Annual Environmental Report

2019

Ballinamore

D0281-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0281-01, Ballinamore, in Leitrim 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.

There were minor works carried out at Ballinamore WWTP including the supply and installation of a new sludge holding tank, improved activated sludge system, new instruments, valves, flowmeters and upgraded controls. This work was completed in early 2019 by RCC Engineering as part of a Minor Capital Works Programme.

1.2 TREATMENT SUMMARY

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

- BALLINAMORE WWTP with a Plant Capacity PE of 2000, 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
TPEFF1700D0281SW001	BALLINAMORE WWTP	Treated	Non-Compliant	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 BALLINAMORE WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - BALLINAMORE WWTP

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	6	4.49	2.03
Total Nitrogen mg/l	6	44	16.17
Suspended Solids mg/l	6	110	73.31
COD-Cr mg/l	6	405	213.43
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	155	79.24
Hydraulic Capacity	N/A	898	386

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 - TPEFF1700D0281SW001

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	6	0	0	22.65	Pass
Temperature °C	25	N/A	N/A	6	0	0	9.99	Pass
Suspended Solids mg/l	10	25	N/A	6	3	0	9.8	Fail
pH pH units	9	9	N/A	6	0	0	7.22	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6.5	13	N/A	6	1	0	2.97	Pass
Ammonia-Total (as N) mg/l	3	3.6	N/A	6	0	0	0.08	Pass
Ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	6	0	0	0.42	Pass
Total Nitrogen mg/l	N/A	N/A	N/A	6	N/A	N/A	17.13	
Odour Descriptive	N/A	N/A	N/A	6	N/A	N/A	N/A	
Conductivity 20 C µS/cm	N/A	N/A	N/A	6	N/A	N/A	415.51	

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)
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	6	N/A	N/A	0.54	
Appearance (on Sampling) Descriptive	N/A	N/A	N/A	6	N/A	N/A	N/A	

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):

Exceedance was caused by inadequate infrastructure. A plant upgrade is required in order to meet the ELV's set out in the licence. Incident Number: 1014219

Significance of Results:

The WWTP was non-compliant with the ELV's for Suspended Solids set in the wastewater discharge license. The impact on receiving waters is assessed further in Section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1700D0281SW001

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	212789, 311441	RS36Y010400	No	No	No	No	Unassigned
Downstream	213726, 308974	RS36Y010620	No	No	No	No	Unassigned
Downstream	212244, 310931	RS36Y010520	No	No	No	No	Unassigned

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	RS36Y010400	0.72	RS36Y010520	0.79	1.5	4.7
BOD - 5 days (Total) mg/l	RS36Y010400	0.72	RS36Y010620	0.84	1.5	8
Ammonia-Total (as N) mg/l	RS36Y010400	0.036	RS36Y010520	0.052	0.065	24.8
Ammonia-Total (as N) mg/l	RS36Y010400	0.036	RS36Y010620	0.043	0.065	11.2
Ortho-Phosphate (as P) - unspecified mg/l	RS36Y010400	0.013	RS36Y010520	0.018	0.035	14.6
Ortho-Phosphate (as P) - unspecified mg/l	RS36Y010400	0.013	RS36Y010620	0.022	0.035	25.1

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Total Nitrogen mg/l	RS36Y010400	0.73	RS36Y010520	0.77		
Temperature °C	RS36Y010400	11.53	RS36Y010520	11.16		
Temperature °C	RS36Y010400	11.53	RS36Y010620	10.89		
Total Nitrogen mg/l	RS36Y010400	0.73	RS36Y010620	0.93		
pH pH units	RS36Y010400	7.278	RS36Y010620	7.29		
Dissolved Oxygen % O2	RS36Y010400	94.44	RS36Y010520	96.69		
Dissolved Oxygen mg/l	RS36Y010400	10.419	RS36Y010520	10.734		
Dissolved Oxygen % O2	RS36Y010400	94.44	RS36Y010620	95.79		
Dissolved Oxygen mg/l	RS36Y010400	10.419	RS36Y010620	10.677		
pH pH units	RS36Y010400	7.278	RS36Y010520	7.261		

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 deterioration in Ammonia, BOD and Ortho-Phosphate concentrations downstream of the effluent discharge is noted.

The discharge from the wastewater treatment plant does have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - BALLINAMORE WWTP

2.1.4.1 Treatment Efficiency Report - BALLINAMORE WWTP

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)
cBOD	12172	520	96
TP	312	94	70
TN	2483	2995	-20.59
COD	32784	3960	88
SS	11260	1713	85

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

2.1.4.2 Treatment Capacity Report Summary - BALLINAMORE WWTP

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.

BALLINAMORE WWTP	
Peak Hydraulic Capacity (m³/day) - As Constructed	1350
DWF to the Treatment Plant (m³/day)	450
Current Hydraulic Loading - annual max (m³/day)	898

Average Hydraulic loading to the Treatment Plant (m^3/day)	386
Organic Capacity (PE) - As Constructed	2000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	1373
Organic Capacity (PE) - Remaining	627
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 - BALLINAMORE WWTP

'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
1	Blocked Sewer	0	1

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)
Other	Inadequate Operational Procedures / Training	1	No	Yes
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	2
Number of Incidents reported to the EPA via EDEN in 2019	2
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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
SW003	212349, 311223	Yes	Low	Meeting	Unknown	Unknown	Monitored
SW005	213021, 311487	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
SW004	212354, 311243	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	212343, 311212	No	Low	Meeting	Unknown	Unknown	Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	63385
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?	Yes

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
D0281-SIP:01	Cessation of unauthorized discharges from SW2 and upgrade of sewer network at SW2 to ensure compliance with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to Storm Water Overflows, 1995"	C	30/04/2012	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
D0281-IP:47	New sludge holding tank. Improved activated sludge system, new instruments, valves, flowmeters and upgraded controls.	Improved Operational Control		

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.

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
Drinking Water Abstraction Point Risk Assessment	Yes	2012	No	
Priority Substances Assessment	Yes	2012	No	

5.1 DRINKING WATER ABSTRACTION POINT RISK ASSESSMENT

The Drinking Water Abstraction Point Risk Assessment Report has been included in the 2012 AER.

5.2 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the 2012 AER.

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?	Yes
List reason e.g. additional SWO identified	Additional SWO Identified.
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.	Yes
List reason e.g. changes to monitoring requirements	Change to Ambient monitoring locations: Upstream.
Have these processes commenced?	Yes
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	No

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

Signed: Date: 09/04/2020

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