024	7,184	29.2	241.65	--
June 2024	6,385	35.8	235.02	--
Annual 2023-24	8,399	354.7	2,923.84	--
% of Total Discharge	--	--	100.0%	--

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

### 43.3 Bypass events

**Table 43-C: Bypass events summary for POWST01 - OPD**

<b>Bypass ID:</b>	POWST01-OPD				
<b>Bypass description:</b>	Pumped bypass from primary effluent pump station to chlorine contact tank				
<b>Treatment bypassed:</b>	Secondary Treatment				
<b>Treatment level of impacted effluent:</b>	Screened, De-gritted, Primary Treated and Chlorinated				
<b>Flows exceeding:</b>	340 L/s (Approximate)				
<b>Discharge location:</b>	Derwent Estuary: 525066E, 5258516N (GDA94)				
<b>Start date / time</b>	<b>End date / time</b>	<b>Duration</b>	<b>Volume estimate</b>	<b>Cause</b>	<b>Response actions</b>
08/07/23 17:38	09/07/23 01:14	7.6 h	377 kL	Rainfall Event	No specific actions undertaken
10/07/23 10:32	10/07/23 10:33	0.0 h	5 kL	Rainfall Event	No specific actions undertaken
10/07/23 20:03	10/07/23 20:24	0.4 h	10 kL	Rainfall Event	No specific actions undertaken
31/07/23 18:09	31/07/23 19:24	1.3 h	66 kL	Rainfall Event	No specific actions undertaken
21/08/23 11:22	21/08/23 11:23	0.0 h	5 kL	Rainfall Event	No specific actions undertaken
16/09/23 16:23	16/09/23 16:57	0.6 h	15 kL	Rainfall Event	No specific actions undertaken
16/09/23 20:39	16/09/23 20:55	0.3 h	10 kL	Rainfall Event	No specific actions undertaken
20/09/23 01:22	20/09/23 04:22	3.0 h	51 kL	Rainfall Event	No specific actions undertaken
20/09/23 14:45	20/09/23 19:58	5.2 h	214 kL	Rainfall Event	No specific actions undertaken
21/10/23 23:57	22/10/23 06:45	6.8 h	2805 kL	Rainfall Event	No specific actions undertaken
22/10/23 10:23	22/10/23 13:10	2.8 h	107 kL	Rainfall Event	No specific actions undertaken
23/10/23 09:12	23/10/23 10:55	1.7 h	10 kL	Rainfall Event	No specific actions undertaken

08/11/23 17:34	08/11/23 17:54	0.3 h	5 kL	Rainfall Event	No specific actions undertaken
24/11/23 10:22	24/11/23 10:23	0.0 h	5 kL	Rainfall Event	No specific actions undertaken
25/11/23 10:44	25/11/23 13:21	2.6 h	224 kL	Rainfall Event	No specific actions undertaken
04/12/23 19:32	04/12/23 19:33	0.0 h	5 kL	Rainfall Event	No specific actions undertaken
05/12/23 19:08	05/12/23 19:09	0.0 h	5 kL	Rainfall Event	No specific actions undertaken
07/12/23 09:16	07/12/23 09:17	0.0 h	5 kL	Rainfall Event	No specific actions undertaken
14/12/23 03:46	14/12/23 04:57	1.2 h	184 kL	Rainfall Event	No specific actions undertaken
17/01/24 11:06	17/01/24 17:20	6.2 h	413 kL	Rainfall Event	No specific actions undertaken
25/04/24 10:48	25/04/24 11:00	0.2 h	51 kL	Rainfall Event	No specific actions undertaken
01/05/24 10:22	01/05/24 10:26	0.1 h	41 kL	Rainfall Event	No specific actions undertaken
02/05/24 06:18	02/05/24 06:23	0.1 h	51 kL	Rainfall Event	No specific actions undertaken
11/06/24 09:06	11/06/24 09:07	0.0 h	5 kL	Rainfall Event	No specific actions undertaken
11/06/24 17:00	11/06/24 17:45	0.8 h	26 kL	Rainfall Event	No specific actions undertaken

#### 43.4 Discharge compliance with permit limits

**Table 43-D: Compliance Summary**

	Ammonia	BOD5	Chlorine	Nitrogen	Oil and Grease	pH	Phosphorus	E coli	Total suspended solids
Permit/EPN limit	mg/L	mg/L	mg/L	mg/L	mg/L	Units	mg/L	MPN/100mL	mg/L
Maximum	32.0	65	1.0	45.0	10.0	8.5	10.0	500	30.0
90th Percentile	--	--	--	--	--	--	--	--	--
50th Percentile	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	52	52	52	52	52	52	52	52	52
Number analysed	52	52	52	52	52	52	52	52	52
Statistical summary									
Maximum	34.8	90	2.20	46.4	3.0	7.3	8.4	24196	28.0
90th Percentile	29.0	75	1.92	43.4	2.5	7.1	7.2	19290	13.0
50th Percentile	20.8	30	0.53	37.3	1.4	6.8	5.8	10	7.6
Minimum	10.1	5	0.06	25.0	1.0	6.1	3.5	10	4.0
EPN Limit Compliance									
% compliance with Maximum	96%	77%	65%	96%	100%	--	100%	75%	100%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	75%	--	--	--

**Table 43-E: Mass loads to the environment**

Parameter	EPN Limit	Frequency	2022-23 result
Nitrogen (kg)	--	Annual	106584.0
Phosphorous (kg)	--	Annual	16841.9
Method	Flow weighted/Composite method		

