

# Annual Environmental Report

2020



Lismore

D0176-01

## **CONTENTS**

### **1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER**

- 1.1 ANNUAL STATEMENT OF MEASURES
- 1.2 TREATMENT SUMMARY
- 1.3 ELV OVERVIEW
- 1.4 LICENSE SPECIFIC REPORT INCLUDED IN AER

### **2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY**

- 2.1 LISMORE WWTP - 2020 - TREATED DISCHARGE
  - 2.1.1 INFLUENT SUMMARY - LISMORE WWTP - 2020
  - 2.1.2 EFFLUENT MONITORING SUMMARY - LISMORE WWTP - 2020 -
  - 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE -
  - 2.1.4 OPERATIONAL REPORTS SUMMARY FOR LISMORE WWTP - 2020
  - 2.1.5 SLUDGE/OTHER INPUTS TO LISMORE WWTP - 2020

### **3 COMPLAINTS AND INCIDENTS**

- 3.1 COMPLAINTS SUMMARY
- 3.2 REPORTED INCIDENTS SUMMARY
  - 3.2.1 SUMMARY OF INCIDENTS
  - 3.2.2 SUMMARY OF OVERALL INCIDENTS

### **4 INFRASTRUCTURAL ASSESSMENT AND PROGRAMME OF IMPROVEMENTS**

- 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT
  - 4.1.1 SWO IDENTIFICATION AND INSPECTION SUMMARY REPORT
- 4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS
  - 4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY
  - 4.2.2 IMPROVEMENT PROGRAMME SUMMARY
  - 4.2.3 SEWER INTEGRITY RISK ASSESSMENT

### **5 LICENCE SPECIFIC REPORTS**

- 5.1 PRIORITY SUBSTANCES ASSESSMENT

### **6 CERTIFICATION AND SIGN OFF**

- 6.1 SUMMARY OF AER CONTENTS

### **7 APPENDIX**

## 7.1 AMBIENT MONITORING SUMMARY

# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0176-01, Lismore, in Waterford in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports where relevant are included as an appendix to the AER.

## 1.1 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

No capital works have been identified. Note: In 2020, IW commissioned an Activate Sludge Control program at the WWTP, to improve efficiencies of treatment.

## 1.2 TREATMENT SUMMARY

The agglomeration is served by a wastewater treatment plant(s)

- Lismore WWTP - 2020 with a Plant Capacity PE of 3000, the treatment type is 3P - Tertiary P removal

## 1.3 ELV OVERVIEW

The overall compliance of the final effluent with the Emission Limit Values (ELVs) is shown below. More detailed information on the below ELV's can be found in Section 2.

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF3100D0176SW001	Lismore WWTP - 2020	Treated	Compliant	N/A

## 1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
There are no Licence Specific Reports included in the AER.	

## 2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

### 2.1 LISMORE WWTP - 2020 - TREATED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - LISMORE WWTP - 2020

A summary of influent monitoring for the treatment plant is presented below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

Parameters	Number of Samples	Annual Max	Annual Mean
Total Phosphorus (as P) mg/l	12	8.3	3.17
COD-Cr mg/l	12	617	203.28
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	407	122.18
Total Nitrogen mg/l	12	71	27.7
Suspended Solids mg/l	12	386	129.86
Hydraulic Capacity	N/A	1684	616

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 2.1.5 if applicable.

#### Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional 'Operational Performance Summary'. The design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

## 2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF3100D0176SW001

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
<b>COD-Cr mg/l</b>	125	250	N/A	12	N/A	N/A	10.86	Pass
<b>Suspended Solids mg/l</b>	35	87.5	N/A	12	N/A	N/A	5.06	Pass
<b>BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l</b>	20	40	N/A	12	N/A	N/A	2.27	Pass
<b>pH pH units</b>	9	9	N/A	12	N/A	N/A	7.6	Pass
<b>Ammonia-Total (as N) mg/l</b>	5	6	N/A	12	N/A	N/A	0.09	Pass
<b>ortho-Phosphate (as P) - unspecified mg/l</b>	3	3.6	N/A	12	N/A	N/A	0.86	Pass
<b>Total Phosphorus (as P) mg/l</b>	N/A	N/A	N/A	12	N/A	N/A	0.91	
<b>Total Nitrogen mg/l</b>	N/A	N/A	N/A	12	N/A	N/A	12.79	

Notes:

1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

### Cause of Exceedance(s):

Not applicable

### Significance of Results:

The WWTP is compliant with the ELV's set in the Wastewater Discharge Licence.

