

## 7 Bridport STP

### 7.1 Activity and report details

Activity name	Bridport STP		
Activity address	Off Charles Street, Bridport		
Permit number	Permit Conditions Environmental - 6154	Date of issue	20/03/2002
	EPN	10478/1	Date of issue 2/02/2021
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	1400 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 2023		

Figure 71: Bridport Sewage Treatment Plant



## 7.2 Monitoring and compliance summary

### 7.2.1 Flow data

Table 1-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Inlet	Andersons Bay - Granite Point	Bridport Golf Course
Coordinates	E 532795 N 5462266	E 532360 N 5463275	E 531995 N 5462719
Method of Measurement	Inline meter	Influent less Reuse	Inline meter
Date of last Calibration/Validation (if applicable)	13/07/22	NA	8/05/23

Table 1-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 91219	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	296	47.4	9.19	0.00
August 2022	296	152.6	10.53	0.00
September 2022	306	61.2	9.19	0.00
October 2022	374	204.2	11.60	0.00
November 2022	391	104.6	11.74	0.00
December 2022	376	22.0	10.92	0.08
January 2023	379	19.6	11.00	0.74
February 2023	294	40.4	7.95	0.28
March 2023	298	68.8	7.79	1.44
April 2023	307	77.2	9.22	0.00
May 2023	269	72.2	8.33	0.00
June 2023	363	158.2	10.89	0.00
Annual 2022-23	329	1028.4	118.34	2.53
% of Total Discharge	--	--	97.9%	2.1%

2022-23 monthly flow data was submitted directly to the EPA.

### 7.2.2 Bypass events

There were no bypass events associated with the STP during the reporting period.

### 7.3 Discharge compliance with permit limits

Table 7-C: Compliance Summary

Parameter	Ammonia	BOD5	Chlorine	Nitrogen	Oil and grease	pH	Phosphorous	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	33	40	1.0	40	10	8.5	10	750	40
90th percentile	--	--	--	--	--	--	--	--	--
50th Percentile	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	12	12	12	12	12	12	12	12	12
Number analysed	12	12	12	12	12	12	12	12	12
Statistical summary									
Max	33.3	155	6.80	53.3	3.8	8.3	11.4	3448	82.0
90th percentile	31.4	149	2.17	49.9	2.7	7.9	9.9	1216	65.5
50th percentile	26.0	105	1.42	42.9	1.8	7.7	7.4	10	40.5
Min	15.4	48	0.14	34.2	1.0	7.2	5.9	10	11.6
EPN Limit Compliance									
% compliance with Maximum	92%	0%	25%	25%	100%	--	92%	75%	50%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	100%	--	--	--

Table 7-D: Mass loads to the environment

Parameter	EPN Limit	Frequency	2022-23 result
Nitrogen (kg)	5400	Annual	5104.8
Phosphorous (kg)	1200	Annual	920.8
Method	Time weighted/Grab sample method		

Table 7-E: Performance Analysis (Discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
Chlorine	14/09/2022 25/10/2022 09/11/2022 20/12/2022 13/02/2023	23/03/2023 20/04/2023 18/05/2023 27/06/2023	Bridport STP uses chlorine tablets for disinfection. This method of chlorination presents difficulties in dosage control and is susceptible to elevated chlorine and E. coli (occasionally) results after initial dosages.
E. coli	11/07/2022 08/08/2022	27/06/2023	
BOD	11/07/2022 08/08/2022 14/09/2022 25/10/2022 09/11/2022 20/12/2022	12/01/2023 13/02/2023 23/03/2023 20/04/2023 18/05/2023 27/06/2023	Overloaded treatment plant due to catchment growth. Insufficient lagoon aeration to achieve biological degradation of BOD, confirmed by external environmental engineering consultant. BOD further increased by high algae concentrations.
TSS	08/08/2022 25/10/2022 20/12/2022	12/01/2023 20/04/2023 18/05/2023	Overloaded treatment plant due to catchment growth. Insufficient hydraulic residence time to achieve solids settling. TSS further increased by
			Sourcing of additional mechanical aerators to improve lagoon dissolved Installation of procured aerators in FY24. Ongoing monitoring of aerator performance and encourage biological BOD removal.
			No specific actions

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
		lagoon sludge accumulation and high algae concentrations.	
Ammonia	20/04/2023	The STP is not designed to nitrify ammonia.	No specific actions
Nitrogen	08/08/2022 14/09/2022 25/10/2022 12/01/2023 13/02/2023	23/03/2023 20/04/2023 18/05/2023 27/06/2023 The STP is not designed to remove nitrogen	No specific actions
Phosphorus	23/03/2023	The STP is not designed to remove phosphorus.	No specific actions

Note: Non-compliances only identified for the times STP has discharged to water

No other parameters had exceedances in the reporting period.

