

# Annual Environmental Report

2023



Aughrim

D0222-01

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# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER

This Annual Environmental Report has been prepared for D0222-01, Aughrim, in Wicklow 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.

An upgrade is scheduled at the WWTP under the small towns and villages scheme with an estimated completion date of Q3 2028. The upgraded capacity is expected to be 2,500 p.e. but this is subject to detailed design evaluation.

## 1.2 TREATMENT SUMMARY

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

- Aughrim WWTP with a Plant Capacity PE of 1500, 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
TPEFF3400D0222SW001	Aughrim WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l BOD, 5 days with Inhibition (Carbonaceous) 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 AUGHRIM WWTP - TREATED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - AUGHRIM 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
<b>BOD, 5 days with Inhibition (Carbonaceous) mg/l</b>	12	294	115
<b>Suspended Solids mg/l</b>	12	225	76
<b>COD-Cr mg/l</b>	12	869	318
<b>Hydraulic Capacity</b>	N/A	3056	740

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'.

## 2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF3400D0222SW002

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)
<b>COD-Cr mg/l</b>	125	250	N/A	12	1	N/A	46	Pass
<b>Suspended Solids mg/l</b>	25	62.5	N/A	12	N/A	N/A	5.00	Pass
<b>BOD, 5 days with Inhibition (Carbonaceous) mg/l</b>	25	50	N/A	12	1	1	7.91	Fail
<b>pH pH units</b>	6	9	N/A	12	N/A	N/A	6.81	Pass
<b>ortho-Phosphate (as P) - unspecified mg/l</b>	5	6	N/A	12	N/A	N/A	1.41	Pass
<b>Ammonia-Total (as N) mg/l</b>	5	6	N/A	12	2	2	1.70	Fail
<b>Total Nitrogen mg/l</b>	N/A	N/A	N/A	12	N/A	N/A	10	
<b>Total Phosphorus (as P) mg/l</b>	N/A	N/A	N/A	12	N/A	N/A	2.09	

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):

Inadequate operational procedures/training

### 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 TPEFF3400D0222SW002

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	313088, 179508	RS10A020120	No	No	No	No	Moderate
Downstream	313357, 179452	RS10A020140	No	No	No	No	Moderate

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
<b>BOD - 5 days (Total) mg/l</b>	RS10A020120	1.02	RS10A020140	1.38	1.50	23.3
<b>Ammonia-Total (as N) mg/l</b>	RS10A020120	0.033	RS10A020140	0.090	0.065	88.5
<b>ortho-Phosphate (as P) - unspecified mg/l</b>	RS10A020120	0.008	RS10A020140	0.015	0.035	18.5
<b>pH pH units</b>	RS10A020120	6.90	RS10A020140	6.78	N/A	
<b>Total Oxidised Nitrogen (as N) mg/l</b>	RS10A020120	1.65	RS10A020140	1.62	N/A	
<b>Temperature °C</b>	RS10A020120	12	RS10A020140	11	N/A	
<b>Nitrite (as N) mg/l</b>	RS10A020120	0.006	RS10A020140	0.011	N/A	
<b>Dissolved Oxygen mg/l</b>	RS10A020120	11	RS10A020140	11	N/A	
<b>Dissolved Oxygen % O2</b>	RS10A020120	100	RS10A020140	100	N/A	
<b>Conductivity @20°C µS/cm</b>	RS10A020120	96	RS10A020140	93	N/A	

### Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence for the following: BOD, 5 days with Inhibition (Carbonaceous) mg/l, Ammonia-Total (as N) 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 Ammonia, BOD and Ortho-P 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.

Aughrim WWTP has been removed from the list of significant pressures in the Cycle 3 Draft Ovoca-Vartry Catchment Report (HA 10). Domestic waste water and urban runoff are cited as the significant pressures on this At Risk waterbody.

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 - AUGHRIM WWTP

### 2.1.4.1 Treatment Efficiency Report - Aughrim 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)
<b>COD</b>	48020	6355	87
<b>SS</b>	11468	697	94
<b>cBOD</b>	17390	1101	94

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

### 2.1.4.2 Treatment Capacity Report Summary - Aughrim 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.

Aughrim WWTP	
<b>Peak Hydraulic Capacity (m<sup>3</sup>/day) - As Constructed</b>	810
<b>DWF to the Treatment Plant (m<sup>3</sup>/day)</b>	270
<b>Current Hydraulic Loading - annual max (m<sup>3</sup>/day)</b>	3056
<b>Average Hydraulic loading to the Treatment Plant (m<sup>3</sup>/day)</b>	740
<b>Organic Capacity (PE) - As Constructed</b>	1500
<b>Organic Capacity (PE) - Collected Load (peak week)<sup>Note1</sup></b>	1915
<b>Organic Capacity (PE) - Remaining</b>	0
<b>Will the capacity be exceeded in the next three years? (Yes/No)</b>	Yes *

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.

\* An upgrade is scheduled at the WWTP under the small towns and villages scheme with an estimated completion date of Q3 2028. The upgraded capacity is expected to be 2,500 p.e. but this is subject to detailed design evaluation.

## 2.1.5 SLUDGE / OTHER INPUTS - AUGHRIM WWTP

'Other inputs' to the waste water treatment plant are summarised in the 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)
<b>There is no Sludge and Other Input data for the Treatment Plant included in the AER.</b>							

## 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
<b>There were no relevant environmental complaints in 2023.</b>			

### 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)
<b>Breach of ELV</b>	Inadequate Operational Procedures/Training	Yes	No
<b>Abatement equipment off-line</b>	Plant or equipment breakdown at WWTP	No	No
<b>Abatement equipment off-line</b>	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 (m <sup>3</sup> )	Monitoring Status
<b>SW003 (SWO from Inlet Works)</b>	313159, 179472	Yes	Low Significance	Meeting Criteria	236	18035	Monitored
<b>TBC (SWO from Primary Tank)</b>	313206, 179460	Yes	Low Significance	Meeting Criteria	344	94989	Monitored

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 (m <sup>3</sup> )?	113024
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 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/NAY)	Status of Works	Timeframe for Completing the Work	Comments
<b>D0222-SIP:01</b>	Cease the discharge of partially treated waste water from the primary settlement tank at the WWTP.	C	31/12/2017	No	Not Started		
<b>D0222-SIP:02</b>	Relocate the emergency overflow associated with Roddenagh Road pumping station from Aughrim fishing lake to the Aughrim River	C	31/07/2015	Yes	Works Completed		
<b>D0222-SIP:03</b>	Secondary Discharge Point to be discontinued	C	31/12/2017	Yes	Not Started		
<b>D0222-SIP:04</b>	Upgrade Aughrim WWTP to provide sufficient treatment capacity to cater for the volume of waste water arising in the agglomeration	C	31/12/2017	Yes	Not Started		

An upgrade is scheduled at the WWTP under the small towns and villages scheme with an estimated completion date of Q3 2028. The upgraded capacity is expected to be 2,500 p.e. but this is subject to detailed design evaluation.

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
<b>No additional improvements planned at this time.</b>				

#### 4.2.3 SEWER INTEGRITY RISK ASSESSMENT

N/A



## 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
<b>Pearl Mussel Report</b>	Yes	No
<b>Priority Substances Assessment</b>	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?	Yes
List reason e.g. additional SWO identified	Capital upgrade
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	N/A

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

Date: 28/02/2024

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**

There are no Appendices included.