

49 Ridgley STP

49.1 Activity and report details

Activity name	Ridgley STP		
Activity address	Circular Road, East Ridgley		
Permit number	Licence to Operate - 3658	Date of issue	8/12/1980
EPN	9187/1	Date of issue	8/07/2015
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	110 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 49-1: Ridgley STP



49.2 Monitoring and compliance summary

49.2.1 Flow data

Table 49-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Inlet	Pet River	No reuse scheme
Coordinates	E 402910 N 5444235	E 403082 N 5444237	NA
Method of Measurement	Level sensor	Estimate based on influent	NA
Date of last Calibration/Validation (if applicable).	9/09/2022	NA	NA

Table 49-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 91304	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	261	68.0	8.09	--
August 2022	555	182.4	17.20	--
September 2022	305	103.6	9.15	--
October 2022	507	319.4	15.72	--
November 2022	386	164.0	11.58	--
December 2022	151	17.4	4.68	--
January 2023	121	66.4	3.75	--
February 2023	103	40.4	2.89	--
March 2023	111	83.0	3.44	--
April 2023	103	69.4	3.08	--
May 2023	104	47.6	3.22	--
June 2023	311	229.6	9.33	--
Annual 2022-23	252	1391.2	92.13	--
% of Total Discharge	--	--	100.0%	--

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

49.2.2 Bypass events

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

49.3 Discharge compliance with permit limits

Table 49-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	5	18	--	10	2	8.5	4	200	24
90th percentile	--	--	--	--	--	--	--	--	--
50th Percentile	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	12	12	--	12	12	12	12	12	12
Number analysed	12	12	--	12	12	13	12	12	12
Statistical summary									
Max	2.8	29	--	7.6	3.3	6.9	0.7	373	108.0
90th percentile	1.1	17	--	6.6	1.4	6.9	0.7	93	83.9
50th percentile	0.4	5	--	4.0	1.1	6.6	0.1	10	9.6
Min	0.1	5	--	1.8	1.0	6.1	0.1	10	4.0
EPN Limit Compliance									
% compliance with Maximum	100%	92%	--	100%	92%	--	100%	92%	83%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	62%	--	--	--

Table 49-D: Mass loads to the environment

Parameter	EPN Limit	Frequency	2022-23 result
Nitrogen (kg)	--	Annual	427.6
Phosphorous (kg)	--	Annual	25.8
Method	Time weighted/Grab sample method		

Table 49-E: Performance Analysis (Discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance	
E. coli	2/02/2023	The reason for this non-compliance is not fully understood. Other monitoring parameter were in acceptable ranges at the time of this event. Temporary reduction of UV transmissivity or UV intensity are some possible causes.	No specific actions taken	
pH	29/09/2022 26/10/2022 17/11/2022	8/12/2022 19/01/2023	Ridgley STP has low influent alkalinity and does not have any alkali dosing for pH correction. The nitrification process results in depletion of alkalinity and at times has resulted in marginal pH non-compliances.	No specific actions taken
BOD	26/07/2022	The likely cause of this non-compliance is a wet weather event.	No specific actions taken	
TSS	26/07/2022 30/08/2022			
Oil and Grease	17/11/2022	Probably cause for this non-compliance is intermittent catchment loading.	No specific actions taken	

No other parameters had exceedances in the reporting period.

49.4 Reuse Annual Reporting

No Recycled Water Scheme associated with this STP.