#### 7.4 Reuse Annual Reporting

The Bridport sewage treatment plant supplies treated effluent to the Bridport Golf Club recycled water scheme. A partial scheme, the recycled water is stored in two recycled water tanks for use to irrigate the golf course/greens.

Table 7-F: Reuse Compliance Summary

Parameter	BOD5	pH	E coli
Permit/EPN limit	mg/L	Units	MPN/100ml
Maximum	50	9.0	10000
90th percentile	--	--	--
50th Percentile	--	--	1000
Minimum	--	5.5	--
Samples analysed			
Number required	12	12	12
Number analysed	4	4	4
Statistical summary			
Max	94	7.8	2359
90th percentile	93	7.8	1887
50th percentile	89	7.7	625
Min	17	7.5	223
Summary of results			
% compliance with Maximum	25%	--	100%
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	75%
% compliance with pH range	--	100%	--

Note: Percentages reflective of complete data set for the year

Table 7-G: Performance analysis (Discharge to reuse)

Reuse Compliance Parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
BOD	12/01/2023 02/02/2023	As per Table 7-E	As per Table 7-E

\*Non-compliances only identified for the times STP has discharged to reuse

As part of the recycled water soil monitoring program, annual soil sampling was completed at three locations (BT1-3) at the recycled water scheme in April 2023. The field component of the annual compliance audit was completed in conjunction with the soil monitoring, with follow up phone audit in May 2023. A summary of the findings is provided in the below table. No groundwater monitoring is completed at the RWS.

Table 7-G: Annual recycled water scheme compliance audit and soil monitoring summary

Program	Compliance audit	Soil monitoring
Compliance status/ monitoring outcome	Minor non-compliance: Inadequate signage on front gate	Soil salinity and sodicity levels decreased across all sites. Results within recommended ranges No evidence of nutrient accumulation
Comments	During phone audit, Golf Club advised entrance sign was removed to be updated and will be reinstalled  Majority of boundary fences border on private bushland and considered a very low risk of public access	Changes to salinity and sodicity unlikely significantly influenced by recycled water due to low irrigation rates and more likely attributed to rainfall  Median recycled water conductivity slightly elevated. Ongoing surveillance of salinity and sodicity recommended

## 7.5 Ambient monitoring program

Table 7-H: Program details

Program	Bridport Ambient Monitoring Plan.
Status	No ambient monitoring undertaken during the reporting period.
Update	Ambient water quality and biological monitoring was undertaken in the FY2021/22 reporting period and reported within an Ambient Monitoring Report within the reporting period.
Comments	<p>Ambient monitoring was undertaken in spring (October) 2021 and autumn (April) 2022. Monitoring included ambient water quality and biological monitoring (benthic infauna analysis, reef habitat characterisation and intertidal surveys). A summary of the ambient water quality and biological monitoring reported in the Bridport STP Ambient Monitoring Report 2022 is provided below:</p> <ul style="list-style-type: none"> <li>• Despite elevated concentrations of nutrients at the outfall site, there did not appear to be a distinct spatial pattern suggesting that nutrients dispersed rapidly in the receiving environment during the October and April sampling events. Dissolved reactive phosphorus (DRP) exceeded the Default Guideline Value (DGV) (EPA 2021) for coastal and marine ambient waters at the outfall site in October and April.</li> <li>• In October <i>E. coli</i> and enterococci showed elevations with enterococci above the reactional low risk guideline value at several ambient monitoring sites. Effluent levels on the day of monitoring were low and below ambient concentrations at most sites. This suggests a possible alternative source for the elevated results in the receiving environment although impacts from the STP cannot be completely ruled out. In April there were no elevated levels of <i>E. coli</i> and enterococci results above the recreational low risk GV in the receiving environment at any ambient monitoring sites around the STP outfall.</li> <li>• Benthic infauna showed no obvious pattern in community composition or relative abundance of the infauna in relation to location or distance from the STP outfall.</li> <li>• No clear correlation between benthic coverage and distance or direction from the STP outfall was observed in October. In April there was a spatial pattern of decreasing brown/red algae cover with increasing distance from the STP outfall in both directions. Abiotic factors and conditions (topography, depth, rocky substrate) are likely to have contributed to the distribution of species. The difference in findings between the two months is likely due to tide levels and accessibility to intertidal sites.</li> <li>• Similarly, subtidal habitats also showed no distinct spatial pattern of habitat variability associated with distance from the STP outfall. Variation between monitoring sites appeared to be more closely aligned to natural variability in abiotic structure.</li> </ul> <p>In summary, the results of the ambient monitoring showed little change in the ecological condition of the Anderson Bay marine receiving environment around the Bridport STP outfall since last surveyed in 2017-18, with minor impacts from the STP effluent discharge observed.</p>

## 7.6 Groundwater monitoring

Site Status: Red - Highly likely STP impact (2022 Report)

Bridport groundwater monitoring network consists of eight groundwater monitoring bores; ID numbers: BRDGW1, BRDGW4-7 and BRDGW11-13. Biannual sampling was conducted at all eight bores in January 2023 with annual sampling completed in June 2023. All sampling included bacteriological analysis.