**Table 43-F: Performance analysis (discharge to environment)**

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance	
E. coli	4/07/2023 11/07/2023 18/07/2023 25/07/2023 1/08/2023 15/08/2023 29/08/2023	10/10/2023 17/10/2023 24/10/2023 31/10/2023 21/11/2023 28/11/2023	There are occasions of variable chlorine demand, with the total chlorine residual increasing when the dose rates have remained the same, or even reduced. It is suspected that variability due to trade waste and tankered waste may have been a contributing factor.	Regular review and adjustment of chlorine dose rates. Installation of chlorine analysers.
Chlorine	5/09/2023 12/09/2023 7/11/2023 2/01/2024 9/01/2024 16/01/2024 23/01/2024 30/01/2024 27/02/2024	5/03/2024 19/03/2024 9/04/2024 7/05/2024 14/05/2024 21/05/2024 28/05/2024 18/06/2024 25/06/2024		
BOD	4/07/2023 11/07/2023 25/07/2023	17/10/2023 5/12/2023 30/01/2024	BOD non-compliances typically occurred during times of process upset, which were typically	Process settings adjusted as best as possible following review of process trends.

Effluent compliance parameter	Date(s) of non-compliance		Reasons for non-compliance	Actions to improve performance
	1/08/2023 15/08/2023 29/08/2023	6/02/2024 13/02/2024 26/03/2024	believed to be due to trade waste and tankered waste.	
Ammonia	5/03/2024 26/03/2024		The process not designed as a nutrient removal plant. Nitrogen removal is incidental as part of the BOD removal process.	No specific actions undertaken.
Nitrogen	5/09/2023 16/01/2024			
pH	24/10/2023 31/10/2023 21/11/2023 28/11/2023 19/12/2023 27/12/2023 12/03/2024	3/04/2024 9/04/2024 16/04/2024 30/04/2024 4/06/2024 11/06/2024	MHL dosing system was at times offline leading to low pH.	Rectification of dosing system.

No other parameters had exceedances in the reporting period.

### 43.5 Reuse annual reporting

No Recycled Water Scheme associated with this STP.

### 43.6 Ambient monitoring program

No ongoing routine ambient monitoring program

**Table 43-G: Program details**

<b>Program</b>	NA – No requirement for ambient monitoring in the reporting period
<b>Status</b>	NA
<b>Update</b>	NA
<b>Comments</b>	NA

### 43.7 Groundwater monitoring

No groundwater monitoring program associated with the STP.

### 43.8 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 4 out of 108 in priority.

Desktop investigation works planned in the next I&I Management Plan period.

### 43.9 Sludge and biosolids

The latest revision to the Sewage Sludge Management Plan (SSMP) includes full details of the actions undertaken during the reporting period, the most recent sludge profiling results, and upcoming annual desludging program.

This STP was deemed non-compliant with the 2023-24 SSMP due to missing Biosolids Management Plans and no evidence that council approval was obtained. The 2024-25 SSMP will include copies of BMPs for all farms spreading sites.

Biosolids are removed regularly from site, no stockpiling occurs.

**Table 43-H: Biosolids sludge classification**

Parameter	Number of Samples	Maximum (mg/kg)	Mean (mg/kg)	Minimum (mg/kg)	BACC (mg/kg)	Contaminant Classification
Arsenic	12	3.2	2.5	2.1	3.2	A
Cadmium	12	4.6	3.3	2.4	4.8	B
Chromium	12	53.6	33.8	23.9	49.2	A
Copper	12	652.0	478.5	389.0	654.5	B
Lead	12	84.7	49.4	36.7	81.5	A



Parameter	Number of Samples	Maximum (mg/kg)	Mean (mg/kg)	Minimum (mg/kg)	BACC (mg/kg)	Contaminant Classification
Mercury	12	3.3	1.4	0.7	2.9	B
Nickel	12	28.6	22.2	18.0	28.9	A
Zinc	12	2010.0	1386.7	1060.0	1904.6	B

**Table 43-I: Volume and disposal destination**

Quantity (DST)	Average solids content	Stabilisation method	Stabilisation grade	Contamination grade	Biosolids classification	End use destination
615.7	23.0%	Anaerobic digestion	B	B	2	Coronation Hotel, Whitemarsh farm, Delmore farm, Old Mill farm, Strathallan farm

Notes: DST = Dry solid tonne. U/C = Unclassified

### 43.10 Non-compliance with other permit requirements

**Table 43-J: EPN non-compliances**

EPN condition	Description of non-conformance	Future actions to be taken
EF3 Effluent quality limits for discharge to the River Derwent	Discharge compliance with permit limits	See section 43.4 Discharge compliance with permit limits and Performance Analysis
EM3 (8545/1) Discharge Management Plan	Discharge Management Plan overdue	TasWater acknowledges the non-compliance associated with the DMP condition. We are working towards the intent of the EPN condition to prioritise discharge risk reduction projects in line with our EPA endorsed Wastewater Risk Management Plan and Price and Service Plan process.
WM2 Sewage Sludge Management Plan	Missing Biosolids Management Plans and no evidence that council approval was obtained	Ensure BMPs and evidence of council approval are included in 2023-24 SSMP

### 43.11 Complaints and incident reporting

No complaints or incidents recorded in the period.

### 43.12 Any other relevant information

For further information on the Prince of Wales STP please contact TasWater on 13 6992

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