

47. Ranelagh STP

47.1 Activity and report details

Activity name	Ranelagh STP		
Activity address	Wilmot Road, Ranelagh		
Permit number	Licence to Operate – 3502 6249	Date of issue	25/07/1988 23/10/2002
EPN	8546/1	Date of issue	7/09/2017
Treatment level	Secondary Treatment		
Authorised dry weather flows	1200 kL/day		
Key influent source	Residential/Industrial 1 x Category 3 Customer, 1 x Category 4 Customer		
Contact person	Kate Westgate		
Report author	George Fitzgibbon		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2025		

Figure 47-1: Ranelagh Sewage Treatment Plant



47.2 Monitoring and compliance summary

47.2.2 Flow data

Table 47-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location name	Inlet	Huon River	No reuse scheme
Coordinates	E 503187 N 5237444	E 502775 N 5237169	NA
Method of measurement	In line meter	In line meter	NA
Date of last calibration/validation (if applicable)	26/08/2024	26/08/2024	NA

Table 47-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 94220	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2024	1,721	129	53.34	--
August 2024	2,009	120.8	62.28	--
September 2024	2,276	128.6	68.29	--
October 2024	1,248	52.4	38.67	--
November 2024	1,092	24.6	32.75	--
December 2024	1,295	126.6	40.14	--
January 2025	1,135	34.6	35.18	--
February 2025	976	16.8	27.34	--
March 2025	928	18.8	28.75	--
April 2025	949	43.2	28.48	--
May 2025	1,464	75.4	34.22	--
June 2025	1,466	79.8	42.69	--
Annual 2024-25	1,382	850.6	492.12	0.00
% of Total Discharge	--	--	100.0%	0.0%

2024-2025 monthly flow data was submitted directly to the EPA.

47.3 Bypass events

All bypasses were retained in the bypass lagoon and did not discharge to the environment. More information can be provided upon request.

Table 47-C: Bypass events summary

Bypass ID:	RANSTO1-BPSD-1				
Bypass description:	Inlet channel bypass to settling lagoon				
Treatment bypassed:	Secondary Treatment, Disinfection (Chlorine)				
Treatment level of impacted effluent:	Screened, Lagoon Disinfection (Solar UV)				
Flows exceeding:	62 L/s (Approximate)				
Discharge location:	Huon River via Settling Lagoon Discharge: 502675E 5237362N (GDA94) (if discharged)				
Start date / time	End date / time	Duration	Volume estimate	Cause	Response actions
19/09/24 12:49	19/09/24 21:01	8.2 h	19 kL	Rainfall Event	To help reduce bypass events state-wide, during FY2024-25 TasWater has spent \$1.2 million on the identification, reification and monitoring of inflow and infiltration (I&I) within our systems. During FY2025 -26 we will be spending a further \$0.8 million on &I works. Refer to Section 47.8 for specific actions.
21/09/24 02:29	21/09/24 11:21	8.9 h	30 kL	Rainfall Event	
07/12/24 06:03	07/12/24 14:45	8.7 h	13 kL	Rainfall Event	
12/01/25 13:19	12/01/25 19:01	5.7 h	26 kL	Rainfall Event	
08/06/25 18:11	08/06/25 22:53	4.7 h	20 kL	Rainfall Event	
09/06/25 08:41	09/06/25 23:03	14.4 h	59 kL	Rainfall Event	
10/06/25 06:21	10/06/25 15:33	9.2 h	9 kL	Rainfall Event	

47.4 Discharge compliance with permit limits

Table 47-D: Compliance summary

	Ammonia as N	BOD ₅	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	5	15	1	15	5	8.5	3	200	20
90th Percentile	2	10	--	10	2	--	1	--	15
50th Percentile	1	5	--	7	1	--	0.5	--	10
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	12	12	12	12	12	12	12	12	12
Number analysed	12	12	13	12	12	12	12	12	12
Statistical summary									
Maximum	6.2	34.0	2.1	15.9	1.6	7.6	3.2	727	99.0
90th percentile	1.5	22.1	1.0	14.0	1.0	7.5	2.5	10	46.9
50th percentile	0.3	5.0	0.7	7.0	1.0	7.0	0.8	10	4.2
Minimum	0.1	5.0	0.4	4.5	1.0	6.5	0.1	10	4.0
EPN Limit Compliance									
% compliance with Maximum	92%	83%	85%	92%	100%	100%	92%	92%	83%
% compliance with 90th percentile	92%	83%	--	75%	100%	--	58%	--	75%
% compliance with 50th percentile	83%	83%	--	50%	92%	--	50%	--	75%

% compliance with pH range	--	--	--	--	--	92%	--	--	--
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Table 47-E: Mass loads to the environment

