Annual Environmental Report

2023

Ballymote

D0094-01

CONTENTS

7.1 AMBIENT MONITORING SUMMARY

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER

This Annual Environmental Report has been prepared for D0094-01, Ballymote, in Sligo 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.

1.2 TREATMENT SUMMARY

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

- Ballymote WWTP with a Plant Capacity PE of 3500, the treatment type is 2 - Secondary treatment .

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
TPEFF2700D0094SW001	Ballymote WWTP	Treated	Non-Compliant	ortho-Phosphate (as P) - unspecified mg/l

1.4 LICENCE SPECIFIC REPORTING

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

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 BALLYMOTE WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - BALLYMOTE 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
Ammonia-Total (as N) mg/l	11	76	11
ortho-Phosphate (as P) - unspecified mg/l	10	9.33	1.83
BOD, 5 days with Inhibition (Carbonaceo mg/l	12	407	120
COD-Cr mg/l	12	2500	518
Total Phosphorus (as P) mg/l	12	29	7.32
Total Nitrogen mg/l	12	158	44
ortho-Phosphate (as PO4) mg/l	1	6.55	6.55
Suspended Solids mg/l	12	2060	336
Hydraulic Capacity	N/A	5559	1444

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 greater 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 - TPEFF2700D0094SW001

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 exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	12	N/A	N/A	16	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	8.87	Pass
Temperature °C	25	25	N/A	9	N/A	N/A	9.26	Pass
BOD, 5 days with Inhibition (Carbonaceo mg/l	25	50	N/A	12	N/A	N/A	1.69	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.99	Pass
Ammonia-Total (as N) mg/l	1.5	1.8	N/A	19	N/A	N/A	0.154	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	18	3	2	0.806	Fail

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 exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	3	N/A	N/A	12	
Conductivity @20°C µS/cm	N/A	N/A	N/A	9	N/A	N/A	535	
Fats, Oils & Greases mg/l	N/A	N/A	N/A	4	N/A	N/A	5.00	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	10	N/A	N/A	0.674	
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	6.05	
ortho-Phosphate (as PO4) mg/l	N/A	N/A	N/A	1	N/A	N/A	0.050	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 – For pH the WWDA specifies a range of pH 6 - 9

Cause of Exceedance(s):

Refer to Incident Section of the report.

Significance of Results:

The WWTP is not compliant with the ELVs set out 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 TPEFF2700D0094SW001

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 Ecological Status
Upstream	166161, 314660	RS35B040100	No	No	No	No	Moderate
Downstream	165371, 313605	RS35O060260	No	No	No	No	Moderate

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1 - Ambient monitoring summary**

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence for the following: ortho-Phosphate (as P) - unspecified mg/l.

The ambient monitoring results do not meet the required EQS at the downstream monitoring location. 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 Ortho-phosphate, BOD, Ammonia, concentrations downstream of the effluent discharge is noted.

A deterioration in water quality has been identified, however it is not known if it or is not caused by the WWTP.

Other causes of deterioration in water quality in the area are unknown.

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 - BALLYMOTE WWTP

2.1.4.1 Treatment Efficiency Report - Ballymote 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	51465	689	99
TP	3141	306	90
COD	222262	6696	97
TN	18780	2464	87
SS	144046	3609	97

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

2.1.4.2 Treatment Capacity Report Summary - Ballymote 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.

Ballymote WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	2025
DWF to the Treatment Plant (m^3/day)	675
Current Hydraulic Loading - annual max (m^3/day)	5559

Ballymote WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	1444
Organic Capacity (PE) - As Constructed	3500
Organic Capacity (PE) - Collected Load (peak week)[Note1]	2594
Organic Capacity (PE) - Remaining	906
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 - BALLYMOTE 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 related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2023.			

