

## 12 Campania STP

### 12.1 Activity and report details

Activity name	Campania STP		
Activity address	Colebrook Road, Campania		
Permit number	Licence to Operate - 5025	Date of issue	23/12/1996
EPN	7986/1	Date of issue	7/03/2018
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	136 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 12-1: Campania Sewage Treatment Plant



## 12.2 Monitoring and compliance summary

### 12.2.1 Flow data

Table 12-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Wet Well Lagoon	Native Hut Rivulet (Emergency Only)	Effluent Reuse Scheme - Ag Irrigation (Workman Property)
Coordinates	E 535149 N 5276951	E 535193 N 5277065	E 535254 N 5276943
Method of Measurement	In Line meter	Influent less Reuse	In Line meter
Date of last Calibration/Validation (if applicable).	21/08/2022	NA	NA

Table 12-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 94258	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	114	18.0	0.50	3.04
August 2022	147	73.6	2.30	0.00
September 2022	161	50.4	0.48	4.36
October 2022	122	100.2	0.75	3.04
November 2022	136	64.6	0.26	3.81
December 2022	127	67.4	1.80	2.14
January 2023	129	11.2	0.00	4.01
February 2023	143	39.0	1.20	2.81
March 2023	169	21.6	0.70	4.54
April 2023	94	19.8	0.00	2.81
May 2023	161	18.8	0.86	0.00
June 2023	168	43.4	1.10	0.00
Annual 2022-23	139	528.0	9.96	30.56
% of Total Discharge	--	--	24.6%	75.4%

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

### 12.2.2 Bypass events

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

### 12.3 Discharge compliance with permit limits

Table 12-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	--	30	--	40	10	8.5	10	2000	40
90th percentile	--	--	--	--	--	--	--	--	--
50th Percentile	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	--	12	--	12	12	12	12	12	12
Number analysed	--	12	--	12	12	12	12	12	12
Statistical summary									
Max	26.4	136	--	48.5	3.1	9.8	11.1	24196	168.0
90th percentile	25.1	129	--	46.9	3.0	9.6	9.8	24196	131.8
50th percentile	21.2	97	--	34.1	1.6	8.6	6.6	15163	80.0
Min	4.3	27	--	21.8	1.0	8.0	4.7	281	16.8
EPN Limit Compliance									
% compliance with Maximum	--	8%	--	67%	100%	--	92%	17%	17%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	42%	--	--	--

Table 12-D: Mass loads to the environment

Parameter	EPN Limit	Frequency	2022–23 result
Nitrogen (kg)	--	Annual	369.9
Phosphorous (kg)	--	Annual	69.0
Method	Time weighted/Grab sample method		

Table 12-E: Performance Analysis (Discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance		Reasons for non-compliance	Actions to improve performance
Nitrogen	14/07/2022 11/08/2022	17/10/2022 7/06/2023	Lagoons have lower nitrogen removal rates in colder months.	No specific actions undertaken in reporting period.
E. coli	14/07/2022 11/08/2022 01/09/2022 17/10/2022 07/12/2022	02/02/2023 01/03/2023 3/05/2023 7/06/2023	The plant is currently overloaded	Desludging of Lagoon 1 scheduled in early FY2024. Approximately 216 Dry Solid Tonnes to be removed.
BOD	14/07/2022 11/08/2022 01/09/2022 17/10/2022 02/02/2023	01/03/2023 20/04/2023 3/05/2023 7/06/2023	The plant is currently overloaded	
TSS	14/07/2022 11/08/2022 01/09/2022 17/10/2022	02/02/2023 01/03/2023 3/05/2023 7/06/2023		

Effluent compliance parameter	Date(s) of non-compliance		Reasons for non-compliance	Actions to improve performance
pH	14/07/2022 11/08/2022 01/09/2022	17/10/2022 02/02/2023 01/03/2023		
Phosphorus	3/05/2023			

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

No other parameters had exceedances in the reporting period.

## 12.4 Reuse Annual Reporting

The Campania recycled water scheme is located directly south of the STP and consists of one customer where recycled water is used for pasture irrigation.

Table 12-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	12	12	12
Statistical summary			
Max	78	8.9	2613
90th percentile	32	8.9	2065
50th percentile	19	7.9	269
Min	5	7.4	30
Summary of results			
% compliance with Maximum	92%	--	100%
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	75%
% compliance with pH range	--	100%	--

There were no exceedances in the reporting period when the STP was discharging to reuse.

The annual compliance and soil sampling site visit were completed on the 9 November 2022. A summary of the findings is provided in Table 12-G.

Table 12-G: Annual recycled water scheme compliance audit and soil monitoring summary

Program	Compliance audit	Soil monitoring
Compliance status	<p>Non-compliant: No IEMP</p> <p>Potentially inadequate buffer zones. Irrigator was located approximately 15 metres from western boundary but not in use.</p> <p>Inadequate withholding times. Internal fences remain in poor condition allowing livestock (sheep) to access areas being irrigated with recycled water.</p>	<p>Soil salinity at sample sites (Site 1 and Site 2) decreased slightly and remain non-saline. Soil sodicity decreased at Site 1 which remains non-sodic and increased at Site 2 which remained sodic.</p> <p>Nutrient levels are generally within or below recommended range. The median salinity and SAR levels of the recycled water supplied by the scheme suggest a slight to moderate risk of soil permeability loss from recycled water irrigation.</p>
Comments	<p>Report recommendation to address the major non-compliances identified by the audit:</p>	<p>Careful irrigation management to prevent over irrigation and the management and monitoring of sodicity remains the main recommendations for the scheme. Through the annual recycled water</p>

	<p>Engage and communicate with customer on ongoing compliance issues and implications on supply of recycled water. IEMP to be developed and implemented if irrigation to continue.</p> <p>Interim measure - provide customer with updated irrigation management map.</p> <p>TasWater to progress investigation into alternate irrigation sites to address compliance issues.</p>	<p>scheme soil monitoring program, the landowner has been advised of these recommendations and provided raw soil monitoring data for reference.</p>
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In response to ongoing long term compliance issues, TasWater engaged a contractor to complete an investigation into the sustainability of the scheme and to review recycled water scheme options for the interim and future. TasWater are currently reviewing these options.