Mass Loads	EPN Limit	Frequency	2024-25 result
Nitrogen (kg)	--	Annual	4,220.3
Phosphorous (kg)	--	Annual	494.8
Method	Time weighted/Grab sample method		

Table 47-F: Performance analysis (discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
Chlorine	17/10/2024 19/09/2024	A fixed rate chlorine control system can result in occasions where some batches of effluent received higher doses of chlorine than others.	The control system has improved to make fault detection more accurate. Installation of an online chlorine analyser to facilitate faster dose rate adjustments.,
E.coli	18/07/2024	Wet weather event causing reduced contact time and increased TSS making disinfection more challenging.	Reconfiguration of the chlorine dose pipework to reduce faults on the dosing pumps. Installed a bypass of the chlorine contact tank to the lagoon so that the contact tank can be safely cleaned regularly.
Ammonia (total, as N)	18/07/2024	Elevated TSS, BOD, and TN concentrations were believed to be due to insufficient removal rates of sewage sludge from the process. High flows during wet weather also contributed to some high suspended solids results.	Reliability issues with the belt press has resulted in higher MLSS in the aeration tank than desired at times Control settings are continually adjusted to help improve the solids separation process. A storm flow sequence has been added to the control system of the STP. This aims to reduce non-compliances during wet weather caused by solids carryover.
BOD	18/07/2024 17/10/2024		
Nitrogen	19/09/2024		
TSS	18/07/2024 17/10/2024		

No other parameters had exceedances in the reporting period.

47.5 Reuse Annual Reporting

No Recycled Water Scheme associated with this STP.

47.6 Ambient monitoring program

Table 47-G: Program details

Program	No ambient monitoring required in the reporting period
Status	Water quality monitoring completed at a five yearly frequency
Update	Next water quality monitoring event scheduled for 2026-27
Comments	-

47.7 Groundwater monitoring

Groundwater Site Status: Green

Ranelagh STP groundwater monitoring network consists of three groundwater monitoring bores, ID numbers RANGW1-3 and are located immediately north, east and south respectively of the STP.

6-monthly sampling at the standard analytical suite was completed at bore ID's RANGW2 and RANGW3 in October 2024 and February 2025 as scheduled. No sampling was completed at bore ID RANGW1 as bore requires repairs.

The 2024-25 groundwater monitoring reported limited signs of STP impact elevated concentrations of one analyte at both bores.

6-monthly sampling at the standard analytical suite is scheduled to continue for all three monitoring bores during the 2025-26 monitoring program.

47.8 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 30 out of 108 in priority.

47.9 Sludge and biosolids

The latest revision to the Sewage Sludge Management Plan (SSMP) includes full details of the actions undertaken during the reporting period. This STP was assessed as compliant with the 2024-25 SSMP.

Biosolids are removed regularly from site, no stockpiling occurs.

Table 47-H: Biosolids sludge classification

Parameter	Number of Samples	Maximum (mg/kg)	Mean (mg/kg)	Minimum (mg/kg)	BACC (mg/kg)	Contaminant Classification
Arsenic	12	11.6	5.5	2.8	11.2	A
Cadmium	12	1.4	0.9	0.6	1.4	A
Chromium	12	53.7	30.7	24.8	46.7	A
Copper	12	239.0	191.8	147.0	242.5	B
Lead	12	18.5	14.4	9.8	19.9	A
Mercury	12	1.0	0.4	0.2	0.8	A
Nickel	12	31.0	19.2	14.7	27.6	A
Zinc	12	659.0	497.2	381.0	655.1	B

BACC = Biosolids adjusted contaminant concentration

Table 47-I: Volume and disposal destination

Quantity (DST)	Average solids content (%)	Stabilisation method	Stabilisation grade	Contamination grade	Biosolids classification	End use destination
71.8	15.0	None	U/C	B	U/C	Plenty Composting

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

47.10 Non-compliance with other permit requirements

Table 47-J: EPN non-compliances

EPN condition	Description of non-conformance	Future actions to be taken
EF2 Effluent Quality	Non-compliant effluent released to environment.	Reliability issues with the belt press have resulted in higher MLSS in the aeration tank than desired at times. Control settings are continually adjusted to help improve the solids separation process. A storm flow sequence has been added to the control system of the STP. This aims to reduce non-compliances during wet weather caused by solids carryover.
EM2 Reuse Feasibility Study	Reuse Feasibility Study 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.
EM3 Discharge Management Plan	Discharge Management Plan overdue	
OP4 Lagoon Maintenance	EPA audit found that the lagoon embankment of the bypass lagoon was not in good repair	Lagoon repair works have been completed in FY2024-25 and is considered compliant.

47.11 Complaints and incident reporting

No complaints or incidents reported during the reporting period.

47.12 Any other relevant information

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

www.taswater.com.au