49.5 Ambient monitoring program

Table 49-F: Program details

Program	Ridgley AMP
Status	Ambient water quality and biological monitoring completed during the reporting period.
Update	Biannual water quality and biological monitoring undertaken during the 2022-23 reporting period.
Comments	<p>Ambient water quality monitoring was completed within the Pet River receiving environment in October 2022 and April 2023. Key findings from the ambient water quality monitoring were:</p> <ul style="list-style-type: none"> • Effluent discharges from the Ridgley STP were found to have a small, localised effect on conductivity, turbidity and suspended solids in the Pet River and there was reduced dissolved oxygen in water downstream of the STP outfall. • Effluent discharges slightly increased the concentration of nutrients (both nitrogen and phosphorus) in the Pet River above background levels immediately downstream of the outfall. This likely contributed to the presence of blue-green algae downstream of the outfall. • Metal concentrations within the Pet River receiving environment were all below the Default Guideline Values (DGVs) and therefore pose a low risk. • Pathogen levels (<i>E. coli</i> and enterococci) were highly variable in the ambient receiving environment, so that recreational water quality and agricultural use Protected Environmental Values (PEVs) are not met. However, pathogen levels were unrelated to quantity and quality of the STP effluent discharge, with possible inputs from a storm water outfall and local livestock. <p>A Ridgley STP Ambient Monitoring Report detailing the results of ambient water quality monitoring will be submitted in late 2023.</p> <p>Biological monitoring was completed within the Pet River receiving environment in spring (September) 2022 and autumn (March) 2023. Key findings from the biological monitoring were:</p> <ul style="list-style-type: none"> • Macroinvertebrate diversity was relatively low in the Pet River in both sampling seasons. Macroinvertebrate abundance was very low at all four sites in spring 2022, and consistently higher in autumn 2023. There was no evidence of an increase in total abundance of macroinvertebrates downstream of the STP outfall. • Overall, the results of macroinvertebrate sampling in the Pet River in spring 2022 and autumn 2023 indicate consistently poor water quality in the Pet River. • In spring 2022 there was no evidence of an effect of the STP effluent discharge on algae growth downstream of the outfall. However, in autumn 2023, algae biomass increased substantially at the sites downstream of the STP outfall; with a TRCI analysis on algae data rating both upstream sites in good condition and both downstream sites in Moderate condition. • In summary, the Pet River is in a consistently poor condition, likely due to widespread impacts on water quality from land clearing, stock and diffuse input of pollutants from agriculture and urban development in the upper catchment.

49.6 Groundwater monitoring

Site Status: Green – no sign STP impact

Ridgley groundwater monitoring network consist of two bores. Bore ID RGGW1 is located to the north-east whilst RCGGW2 located to the east of the STP ponds. Biannual sampling was completed across the monitoring network in October 2022 with annual sampling in May 2023.

Decreasing concentrations to the lowest levels of the entire program of total phosphorus across the monitoring network. No other nutrients reported above the adopted assessment guidelines. Biannual sampling at the standard analytical suite is scheduled to continue at both bores during the 2023-24 groundwater monitoring program.

49.7 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 2022 to prioritise I&I investigation and works state-wide. This catchment was ranked 56 out of 79 in priority.

49.8 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.

Table 49-G: Stockpile comments

Stockpile onsite	Volume of stockpile (estimated m ³)
Yes (Geobags)	Geobags are utilized onsite to dewater sludge, then removed regularly when required.

49.9 Non-compliance with other permit requirements

Table 49-H: EPN non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
Q1 Regulatory limits	AWDF limit exceeded during reporting period	No specific actions planned
EM1 Discharge Management Plan	Discharge Management Plan overdue.	Submission timeframe TBC. Plan in development for DMP submission dates following on from agreed format between TasWater and EPA.
EF2 Effluent quality limits for discharge to water	Discharge compliance with permit limits	See section 49.3 Discharge compliance with permit limits and Performance Analysis
OP2 Operational Procedures and Maintenance Manual	No contemporary Operational Procedures Manual	New SharePoint based solution for OPMMS currently being developed. First version to be implemented in FY24.
M32 Groundwater Monitoring	Groundwater Monitoring not as per specific requirements	Improve monitoring program for FY23/24 to meet compliance

49.10 Complaints and incident reporting

No complaints or incidents reported during the FY2022-23 reporting period.

49.11 -Any other relevant information

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

www.taswater.com.au