Groundwater Site Status: Amber – moderate concern identified.

The Campania RWS groundwater monitoring network consists of one bore (ID: CATGW1) which is located up-gradient of the STP and down-gradient to the recycled water irrigation area. Due to resourcing constraints annual sampling was not completed during the 2022-23 groundwater monitoring program. In response, biannual sampling has been scheduled in the 2023-24 program as a priority for this site.

Based on 2021-22 report data, low concentrations of nitrate as nitrogen increases are becoming apparent, although considered unlikely to be linked to recycled water irrigation due to low recycled water use. The 2022-23 report recommended monitoring is to continue until clear increasing trend occurring is identified. In addition, the bore has been considered too shallow for low-flow sampling and as such an assessment of the bore condition and redrilling if required is recommended. Following the completion of the previous groundwater monitoring network maintenance program, TasWater are currently reviewing maintenance and repair requirements for the groundwater monitoring network.

Biannual sampling at the extended analytical suite is scheduled for the 2023-24 groundwater monitoring program.

## 12.5 Ambient monitoring program

Table 12-H: Program details

<b>Program</b>	Seasonal Discharge Program - Routine monitoring during discharge to water.
<b>Status</b>	Ambient monitoring completed during discharge events within the reporting period.
<b>Update</b>	Ongoing ambient monitoring during seasonal discharge events.
<b>Comments</b>	<p>Ambient water quality monitoring occurred during discharges to the Native Hut Rivulet receiving environment in all months except January and April. Key findings from the ambient water quality data review were:</p> <ul style="list-style-type: none"> <li>• The Default Guideline Value (DGV) for ammonia was exceeded at the downstream sample site on four monitoring occasions during discharge events.</li> <li>• DGV Total nitrogen levels were elevated downstream compared to upstream and exceeded the on most monitoring occasions. Upstream nitrogen levels also exceeded the DGV during the winter/spring period.</li> <li>• Nitrate levels were below the DGVs at both monitoring locations.</li> <li>• Total phosphorous levels downstream exceeded upstream levels in all discharge events. The downstream site significantly exceeded the DGV.</li> </ul>

- All downstream enterococci results exceeded the NHMRC low risk guideline value for recreational contact. Downstream levels exceeded upstream on all but two sampling events.

## 12.6 Groundwater monitoring

Site status: Amber – Signs of STP impact

Sampling was completed at all three monitoring bores (ID: CATGW2-4) in September 2022. Due to timing and resourcing constraints the scheduled second sampling round was unable to be completed. In response, biannual sampling has been scheduled as a priority for this location.

Groundwater levels across the monitoring network have remained within the historical range over the 2022-23 monitoring period. Inorganics, nutrients and biological analytical results are generally within historical range across the network with the exception of total phosphorus at two bores (CATGW2, CATGW4) which remain above the ANZECC long term irrigation criteria. Biological indicators were elevated at CATGW2 and CATGW4. An increasing trend of at least one nutrient was observed at each bore. The 2022-23 Groundwater Monitoring Event report increased the site risk from a low (green) to moderate (amber) risk and monitoring frequency to increase to 6 monthly intervals.

Biannual sampling at the standard analytical suite is scheduled for the 2023-24 groundwater monitoring program.

## 12.7 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 67 out of 79 in priority.

## 12.8 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 occurred at this site.

Table 12-1: Desludging status and comments

Desludging Status	Comments
High Priority	Lagoons scheduled for de-sludging in FY2023-24.



## 12.9 Non-compliance with other permit requirements

Table 12-J: EPN non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
G10 Capacity Assessment of STP	Report not yet approved by EPA	Capacity Assessment sent to EPA on 14 October 2022 for approval
EF4 Effluent quality limits for discharge to Native Hut Rivulet	Discharge compliance with permit limits	See section 12.3 Discharge compliance with permit limits and Performance Analysis
EF2 Effluent quality limits for discharge to a reuse scheme	Discharge compliance with reuse permit limits	See section 12.4 Reuse Annual Reporting and Performance Analysis
OP2 Operational Procedures Manual	No contemporary Operational Procedures Manual	New SharePoint based solution for OPMMs currently being developed. First version to be implemented in FY24.

## 12.10 Complaints and Incident Reporting

No complaints were reported during the FY2022-23 reporting period.

Table 12-K: Incident Reporting

Date	Category	Details	Mitigation Actions
11/10/2022	Recycled Water	TasWater notified EPA regarding a recycled water spill which involved recycled water moving offsite of the irrigation area. In April 2023 TasWater were advised of recycled water pooling on the irrigation paddocks.	Communication with customer advised recycled water pump was being tested (no irrigator connected). Customer was re-advised of excluding stock and 4 hour withholding requirements.

## 12.11 Any other relevant information

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

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