## 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF3100D0176SW001

A summary of monitoring from ambient monitoring points associated with the wastewater discharge is provided in the sections below. For discharges to rivers upstream (U/S) and downstream (D/S) location data is provided. For other ambient points in lakes, coastal or transitional waters, monitoring data from the most appropriate monitoring station is selected.

The table below provides details of ambient monitoring locations and details of any designations as sensitive areas.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	204807, 98767	RS18B022600	No	No	No	No	Moderate
Downstream	206333, 98824	RS18B022700	No	No	No	No	Moderate

The table below provides a summary of monitoring results for designated ambient monitoring points. The upstream and downstream annual mean values are shown (mg/l), and the difference between both monitoring stations is given as a percentage of the Environmental Quality Standard (EQS) where relevant.

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
BOD - 5 days (Total) mg/l	RS18B022600	1.16	RS18B022700	1.75	1.5	39.3
Ammonia-Total (as N) mg/l	RS18B022600	0.022	RS18B022700	0.028	0.065	8.5



Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
ortho-Phosphate (as P) - unspecified mg/l	RS18B022600	0.034	RS18B022700	0.039	0.035	16.2
Antimony - unspecified µg/l	RS18B022600	1	RS18B022700			
Cobalt - unspecified µg/l	RS18B022600	1	RS18B022700			
Aluminium - unspecified µg/l	RS18B022600	42.2	RS18B022700			
Barium - unspecified µg/l	RS18B022600	12	RS18B022700			
Dissolved Oxygen % Saturation	RS18B022600	95.4	RS18B022700	95.5		
Conductivity @25°C µS/cm	RS18B022600	341.4	RS18B022700	266.5		
Cadmium - unspecified µg/l	RS18B022600	0.028	RS18B022700			
Copper - unspecified µg/l	RS18B022600	1.02	RS18B022700			
Arsenic - unspecified µg/l	RS18B022600	1	RS18B022700			
Alkalinity-total (as CaCO3) mg/l	RS18B022600	111.2	RS18B022700	76.5		
Nickel - unspecified µg/l	RS18B022600	1.04	RS18B022700			
Total Hardness (as CaCO3) mg/l	RS18B022600	131	RS18B022700	93		
Lead - unspecified µg/l	RS18B022600	0.222	RS18B022700			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Sodium - unspecified mg/l	RS18B022600	15.4	RS18B022700			
Thallium - unspecified µg/l	RS18B022600	0.2	RS18B022700			
Total Oxidised Nitrogen (as N) mg/l	RS18B022600	3.15	RS18B022700	2.633		
Zinc - unspecified µg/l	RS18B022600	6.26	RS18B022700			
Total Nitrogen mg/l	RS18B022600	3.45	RS18B022700	4.1		
Vanadium - unspecified µg/l	RS18B022600	1.26	RS18B022700			
Boron - unspecified µg/l	RS18B022600	10.8	RS18B022700			
Chloride mg/l	RS18B022600	26.58	RS18B022700	26.15		
Chromium - unspecified µg/l	RS18B022600	1	RS18B022700			
Calcium - unspecified mg/l	RS18B022600	39.2	RS18B022700			
Dissolved Oxygen % O2	RS18B022600	102	RS18B022700	105		
Beryllium - unspecified µg/l	RS18B022600	1	RS18B022700			
Dissolved Organic Carbon mg/l	RS18B022600	4.04	RS18B022700			
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS18B022600	1	RS18B022700	2		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
<b>Magnesium - unspecified mg/l</b>	RS18B022600	5.7	RS18B022700			
<b>Nitrite (as N) µg/l</b>	RS18B022600	7.182	RS18B022700	9.945		
<b>pH pH units</b>	RS18B022600	7.878	RS18B022700	7.857		
<b>Selenium - unspecified µg/l</b>	RS18B022600	1.36	RS18B022700			
<b>Potassium - unspecified mg/l</b>	RS18B022600	3.4	RS18B022700			
<b>Iron - unspecified µg/l</b>	RS18B022600	163.8	RS18B022700			
<b>Manganese - unspecified µg/l</b>	RS18B022600	21.6	RS18B022700			
<b>Molybdenum - unspecified µg/l</b>	RS18B022600	1	RS18B022700			
<b>Suspended Solids mg/l</b>	RS18B022600	4.4	RS18B022700	10		
<b>Dissolved Oxygen mg/l</b>	RS18B022600	10.267	RS18B022700	10.6		
<b>Strontium - unfiltered µg/l</b>	RS18B022600	62.4	RS18B022700			
<b>True Colour mg/litre Pt Co</b>	RS18B022600	30.2	RS18B022700	47		
<b>Nitrate (as N) mg/l</b>	RS18B022600	3.2	RS18B022700	2.5		
<b>Temperature °C</b>	RS18B022600	13.133	RS18B022700	12.567		
<b>Uranium - unfiltered µg/l</b>	RS18B022600	0.334	RS18B022700			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
<b>Total Phosphorus (as P) mg/l</b>	RS18B022600	0.052	RS18B022700			
<b>Mercury - unspecified µg/l</b>	RS18B022600	0.032	RS18B022700			