Following delays, the 2022-23 report will be finalised and available by October 2023. Any actions to address identified potential issues will be determined following the hydrogeological review.

The 2022 report showed elevated concentrations of ammonia, total nitrogen and total phosphorous at levels indicative of STP seepage along bores located on the western edge of the STP (bore id's BRDGW4-5 and &). Remaining two bores found no sign or limited sign of impact.

Biannual monitoring at the extended suite is planned to continue at all eight groundwater monitoring bores during the 2023-24 sampling program.

## 7.7 Inflow and infiltration (I&I)

The latest revision to the TasWater Inflow and Infiltration Management Plan includes full details of the actions undertaken during the reporting period. Update to the actions completed will be provided in the next revision due September 2024.

A Multi Criteria Assessment was undertaken by TasWater in 2022 to prioritise I&I investigation and works state-wide. This catchment was ranked 63 out of 79 in priority.

## 7.8 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 fully compliant with the 2022-23 SSMP.

No stockpiling occurs at this site.

Table 7-I: Desludging status and comments

Desludging Status	Comments
Low Priority	Desludging scheduled to occur in 2027, as per the current prioritization planning schedule.

## 7.9 Non-compliance with other permit requirements

Table 7-J: EPN non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
A1 Odour Management	Odour mitigation methods currently insufficient during peak seasons.	Bridport Master Plan and rationalisation of Scottsdale is under development with the project scheduled to commence in the latter half of FY2024. This project will confirm if a process upgrade remains the preferred strategic solution for the site. Which will address odour issues.



EPN Condition	Description of non-conformance	Future Actions to be taken
G8 Wastewater Reuse EMP review	Wastewater reuse EMP was due in February 2023.	A Strategic Options Report is being developed to consider the preferred outcome for the Bridport and Scottsdale STPs upgrade requirements and disposal options considering rationalisation and a recycled water scheme (RWS).
A2 Odour Abatement Plan	Odour Abatement Plan overdue.	Bridport Master Plan and rationalisation of Scottsdale is under development with the project scheduled to commence in the latter half of FY2024. This project will confirm if a process upgrade remains the preferred strategic solution for the site. Which will address odour issues.
EF2 Effluent quality limits for discharge to Anderson Bay	Discharge compliance with permit limits.	See section 7.3 Discharge Compliance with Permit Limits.
EF3 Discharge Effluent quality limits for Reuse	Discharge compliance with reuse permit limits.	See section 7.4 Reuse Compliance and Performance Analysis.
EM1 Effluent Improvement Plan (EIP)	EIP Overdue.	EIP is currently being compiled, with submission in FY2024.
EM2 Effluent Reuse Feasibility Study	Effluent Reuse Feasibility Study overdue.	A Strategic Options Report is being developed to consider the preferred outcome for the Bridport and Scottsdale STPs upgrade requirements and disposal options considering rationalisation and a recycled water scheme (RWS).
EM3 Effluent Management	Discharge Management Plan (DMP) overdue.	Submission timeframe to be confirmed. Plan in development for DMP submission dates following on from agreed format between TasWater and EPA.
EM4 Discharge Management Plan	Discharge Management Plan (DMP) overdue.	Submission timeframe to be confirmed. Plan in development for DMP submission dates following on from agreed format between TasWater and EPA.
OP2 Operational Procedures Manual	No contemporary Operational Procedures Manual.	New SharePoint based solution for OPMs currently being developed. First version to be implemented by FY24.
OP5 Groundwater Contamination Abatement Plan	Groundwater Contamination Abatement Plan overdue.	Submission timeframe to be confirmed

## 7.10 Complaints and incident reporting

No incidents reported in the FY2022-2023 reporting period.

Table 7-K: Complaints Reporting

Date	Category	Details	Mitigation actions
16/07/2022 20/07/2022	Odour	Sewer odour coming from the treatment plant (settling ponds).	Treatment process improvements scheduled to be implemented in FY2024, in conjunction with the EIP and DMP.

## 7.11 Any other relevant information

Table 7-L: Projects or significant operational events that occurred in FY 2022-23:

Project or significant operational event	Progress
Bridport (& Scottsdale) Sewerage Strategy.	A Strategic Options Report is being developed to consider the preferred outcome for the Bridport and Scottsdale STPs upgrade requirements and disposal options considering rationalisation and a recycled water scheme (RWS). Investigation is anticipated to be completed in August 2024.

For further information on the Bridport STP please contact TasWater on 13 6992

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