

23. Fingal STP

23.1 Activity and report details

Activity name	Fingal STP		
Activity address	Off Stieglitz Street, Fingal		
Permit number	License to Operate - 3659	Date of issue	2/05/1989
EPN	8816/2	Date of issue	22/06/2020
Treatment level	Secondary Treatment		
Authorised dry weather flows	125KL/day		
Key influent source	Residential		
Contact person	Kate Westgate		
Report author	Luisa Romero (Environmental Scientist)		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2024		

Figure 23-1: Fingal Sewage Treatment Plant



23.2 Monitoring and compliance summary

23.2.1 Flow data

Table 23-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location name	Inlet	South Esk River	No reuse scheme
Coordinates	E 580251 N 5389761	E 580110 N 5389600	NA
Method of measurement	In line meter	Estimate based on influent	NA
Date of last calibration/validation (if applicable).	26/04/2024	NA – to be installed	NA

Table 23-B: Annual flow and rainfall data

Month	Average daily influent volume (kL/day)	Rainfall (mm/month) BOM Station ID 92144	Discharge to waters total effluent volume (ML)	Discharge to reuse total effluent volume (ML)
July 2023	65	22.0	2.01	--
August 2023	62	33.4	1.94	--
September 2023	49	11.0	1.48	--
October 2023	52	24.2	1.60	--
November 2023	50	29.8	1.51	--
December 2023	59	103.4	1.82	--
January 2024	53	33.8	1.64	--
February 2024	48	37.4	1.40	--
March 2024	51	8.4	1.58	--
April 2024	52	60.6	1.57	--
May 2024	46	62.6	1.42	--
June 2024	49	23.2	1.48	--
Annual 2023-24	53	449.8	19.43	--
% of total discharge	--	--	100.0%	--

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

23.3 Bypass events

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

23.4 Discharge compliance with permit limits

Table 23–C: Discharge compliance with permit limits

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	8.0	60	1.0	24.0	10.0	9.0	6.0	2000	65.0
90th percentile	--	--	--	--	--	--	--	--	--
50th percentile	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	12	12	12	12	12	12	12	12	12
Number analysed	13	13	12	13	12	13	13	13	13
Statistical summary									
Maximum	8.2	32	2.10	21.6	1.4	8.0	4.0	24196	137.0
90th percentile	6.7	32	1.93	20.2	1.3	7.3	3.7	7206	114.0
50th percentile	0.8	17	1.38	16.4	1.1	6.9	2.5	160	77.0
Minimum	0.1	8	0.00	11.5	1.0	6.7	1.3	10	21.5
EPN limit compliance									
% compliance with maximum	92%	100%	33%	100%	100%	--	100%	85%	46%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	100%	--	--	--

Table 23–D: Mass loads to the environment

Parameter	EPN limit	Frequency	2023–24 result
Nitrogen (kg)	--	Annual	320.8
Phosphorous (kg)	--	Annual	52.1
Method	Time weighted/grab sample method		

Table 23–E: Performance analysis (discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance	
Ammonia	10/08/2023	The main nitrogen removal process in lagoon systems is ammonia stripping which occurs at high temperature and pH levels. In colder months when the lagoons pH and temperature drop, ammonia stripping rate drops which can result in effluent non-compliance.	No specific actions	
TSS	18/09/2023 23/10/2023 16/11/2023 24/01/2024 20/02/2024	7/03/2024 16/04/2024 29/04/2024 8/05/2024 17/06/2024	Algae is believed to be the primary reason for elevated TSS. Algae is a source of oxygen and is fundamental to lagoon treatment.	No Specific actions
E. coli	18/07/2023 29/04/2024 8/05/2024	20/05/2024 17/06/2024	Chlorine disinfection is via chlorine tablets upstream of the sampling point and downstream of the lagoon. Lack of automated dosing control as well as short chlorine contact time contributes to non-compliant E. coli and chlorine results.	Installation of floating wetlands and improved lagoon baffling will reduce short-circuiting and increase disinfection capacity.
Chlorine	18/07/2023 10/08/2023 18/09/2023 16/11/2023	12/12/2023 24/01/2024 7/03/2024 16/04/2024		

No other parameters had exceedances in the reporting period.

23.5 Reuse annual reporting

No Recycled Water Scheme associated with this STP.

23.6 Ambient monitoring program

Table 23-F: Program details

Program	Ambient monitoring as per EPN and Fingal Discharge Management Plan
Status	Ambient monitoring completed during the reporting period.
Update	Ambient water quality monitoring has been undertaken within the South Esk River during the reporting period.
Comments	<p>Monthly ambient water quality has been undertaken within the South Esk River receiving environment during the reporting period in accordance with EPN requirements and recent recommendations. The Fingal STP Receiving Environment Monitoring Report (REMR) was prepared during the reporting period to assess the impacts of Fingal STP effluent discharges on the South Esk River. The REMR has been submitted to the EPA for consideration. A summary of the outcomes described within the REMR are provided below:</p> <ul style="list-style-type: none"> • Ambient monitoring in the South Esk River, upstream and downstream of the confluence of the drainage channel containing Fingal STP effluent, showed no significant effects on water quality and biological communities. • Required dilutions for contaminants of concern in the effluent to meet ambient water quality objectives for the South Esk River were met 100% of the time. • There were no significant differences in the biological monitoring data upstream and downstream of the Fingal STP effluent discharge • Chlorine is expected to decay and react in the 25 m discharge channel prior to entry into the South Esk River. No chlorine disinfection products were detected in the ambient receiving environment. • Elevations in nutrients and suspended solids at the downstream site occurred during high flows and flooding in spring 2022. These elevations were attributed to secondary sources of stormwater and diffuse agricultural runoff flowing into the drainage channel upstream of the Fingal STP effluent outfall. <p>The overall risk presented by Fingal STP effluent discharges to Protected Environmental Values in the South Esk River has been revised based on the outcomes of the REMR to low risk.</p>

23.7 Groundwater monitoring

Site status: Green – (2022-23 report)

Fingal STP groundwater monitoring network consists of four groundwater monitoring bores ID numbers FIGW1-4. One round of sampling (6-monthly) was completed across at bore ID's FIGW2-4 in May 2024. Bore ID FIGW1 was unable to be sampled due to maintenance and repair requirements inhibiting access. The second (annual) sampling round was not completed. TasWater has put measures in place for the 2024-25 sampling program to address scheduling and resourcing delays experienced in recent years.

Following delays, the 2023–24 report will be finalised and available in October 2024. Any actions to address identified potential issues will be determined following the hydrogeological review.

Biannual sampling is scheduled for all four bores during the 2024–25 groundwater monitoring program.

23.8 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 70 out of 108 in priority.

23.9 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 fully compliant with the 2023–24 SSMP.

No stockpiling occurs at this site.

Table 23–G: Desludging status and comments

Desludging status	Comments
Low Priority	Desludging is outside of the current priority planning schedule.

23.10 Non-compliance with other permit requirements

Table 23–H: EPN non-compliances

EPN condition	Description of non-conformance	Future actions to be taken
EF2 Effluent quality limits for discharge to the South Esk River	Discharge compliance with permit limits	See section 23.4 Discharge compliance with permit limits and Performance Analysis.
EM2 Effluent reuse feasibility study	Effluent reuse feasibility study overdue	A desktop review into the feasibility of effluent reuse was completed in June 2021. Options to be reviewed as part of the Regional Master Planning process for PSP4.
EM1 Effluent Management	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.

23.11 Complaints and incident reporting

No complaints or incidents recorded during 2023–24 reporting period.

23.12 Any other relevant information

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

www.taswater.com.au