Annual Environmental Report

2018

Mullinahone

D0456-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0456-01, Mullinahone, in Tipperary in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports are included as an appendix to the AER as follows:

1.1 Licence specific reporting included in AER

Assessment / Report	Included in AER

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant Mullinahone WWTP with a Plant Capacity PE of 500. The treatment process includes the following:

1.2.1 Mullinahone WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Manual inlet bar screen
Primary Treatment	Yes	Imhoff tank
Secondary Treatment	Yes	2 No RBC units (Blivets)
Nutrient Removal	No	
Tertiary Treatment	No	

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 2.2 Discharges from the agglomeration.

1.3 ELV Overview

1.3.1 Mullinahone WWTP

Compliance Status	
Were all parameters compliant for Mullinahone WWTP treatment plant	No
Where noncompliant see table 2.2.1 for details of parameters	

1.4 Sludge Removal

The amount of sludge removed from the wastewater treatment plant is shown below along with the transported destination of the sludge from the treatment plant.

Treatment Plant	Sludge type	Quantity	Unit	% Dry Solids	Destination
Mullinahone WWTP	Liquid Sludge	230	Weight (Tonnes)	1.5	Clonmel WWTP
Mullinahone WWTP	Liquid Sludge	280	Weight (Tonnes)	1.5	Carrick WWTP
Mullinahone WWTP	Liquid Sludge	80	Weight (Tonnes)	1.5	Fethard WWTP
Mullinahone WWTP	Liquid Sludge	184.8	Weight (Tonnes)	1.5	BEOFS Callan

Annual Statement of Measures

IW is assessing if additional measures are required to resolve Sole Pressure before confirming Corrective Action Plan and has also included this agglomeration in the RC3 Capital Investment submission to CRU for deliberation mid-2019.

2 MONITORING REPORTS SUMMARY

2.1 Summary report on monthly influent monitoring

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

2.1.1 Influent Monitoring Summary - Mullinahone WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
Total Phosphorus (as P) mg/l	5	11.4	6.68
Total Nitrogen mg/l	1	111	111
COD-Cr mg/l	5	568	350.05
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	5	450	189.65
Suspended Solids mg/l	5	99	84.14
Hydraulic Capacity	0	580	400

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 3.5 if applicable

Significance of Results:

The annual mean hydraulic loading is greater than the peak Treatment Plant Capacity as detailed further in Section 3.2. The annual maximum hydraulic loading is greater than the peak Treatment Plant Capacity as detailed further in Section 3.2.

2.2 Discharges from the agglomeration

2.2.1 Effluent Monitoring Summary - Mullinahone WWTP

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedences	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Ammonia-Total (as N) mg/l	10	12	0	5	2	2	12.83	Fail
ortho-Phosphate (as P) - unspecified mg/l	5	6	0	5	1	0	2.86	Pass
Suspended Solids mg/l	35	87.5	0	5	2	1	41.31	Fail
COD-Cr mg/l	125	250	0	5	1	1	96.68	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	5	3	1	27.52	Fail
pH pH units	0	0	0	5	0	0	7.25	Pass

Notes:
1– This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 - For parameters where a mean ELV applies

Cause of Exceedance(s):

The WWTP requires an Upgrade which is currently in progress and expected to be completed in 2019.

Significance of Results:

The WWTP is not compliant with the ELV’s set in the Wastewater Discharge Licence.

2.3 Ambient monitoring summary

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.

2.3.1 Ambient Monitoring Report Summary - Mullinahone WWTP

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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	233638, 139655	TPEFF2900D0456SW001	No	No	No	No	Poor
Downstream	233411, 138894	TPEFF2900D0456SW001	No	No	No	No	Poor

2.3.2 Ambient Monitoring Parameter Summary - Mullinahone WWTP

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.

The ambient monitoring results did not meet the required EQS.

The parameters which exceeded the EQS and may be causing an are: Ammonia, BOD, and ortho-P do not meet EQS both upstream and downstream of the WWTP. There is an increase in concentrations downstream.

Other Potential cause of deterioration in water quality relevant to this area are: Upper catchment pressures are contributing and require investigation.

The EQS assessed relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009, as amended.

3 OPERATIONAL REPORTS SUMMARY

3.1 Treatment Efficiency Report

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:

3.1.1 Treatment Efficiency Report Summary - Mullinahone WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
SS	8867.72	4353.63	50.9	
TN	16003.43	5420.98	66.13	
COD	36893.2	10189.61	72.38	
TP	703.89	426.52	39.4	
cBOD	19988.06	2900	85.49	

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

3.2 Treatment Capacity Report Summary

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.