### Significance of Results:

The WWTP discharge was compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results does not meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

The discharge from the wastewater treatment plant does not have an observable impact on the water quality.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

## 2.1.4 OPERATIONAL PERFORMANCE SUMMARY - LISMORE WWTP - 2020

### 2.1.4.1 Treatment Efficiency Report - Lismore WWTP - 2020

Treatment efficiency is based on the removal of key pollutants from the influent wastewater by the treatment plant. In essence the calculation is based on the balance of load coming into the plant versus the load leaving the plant. The efficiency is presented as a percentage removal rate.

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
<b>TP</b>	939	286	70
<b>TN</b>	8193	4015	51
<b>cBOD</b>	36136	711	98

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
<b>COD</b>	60124	3408	94
<b>SS</b>	38408	1586	96

Note: The above data is based on sample results for the number of dates reported

### **2.1.4.2 Treatment Capacity Report Summary - Lismore WWTP - 2020**

Treatment capacity is an assessment of the hydraulic (flow) and organic (the amount of pollutants) load a treatment plant is designed to treat versus the current loading of that plant.

<b>Lismore WWTP - 2020</b>	
<b>Peak Hydraulic Capacity (m<sup>3</sup>/day) - As Constructed</b>	2070
<b>DWF to the Treatment Plant (m<sup>3</sup>/day)</b>	690
<b>Current Hydraulic Loading - annual max (m<sup>3</sup>/day)</b>	1684
<b>Average Hydraulic loading to the Treatment Plant (m<sup>3</sup>/day)</b>	616
<b>Organic Capacity (PE) - As Constructed</b>	3000
<b>Organic Capacity (PE) - Collected Load (peak week)<sup>Note1</sup></b>	2172
<b>Organic Capacity (PE) - Remaining</b>	828
<b>Will the capacity be exceeded in the next three years? (Yes/No)</b>	No

Nominal design capacities can be based on conservative design principles. In some cases assessment of existing plants has shown organic capacities significantly higher than the nominal design capacity. Accordingly plants that appear to be overloaded when comparing a collected peak load with the nominal design capacity can be fully compliant due to the safety factors in the original design.

## 2.1.5 SLUDGE / OTHER INPUTS - LISMORE WWTP - 2020

'Other inputs' to the waste water treatment plant are summarised in table below

Input type	Quantity	Unit	P.E.	% of load to WWTP	Included in Influent Monitoring (Y/N)?	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
<b>There is no Sludge and Other Input data for the Treatment Plant included in the AER.</b>							

## 3 COMPLAINTS AND INCIDENTS

### 3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
<b>There were no relevant environmental complaints in 2020.</b>			

### 3.2 REPORTED INCIDENTS SUMMARY

Environmental incidents that arise in an agglomeration are reported on an on-going basis in accordance with our waste water discharge licences. Where an incident occurs and it is reportable under the licence, it is reported to the Environmental Protection Agency through their Environmental Data Exchange Network, or in some instances by telephone. Some incidents which arise in the agglomeration are recorded by Irish Water but may not be reportable under our licence for example where the incident does not have an impact on environmental performance.

A summary of reported incidents is included below.

