Annual Environmental Report

2020

Rathcormac

D0200-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0200-01, Rathcormac, in Cork 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.

Improvement Works outlined under Improvement Identifier D0200-IP:15 in 2019 AER completed in Q1 2020. This included the following works: Removal of existing FBDA system, air feed pipes, supports and supernatant decanting system in SBR Tank No.2. Constructing a dividing wall across SBR No 2 to section off a separate area in the tank to provide 150 m3 nominal storage capacity. Mechanical fit out of buffer tank. Provision of a glavanised mild steel platform c/w access stairway fitted with hand railing and open grid flooring supported off the tank side wall. 2 no. Duty and standby buffer tank emptying pumps. 2 no. sluice valves and 2 no. check valves on the pump delivery line. 1 no 150mm magmeter and 2 no 150 mm actuated kinife gate valves for regulating the flow to SBR Tanks. Instrumentation includeing ultrasonic level sensor, SBR common deed flow transmitter and SBR DO caps. New form 1 panel. Electrical install, automation and commissioning works.

1.2 TREATMENT SUMMARY

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

Rathcormac WWTP - 2020 with a Plant Capacity PE of 2670, 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
TPEFF0500D0200SW001	Rathcormac WWTP - 2020	Treated	Non-Compliant	Ammonia-Total (as N) mg/l BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l COD-Cr mg/l ortho-Phosphate (as P) - unspecified mg/l Suspended Solids mg/l

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 RATHCORMAC WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - RATHCORMAC 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
COD-Cr mg/l	11	1061	592
Total Nitrogen mg/l	10	185.4	84.38
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	11	750	316.22
Suspended Solids mg/l	11	403	230.64
Total Phosphorus (as P) mg/l	11	69.2	13.45
Hydraulic Capacity	N/A	1356	354

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’.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF0500D0200SW001

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)
COD-Cr mg/l	125	250	N/A	13	4	2	120.99	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	4	3	44.62	Fail
Suspended Solids mg/l	25	62.5	N/A	12	4	1	25.17	Fail
pH pH units	9	9	N/A	13	N/A	N/A	7.72	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	13	12	12	40.12	Fail
ortho-Phosphate (as P) - unspecified mg/l	2	2.4	N/A	13	3	2	2.29	Fail

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):

Upgrade works at the WWTP were completed in Q1 2020 by minor programme, process proving and optimisation followed this throughout the remainder of 2020.

The plant was non-compliant in 2020 as a result of adjustments that needed to be made to the plant after the upgrade works had been carried out and initial difficulties in obtaining control of the biological process. The plant was compliant for the remainder of 2020 once these issues were resolved. Irish Water's ability to react to these issues was seriously impacted by the Covid 19 pandemic and restrictions on site access that were in place.

In addition to the requirement to comply with the UWWTD, the plant must also comply with ammonia and phosphorus emission limit values in its waste water discharge licence. The plant was UWWTD compliant in 2019 because of some very specific operational control measures that were put in place in 2018 and before the upgrade works. The modifications undertaken in 2019/2020 were done in an effort to match the design capacity better to the incoming load, to obtain better control of the process and deliver both UWWTD and ammonia compliance, given that the plant was originally over-designed and was suffering from non-compliance as a result. The plant, as it was originally configured, could not achieve ammonia compliance even with the control measures that had been put in place. The achievement of both UWWTD and ammonia is quite challenging at this site. Even though the physical changes were made in 2019/2020, the work of optimising the control continued well into 2020 and are still ongoing as we try to get ammonia compliance despite the interruptions to site visits as a result of Covid restrictions. Upgrade works and process optimisation have now been completed and the plant was compliant in May 2021. The aim is now to maintain compliance so that 12 months of compliant data should be achieved by May 2022.

Significance of Results:

The WWTP is non compliant with the ELV's set in the Wastewater Discharge Licence. The impact on receiving waters is assessed further in Section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0500D0200SW001

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	180832, 90620	RS18B050300	No	No	Yes	No	Good
Downstream	181295, 90676	RS18B050320	No	No	Yes	No	Good

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	RS18B050300	1.32	RS18B050320	1.35	1.5	2.4
Ammonia-Total (as N) mg/l	RS18B050300	0.03	RS18B050320	0.06	0.07	57.4
ortho-Phosphate (as P) - unspecified mg/l	RS18B050300	0.02	RS18B050320	0.02	0.04	16.1
Nitrite (as N) µg/l	RS18B050300	4.75	RS18B050320			
pH pH units	RS18B050300	7.7	RS18B050320	7.68		
Conductivity @25°C µS/cm	RS18B050300	196.25	RS18B050320			
Dissolved Oxygen % Saturation	RS18B050300	104.19	RS18B050320	99.38		
Suspended Solids mg/l	RS18B050300	4.63	RS18B050320	5.25		
Total Oxidised Nitrogen (as N) mg/l	RS18B050300	3.18	RS18B050320			
Chloride mg/l	RS18B050300	16.83	RS18B050320			
True Colour mg/litre Pt Co	RS18B050300	23.5	RS18B050320			
Temperature °C	RS18B050300	12.8	RS18B050320	12.1		
Alkalinity-total (as CaCO3) mg/l	RS18B050300	54	RS18B050320			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Nitrate (as N) mg/l	RS18B050300	3.15	RS18B050320			
Dissolved Oxygen mg/l	RS18B050300	11.28	RS18B050320			
Total Hardness (as CaCO3) mg/l	RS18B050300	72	RS18B050320			

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

Based on ambient monitoring results a sligth deterioration in Ammonia - Total (as N) and Ortho-Phosphate (as P), concentrations downstream of the effluent discharge is noted however results remain below the EQS values.

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 - RATHCORMAC WWTP - 2020

2.1.4.1 Treatment Efficiency Report - Rathcormac 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)
TN	11749	N/A	N/A

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
SS	31316	2699	91
COD	80381	12664	84
TP	1826	N/A	N/A
cBOD	42936	4814	89

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

2.1.4.2 Treatment Capacity Report Summary - Rathcormac 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.

Rathcormac WWTP - 2020	
Peak Hydraulic Capacity (m^3/day) - As Constructed	1802
DWF to the Treatment Plant (m^3/day)	600
Current Hydraulic Loading - annual max (m^3/day)	1356
Average Hydraulic loading to the Treatment Plant (m^3/day)	354
Organic Capacity (PE) - As Constructed	2670
Organic Capacity (PE) - Collected Load (peak week)[Note1]	2099
Organic Capacity (PE) - Remaining	571
Will the capacity be exceeded in the next three years? (Yes/No)	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 - RATHCORMAC 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)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

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
There were no relevant environmental complaints in 2020.			

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)
Breach of ELV	Inadequate Infrastructure	1	Yes	No
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	No
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Adverse Weather	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	5
Number of Incidents reported to the EPA via EDEN in 2020	5
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
SW2	180943, 91619	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW001	180980, 90741	No	Low	Meeting	36	4059	Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	4059
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	N/A
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?	No

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/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
There are no Specified Improvement Programmes for this Agglomeration.							

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
There are no Improvements Programme for this Agglomeration.				

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
Habitats Impact Assessment	Yes		No	
Priority Substances Assessment	Yes	2014	No	

5.1 HABITATS IMPACT ASSESSMENT

The Habitats Impact Assessment Report has been included in the AER

5.2 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: 19/07/2021

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

There are no Appendices included