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 Uisce Éireann 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	Recurring (Y/N)	Closed (Y/N)
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	Yes
Breach of ELV	WWTP not designed for P removal	Yes	No
Plant or equipment breakdown at WWTP	Plant or equipment breakdown at WWTP	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2023	3
Number of Incidents reported to the EPA via EDEN in 2023	3
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 (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2023 (No. of events)	Total volume discharged in 2023 (m3)	Monitoring Status
SW002	166132,314515	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Monitored
SW003	166124,315060	Yes	Medium Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
-	-,-	No	Low Significance	Not Meeting Criteria	Unknown	Unknown	TBC

Any TBC SWO(s) were identified as part of the on-going National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much wastewater discharge by metered SWOs during the year (m3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes

SWO Summary	
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 a 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
D0094-SIP:01	Any works required to reduce BOD and Orthophosphate levels to meet the ELV specified in schedule A.1: Primary Waste Water Discharges of this licence (Column 2).	C	31/12/2015	Yes	Works Completed	2021	
D0094-SIP:02	SWA - Upgrading of Storm Water Overflows to comply with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to Storm Water Overflows, 1995".	C	31/12/2015	Yes	Works Completed	2021	

A summary of the status of any other improvements identified by under Condition 5 assessments- is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
No additional improvements planned at this time.				

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 Tables 4.2.1 and 4.2.2.

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 a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Licence Specific Report	Required by licence	Included in this AER
D0094-01-Priority Substances Assessment	Yes	No

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?	N/A
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	Yes
List reason e.g. changes to monitoring requirements	Ambient Monitoring Location Changes
Have these processes commenced?	No
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: 27/05/2024

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

Eleanor Roche

Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

Ambient Monitoring Data

Sample Reference	Date Sampled	Dissolved Oxygen	Dissolved Oxygen	Hydrogen Ion (pH)	Orthophosphate	Temperature	Total Ammonia	Total Nitrogen	Total Phosphorus	cBOD
		%**	mg/L	pH units	mg/L P	°C	mg/L N	mg/L	mg/L P	mg/L O2
Ballymote U/S	04/01/2023		9.4	7.6	<0.05	7.3	<0.05	1.3	<0.2	3.2
Ballymote U/S	02/02/2023		9.4	7.8	<0.05	6.3	<0.05	<1	<0.2	1.3
Ballymote U/S	03/02/2023		9.6	7.5	<0.05	6.4	<0.05	1.3	<0.2	2
Ballymote U/S	03/03/2023		9.7	8.0	<0.05	5.9	<0.05	<1	<0.2	2.5
Ballymote U/S	25/05/2023	95.9	9.66	8.2	< 0.01	14.8	< 0.02	1	0.04	< 1.0
Ballymote U/S	14/07/2023	99.35	9	8.1	0.05	16.1	0.06	1.4	0.1	< 1.0
Ballymote U/S	11/08/2023	81.39	7.97	7.8	0.02	16.4	0.05	1.4	< 0.04	< 1.0
Ballymote U/S	01/09/2023	91.22	8.28	8.7	0.03	14.2	< 0.02	1.1	< 0.04	1.1
Ballymote U/S	27/10/2023	75.8	8.22	7.6	0.03	10.1	0.05	1.5	0.1	1.8
Ballymote U/S	10/11/2023	89.7	10.24	7.7	0.02	8.6	0.02	1.3	0.05	< 1.0
Ballymote D/S	25/05/2023	92.2	9.29	8.2	< 0.01	14.6	< 0.02	1	0.08	8.4
Ballymote D/S	14/07/2023	108.09	9.97	8.1	0.05	16.2	0.14	1.3	0.17	1.3
Ballymote D/S	11/08/2023	73.07	7.14	7.9	0.02	16.5	0.03	1.3	0.05	< 1.0
Ballymote D/S	01/09/2023	97.12	8.94	8.5	0.03	14	< 0.02	1.8	< 0.04	< 1.0
Ballymote D/S	27/10/2023	75.5	8.16	7.5	0.02	10.3	< 0.02	1.4	0.11	1.9
Ballymote D/S	10/11/2023	87.9	10.08	7.7	0.02	8.2	0.02	1.2	0.06	< 1.0