

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 2025		

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).	16/04/2025	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 92163	Discharge to waters total effluent volume (ML)	Discharge to reuse total effluent volume (ML)
July 2024	61	63.4	1.89	--
August 2024	64	52.8	1.99	--
September 2024	67	48.4	2.00	--
October 2024	58	34	1.80	--
November 2024	55	43.6	1.65	--
December 2024	56	66.2	1.73	--
January 2025	60	119	1.85	--
February 2025	50	17.6	1.41	--
March 2025	47	13.4	1.45	--
April 2025	48	3.6	1.44	--
May 2025	47	25.8	1.47	--
June 2025	55	28.4	1.66	--
Annual 2024-25	56	516.2	20.36	0.00
% of total discharge	--	--	100.0%	0.0%

2024-25 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	60	1	24	10	9	6	2000	65
90th percentile	--	--	--	--	--	--	--	--	--
50th percentile	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	12	12	12	12	12	12	12	12	12
Number analysed	14	14	12	14	12	14	14	14	14
Statistical summary									
Maximum	10.4	52.0	8.8	21.6	1.3	8.2	2.9	24196.0	149.0
90th percentile	6.3	41.8	2.2	20.1	1.1	7.7	2.8	2859.0	97.0
50th percentile	2.0	11.5	1.2	14.3	1.0	7.2	2.2	180.0	53.5
Minimum	0.1	5.0	0.2	7.9	1.0	6.8	1.7	10.0	20.2
EPN limit compliance									
% compliance with maximum	93%	100%	42%	100%	100%	100%	100%	86%	71%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	100%	--	--	--

Table 23-D: Mass loads to the environment

Mass Loads	EPN limit	Frequency	2024-25 result
Nitrogen (kg)	--	Annual	307.0
Phosphorous (kg)	--	Annual	47.1
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	21/08/2024 28/08/2024	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.	Installation of floating wetlands in May 2024 for improved nutrient treatment.	
TSS	18/09/2024 20/11/2024 16/10/2024	12/02/2025 26/02/2025 10/03/2025	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 taken.
E. coli	5/09/2024 26/02/2025 30/04/2025	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.	No specific actions taken.	
Chlorine	24/07/2024 18/09/2024 16/10/2024 23/01/2025			24/03/2025 28/05/2025 25/06/2025

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 8816/2 and Fingal STP Discharge Management Plan
Status	Ambient water quality and biennial, seasonal (spring/autumn) biological (AUSRIVAS) monitoring within the South Esk River receiving environment.
Update	Ambient water quality (monthly) monitoring and biennial seasonal (spring 2024 and autumn 2025) biological monitoring completed 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. Key findings from the ambient water quality monitoring are summarised below:</p> <ul style="list-style-type: none"> • Ammonia levels downstream generally exceeded upstream levels throughout the reporting period. However, there was a significant elevation upstream observed in December 2024 that was not observed at the downstream monitoring location. Levels at both monitoring locations did not exceed the ANZG toxicant Default Guideline Value (tDGV) at any time nor the draft site specific water quality objectives (SSWQOs). Both monitoring locations occasionally exceeded the EPA slightly to moderately disturbed DGVs for the South Esk Catchment over the reporting period. • Nitrate levels downstream closely correlated with upstream levels with the draft ANZG nitrate tDGV not exceeded at either location over the reporting period. Levels at both locations were generally within the EPA DGV but occasionally exceeded these and the draft SSWQOs (September 2024, May–June 2025). • Total nitrogen levels downstream generally correlated with upstream levels with both locations exceeding the EPA DGV most of the time and occasionally the draft SSWQO. • Total phosphorus levels downstream exceeded upstream levels from July – December 2024 and then correlated with upstream levels for the remainder of the reporting period. Upstream levels were within the draft SSWQO but exceeded the EPA DGV on all occasions, while downstream levels exceeded the draft SSWQO in July –December 2024 and the EPA DGV on all occasions. • Enterococci levels varied throughout the reporting period with downstream levels correlating with but generally higher than upstream levels. Both upstream and downstream monitoring locations exceeded the EPA low risk guideline values for waters with current or potential recreational use on most occasions but especially in December 2024 following significantly high river flows. • <i>E. coli</i> levels varied throughout the reporting period with downstream levels correlating with upstream levels. Both upstream and downstream levels regularly exceeded the EPA low risk guideline values for waters with current or potential recreational use and the draft ANZG livestock drinking water guideline (November –December 2024, January, May and June 2025). • No potential toxin producing blue–green algae (BGA) were detected at any time in either the upstream or downstream monitoring location during the reporting period. <p>Biological monitoring within the South Esk River receiving environment was completed in spring (September and November) 2024 and autumn (March) 2025 in accordance with EPN requirements. Key findings from the biological monitoring are summarised below:</p> <ul style="list-style-type: none"> • The results of AUSRIVAS sampling of macroinvertebrates in the South Esk River in relation to the STP effluent discharge produced varying results depending on type of habitat sample (edge or riffle) and season. • For riffle sites in spring 2024 and both edge and riffle sites in autumn 2025, the AUSRIVAS results were similar or slightly improved at sites downstream compared to sites upstream of the STP outfall.