Mullinahone WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	337.5

DWF to the Treatment Plant (m3/day)	112.5
Current Hydraulic Loading - annual max (m3/day)	580
Average Hydraulic loading to the Treatment Plant (m3/day)	400
Organic Capacity (PE) - As Constructed	500
Organic Capacity (PE) - Collected Load (peak week)	491
Organic Capacity (PE) - Remaining	9
Will the capacity be exceeded in the next three years? (Yes/No)	No

3.3 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
4	Blocked Sewer	2	2

3.4 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.

3.4.1 Summary of Incidents

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Non-compliance	WWTP upgrade required to meet ELV	5	Yes	No
Non-compliance	WWTP upgrade required to meet ELV	1	Yes	No

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	2
Number of Incidents reported to the EPA via EDEN in 2018	2
Explanation of any discrepancies between the two numbers above	

3.5 Sludge / Other inputs to the 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)?[3]	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP?[2](Y/N)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

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:

No Appendix Included

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 2018 (No. of events)	Total volume discharged in 2018 (m3)	Monitoring Status
SW2	233644, 139607	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
Is each SWO identified as non 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 / charges 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)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
Upgrade Mullinahone WWTP to meet the emission limit values specified in Schedule A	C	31/12/2019	No	Not Started	30/06/2019	An upgrade is underway for Mullinahone WWTP & due for completion 2019 which will address current and projected loading capacity.

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	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 (e.g. Appendix X).
Drinking Water Abstraction Point Risk Assessment	Yes	Outstanding	No	To be included as part of 2019 AER
Priority Substance Risk Assessment	Yes	Outstanding	No	To be included as part of 2019 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?	No
List reason e.g. additional SWO identified	
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	No
List reason e.g. changes to monitoring requirements	
Have these processes commenced?	
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	No, Drinking water risk assessment and priority substances report required

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

Signed: Date: 29/03/2019

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 ,

Eleanor Roche

Acting Head of Environmental Regulation.

7 APPENDIX

In the appendix include all the detailed or site specific reports that are relevant to the AER. Reports omitted from previous AERs should also be appended here.

Appendix
Appendix 7.1 - Ambient monitoring summary

Mullinahone Ambient Monitoring Data 2018

							Parameter	Ammonia N	Biological Oxyg	COD Chemical	Dissolved Oxyg	Ortho-Phospha	pH	Suspended Sol	Temperature
							Max.	--	--	--	--	--	--	--	--
							Min.	--	--	--	--	--	--	--	--
							Test Method	--	--	--	--	--	--	--	--
Category	Entity	Station	Station Reference	Easting	Northing	Sample Refere	Sample Date	Analyst Conclu	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	Degrees C
Ambient Monitoring	Mullinahone Stream	Upstream @ Mullinahone WWTP	RS16M090440	233572	140133	18550087	24/01/2018	-	0.15	2		9.23	0.05	7.1		7.9
Ambient Monitoring	Mullinahone Stream	Downstream @ Mullinahone WWTP	RS16M090490	233482	138898	18550088	24/01/2018	-	0.16	3		9.22	0.04	7.1		8.2
Ambient Monitoring	Mullinahone Stream	Upstream @ Mullinahone WWTP	RS16M090440	233572	140133	18550565	17/04/2018	-	0.26	4			0.17	7.7		
Ambient Monitoring	Mullinahone Stream	Downstream @ Mullinahone WWTP	RS16M090490	233482	138898	18550566	17/04/2018	-	0.47	5			0.19	7.7		
Ambient Monitoring	Mullinahone Stream	Upstream @ Mullinahone WWTP	RS16M090490	233482	138898	18550939	11/07/2018	-	0.2	7.35		11.32	0.12	8.2		18.1
Ambient Monitoring	Mullinahone Stream	Downstream @ Mullinahone WWTP	RS16M090440	233572	140133	18550936	11/07/2018	-	1.3	4.1		5.1	2.5	7.7		16.1
Ambient Monitoring	Mullinahone Stream	Upstream @ Mullinahone WWTP	RS16M090440	233572	140133	18551451	15/10/2018	-	0.19	1	5	4.55	0.45	7.68		12.7
Ambient Monitoring	Mullinahone Stream	Downstream @ Mullinahone WWTP	RS16M090490	233482	138898	18551452	15/10/2018	-	0.21	2	5	7.58	0.46	8.04		10.6