

Annual Environmental Report

2019



Drumshanbo

D0144-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0144-01, Drumshanbo, 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.

Improvements are as follows: • New Inlet screen with grit removal and flow meter • Upgraded aeration system (FBDA) • New RAS/WAS pumps • New sludge holding tank • Re-purposed tank for storm water retention and return • New control room kiosk, MCC and HMI/PLC • HSQE improvements.

1.2 TREATMENT SUMMARY

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

- Drumshanbo WWTP with a Plant Capacity PE of 4000, 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
TPEFF1700D0144SW001	Drumshanbo WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l BOD, 5 days with Inhibition (Carbonaceous BOD) 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 DRUMSHANBO WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - DRUMSHANBO 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
Suspended Solids mg/l	12	213	121.55
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	237	113.31
COD-Cr mg/l	12	705	321.44
Total Phosphorus (as P) mg/l	12	7.21	3.38
Total Nitrogen mg/l	12	50	24.5
Hydraulic Capacity	N/A	1900	907

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 - TPEFF1700D0144SW001

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	12	0	0	24.37	Pass
Temperature °C	25	N/A	N/A	12	0	0	12.06	Pass
Suspended Solids mg/l	10	25	N/A	12	4	0	9.99	Fail
pH pH units	9	9	N/A	12	0	0	7.36	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	2	4	N/A	12	3	3	2.12	Fail
Ortho-Phosphate (as P) - unspecified mg/l	0.3	0.6	N/A	12	4	2	0.27	Fail
Ammonia-Total (as N) mg/l	0.21	0.42	N/A	12	1	1	1.15	Fail
Appearance (on Sampling) Descriptive	N/A	N/A	N/A	12	N/A	N/A	N/A	
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	10.81	

Total Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.49	
Conductivity 20 C µS/cm	N/A	N/A	N/A	12	N/A	N/A	469.77	
Odour Descriptive	N/A	N/A	N/A	12	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 and equipment breakdown. Incident number INC1008888.

Significance of Results:

The WWTP is not compliant with the ELV's for Suspended Solids, BOD, Ortho-phosphate and Ammonia 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 TPEFF1700D0144SW001

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	197358, 310808	RS26M800930	No	No	No	No	Poor
Downstream	197240, 311350	RS26D050400	No	No	No	No	Poor

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	RS26M800930	1.05	RS26D050400	1.66	1.5	40.7
Ammonia-Total (as N) mg/l	RS26M800930	0.051	RS26D050400	0.389	0.065	521.1
Ortho-Phosphate (as P) - unspecified mg/l	RS26M800930	0.018	RS26D050400	0.04	0.035	60.9
Temperature °C	RS26M800930	10.35	RS26D050400	10.14		
pH pH units	RS26M800930	7.417	RS26D050400	7.305		
Dissolved Oxygen mg/l	RS26M800930	11.086	RS26D050400	10.647		
Total Nitrogen mg/l	RS26M800930	0.845	RS26D050400	2.09		
Dissolved Oxygen % O2	RS26M800930	98.26	RS26D050400	93.41		

Significance of Results:

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

The ambient monitoring results do not 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, deteriorations in Ammonia, BOD, and Ortho-Phosphate concentrations downstream of the effluent discharge are 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 - DRUMSHANBO WWTP

2.1.4.1 Treatment Efficiency Report - Drumshanbo 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)
SS	32185	3097	90
SS	32185	3097	90
TP	894	151	83
COD	85110	7551	91
TP	894	151	83
TN	6488	3351	48
cBOD	30001	656	98

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

2.1.4.2 Treatment Capacity Report Summary - Drumshanbo 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.

Drumshanbo WWTP	
Peak Hydraulic Capacity (m³/day) - As Constructed	2700
DWF to the Treatment Plant (m³/day)	900
Current Hydraulic Loading - annual max (m³/day)	1900
Average Hydraulic loading to the Treatment Plant (m³/day)	907
Organic Capacity (PE) - As Constructed	4000
Organic Capacity (PE) - Collected Load (peak week)^{Note1}	1654
Organic Capacity (PE) - Remaining	2346
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 - DRUMSHANBO 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)
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
Uncontrolled release	SWO Lack of tank storage capacity	1	No	No
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
Uncontrolled release	EO caused by pump failure	1	No	No
Breach of ELV	Inadequate Infrastructure	1	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	5
Number of Incidents reported to the EPA via EDEN in 2019	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
SW2	197354, 311340	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW3	197437, 311030	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
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
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
D0144-IP:45	Irish Water detail as follows: • New Inlet screen with grit removal and flow meter • Upgraded aeration system (FBDA) • New RAS/WAS pumps (sludge wheel removed) • New sludge holding tank • Re-purposed tank for storm water retention and return • New control room kiosk, MCC and HMI/PLC • HSQE improvements incl. access and site lighting	Other		The works listed will enhance the operation of the WWTP but it is highly unlikely that it will be capable of meeting the ELV's set out in the EPA licence as there is inadequate assimilative capacity in the discharge river/stream during the summer period.

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: Downstream.
Have these processes commenced?	Yes
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: 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