#### 3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
<b>Uncontrolled release</b>	Adverse Weather	1	No	Yes

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	1
Number of Incidents reported to the EPA via EDEN in 2020	1
Explanation of any discrepancies between the two numbers above	N/A



## 4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

### 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

A summary of the operation of the storm water overflows and their significance where known is included below:

#### 4.1.1 SWO IDENTIFICATION

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
SW002	204856, 98755	Yes	Low	Meeting	67	130045	Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	130045
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	No
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	N/A

## 4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS.

### 4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides list of the various reports required for this agglomeration and a brief summary of their recommendations.

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NAY)	Status of Works	Timeframe for Completing the Work	Comments
<b>D0176-SIP:01</b>	Lismore Sewerage Scheme Waste Water Treatment Plant upgrade	C	31/03/2014	Yes	Works Completed		
<b>D0176-SIP:02</b>	Provision of storm water holding tank and upgrade of storm water overflow (associated with SW002) to comply with the DoECLG 'Procedures and Criteria in relation to Storm Water Overflows, 1995'.	C	31/03/2014	Yes	Works Completed		

A summary of the status of any improvements identified by under Condition 5.2 is included below.

### 4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
<b>There are no Improvements Programme for this Agglomeration.</b>				

### **4.2.3 SEWER INTEGRITY RISK ASSESSMENT**

The utilisation of multiple capital maintenance programmes and the outputs of the workshops with the Local Authority Operations Staff held under the programme can be used to satisfy the requirements of Condition 5 regarding network integrity. Improvement works identified by way of these programmes and workshops will be included in the Improvements Summary Table.

## 5 LICENCE SPECIFIC REPORTS

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides list of the various reports required for this agglomeration and a brief summary of their recommendations.

5.a Licence Specific Reports Summary Table

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
Priority Substances Assessment	Yes	2014	No	

### 5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2014

## 6 CERTIFICATION AND SIGN OFF

### 6.1 SUMMARY OF AER CONTENTS

Parameter	Answer
Does the AER include an Executive Summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for consideration of a Technical Amendment / Review of the licence?	No
List reason e.g. additional SWO identified	N/A
Is there a need to request/advise the EPA of any modification to the existing WWDL with respect to condition 4 changes to monitoring location, frequency etc	No
List reason e.g. changes to monitoring requirements	N/A
Have these processes commenced?	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	Yes

I certify that the information given in this Annual Environmental Report is truthful, accurate and complete:

Signed:    Date: 06/05/2021

This AER has been produced by Irish Water's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of ,

Katherine Walshe

Acting Head of Environmental Regulation.

# 7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

## Ambient Monitoring Summary

The Lismore WWTP discharges to River Blackwater adjacent to the plant.

The WWDL requires bi-monthly Ambient Monitoring of the Receiving Waters at:

- RS1 8B022600 – Lismore Bridge
- RS1 8B022700 – 2km d/s Lismore Bridge

Testing frequency was curtailed during the COVID 19 restrictions in the early part of 2020.

These two locations form part of the EPA River Monitoring locations and therefore the EPA data has been used in this assessment.

SW1u EPA: RS18B022600														
]	LOCATION_CODE	code	Stn+Location	River	DATE_COLLECTE D	pH	Dissolved Oxygen	BOD	Temperature	Ortho-Phosphate	Nitrate	Nitrite	Ammonia	Total Oxidised Nitrogen
							% sat	mg/l	oC	mg/l	mg/l	mg/l	mg/l	mg/l
	RS18B022600		Lismore Bridge	Blackwater	09-Sep-20	8.07	102	0.5	16.1	0.04			0.01	2.9
	RS18B022600		Lismore Bridge	Blackwater	19-Nov-20	7.64	99	1	9.5	0.04	1.6		0.02	1.6
	RS18B022600		Lismore Bridge	Blackwater	15-Dec-20	7.49	111	1	8	0.04	2		0.02	2
	RS18B022600		Lismore Bridge	Blackwater	-	-	-	-	-	-	-	-	-	-
	RS18B022600		Lismore Bridge	Blackwater	-	-	-	-	-	-	-	-	-	-
	RS18B022600		Lismore Bridge	Blackwater	-	-	-	-	-	-	-	-	-	-
	RS18B022600		Lismore Bridge	Blackwater	-	-	-	-	-	-	-	-	-	-
	RS18B022600		Lismore Bridge	Blackwater										
					Average	7.7	104.0	0.8	11.2	0.0	1.8		0.0	2.2
SW1d EPA														
SAMPLE_NC	LOCATION_CODE	code	Stn+Location	River	DATE_COLLECTE D	pH	Dissolved Oxygen	BOD	Temperature	Ortho-Phosphate	Nitrate	Nitrite	Ammonia	Total Oxidised Nitrogen
							% sat	mg/l	oC	mg/l	mg/l		mg/l	mg/l
	RS18B022700		2km d/s Lismore B	Blackwater	09-Sep-20	8.07	105	2	16.2	0.04			0.01	2.9
	RS18B022700		2km d/s Lismore B	Blackwater	19-Nov-20	7.58	102	0.5	9.7	0.04	1.4		0.02	1.4
	RS18B022700		2km d/s Lismore B	Blackwater	15-Dec-20	7.68	107	0.5	7.8	0.05	2		0.02	2
	RS18B022700		2km d/s Lismore B	Blackwater	-	-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-	-
					Average	7.78	104.67	1.00	11.23	0.043	1.700		0.017	2.10