- The only season/habitat where the condition of the macroinvertebrate fauna appeared to be lower at sites downstream of the STP outfall were for edge samples in spring 2024. The spring edge samples were taken under conditions of rapid change in river level after a major flood event around 10 days prior to sampling (peak flow > 9000 ML/day). The shift in edge habitat as the river level dropped is likely accentuated at downstream sites due to the gently shelving nature of the riverbank in this section of the river.
- Historical trends indicate either no consistent change (edge samples) or a slight improvement (riffle samples) in the condition of the macroinvertebrate fauna in the South Esk River at sites downstream of the STP outfall.

STP effluent discharges appear to be having a minimal impact on water quality and aquatic ecosystems within the South Esk River receiving environment with variations in ambient water quality likely a result of seasonal variations in rainfall and river flows from catchment inputs. Elevations in pathogen indicator organisms were observed after very high river flows (> 31000 ML/day) were reported further downstream within the South Esk River (Llewellyn) in early December 2024. A Receiving Environment Monitoring Report detailing the outcomes of monitoring will be provided to the EPA by December 2025.

23.7 Groundwater monitoring

Site status: Green

Fingal STP groundwater monitoring network consists of four groundwater monitoring bores ID numbers FIGW1-4. The groundwater monitoring network is considered to provide good coverage of the STP lagoon with monitoring bores located along the western boundary between the lagoon and nearby receiving water body (South Esk River).

Bi-annual sampling at the standard analytical suite was completed in November 2024 and March 2025 as bore ID's FIGW2-4 as scheduled. One round of sampling was completed at bore ID FIGW1 in March 2025 (annual) due to maintenance and repair requirements inhibiting access during November 2024.

The 2024-25 groundwater monitoring event recorded limited evidence of STP impacts. Bore ID FIGW4 continued to record elevated concentration of one analyte (ammonia) above an adopted guideline criterion.

Bi-annual sampling at the standard analytical suite is scheduled to continue at all four bores during the 2025-26 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.

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 2024–25 SSMP.

Sludge at this STP is captured within the treatment lagoon, which will be periodically desludged as required. No stockpiling occurs at this site.

Table 23–G: Desludging status and comments

Desludging status	Comments
Medium Priority	The treatment lagoon will likely require desludging within next 5 to 10 years.

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 was completed, and Fingal was selected as the preferred site for the floating wetlands trial. As a result, the reuse option was not pursued.

23.11 Complaints and incident reporting

No complaints recorded during 2024–25 reporting period.

Table 23–I: Incidents reporting

Date	Category	Details	Mitigation actions
27/11/2024	Mechanical	Leak in the weir board has caused lagoon levels to drop, resulting in increased discharge volumes to the environment.	The weir board was immediately replaced.
02/12/2025	Weather event	Due to extensive rainfall experienced within the Fingal STP catchment, the STP filled and discharged for a period over the weekend via the lagoon spillway into the South Esk River. Discharges over the spillway would not have been chlorine disinfected, however due to the high river flows within the South Esk River (> 31000 ML/day at Llewellyn) any water quality impacts from the spillway overflow would have been minimal.	No actions taken

23.12 Any other relevant information

Table 23–J: Projects or significant operational events that occurred in FY 2024–25

Project or significant operational event	Progress
Highlands Midlands Sewerage Regional Master Plan	The Highlands Midlands Sewerage Regional Master Plan has been completed and includes the short term and long-term considerations for the Fingal STP with the strategy to retain and invest in the current STP.
Floating wetlands trial installation	Completed in winter 2024

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

www.taswater.com.au