Figure 7.1.1 – Lismore WWTP Ambient Monitoring Results 2019 [Source EPA]



Table 7.1.2 Ambient Monitoring Results SW1u							
Parameter	SW0u	SW0u	SW0u	SW0u	SW0u	SW0u	EQS (River Water)
Date	09/09/2020	19/11/2020	15/12/2020	-	-	-	-
pH	8.07	7.64	7.49	-	-	-	6.0 < pH <9.0
DO%	102	99	111	-	-	-	120% > 95%ile > 80%
Temp	16.1	9.5	8	-	-	-	
BOD	0.5	1	1	-	-	-	High Status ≤1.3 Good Status ≤1.5
Orthophosphate (as P)	0.04	0.04	0.04	-	-	-	High Status ≤0.025
							Good Status ≤0.035
Total Oxideised Nitrogen	2.9	1.6	2	-	-	-	Not specified
Total Ammonia (as N)	0.01	0.02	0.02	-	-	-	High Status ≤0.040
							Good Status ≤0.065

Table 7.1.3 Ambient Monitoring Results SW1d							
Parameter	SW0d	SW0d	SW0d	SW0d	SW0d	SW0d	EQS (River Water Body)
Date	09/09/2020	19/11/2020	15/12/2020	-	-	-	-
pH	8.07	7.58	7.68	-	-	-	6.0 < pH <9.0
DO%	105	102	107	-	-	-	120% > 95%ile > 80%
Temp	16.2	9.7	7.8	-	-	-	
BOD	2	0.5	0.5	-	-	-	High Status ≤1.3 Good Status ≤1.5
Orthophosphate (as P)	0.04	0.04	0.05	-	-	-	High Status ≤0.025
							Good Status ≤0.035
Total Oxideised Nitrogen	2.9	1.4	2	-	-	-	Not specified
Total Ammonia (as N)	0.01	0.02	0.02	-	-	-	High Status ≤0.040
							Good Status ≤0.065

<b>Table 7.1.4 Ambient Monitoring Results Up and Down Stream Annual Average Comparison</b>						
<b>Parameter</b>	<b>pH</b>	<b>DO%</b>	<b>BOD</b>	<b>Orthophosphate (as P)</b>	<b>Total Oxidised Nitrogen</b>	<b>Total Ammonia (as N)</b>
SW1u [Annual Average]	7.73	104.00	0.83	0.04	2.17	0.02
SW1d [Annual Average]	7.78	104.67	1.00	0.04	2.10	0.02
Difference between SW1u & SW2d	-0.04	-0.67	-0.17	0.00	0.07	0.00
<b>EQS (River Water Body)</b>	<b>6.0 &lt; pH &lt; 9.0</b>	<b>120% &gt; 95%ile &gt; 80%</b>	<b>High Status ≤1.3</b> <b>Good Status ≤1.5</b>	<b>High Status ≤0.025</b> <b>Good Status ≤0.035</b>	<b>Not specified</b>	<b>High Status ≤0.040</b> <b>Good Status ≤0.065</b>

*Figures 7.1.2 to 7.1.4 – Lismore WWTP Ambient Monitoring – Comparison of Upstream and Downstream Results*

The above sampling shows that the discharge from Lismore WWTP does not have a detrimental impact on the discharge surface water quality.