Annual Environmental Report

2021

Youghal

D0139-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

This Annual Environmental Report has been prepared for D0139-01, Youghal, in Cork 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)

- Youghal WWTP with a Plant Capacity PE of 16000, the treatment type is 3N - Tertiary N 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
TPEFF0500D0139SW001	Youghal WWTP	Treated	Compliant	N/A

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 YOUGHAL WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - YOUGHAL 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	12	9.57	3.26
COD-Cr mg/l	12	720	469
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	256	169
Total Nitrogen mg/l	12	49	25
Hydraulic Capacity	N/A	10524	3652

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’. 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 - TPEFF0500D0139SW001

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	35	Pass
Suspended Solids mg/l	35	87.5	N/A	12	1	N/A	21	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	N/A	N/A	5.36	Pass
Total Nitrogen mg/l	15	18	N/A	12	N/A	N/A	6.38	Pass
pH pH units	9.00	9.00	N/A	12	N/A	N/A	7.69	Pass
Conductivity @20°C µS/cm	N/A	N/A	N/A	12	N/A	N/A	6008	
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	2.00	
Enterococci (Intestinal) no./100mls	N/A	N/A	N/A	2	N/A	N/A	77	
E. Coli no./100mls	N/A	N/A	N/A	2	N/A	N/A	408	

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 Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	1.46	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	12	N/A	N/A	1.27	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	2.20	
Faecal coliforms no./100mls	N/A	N/A	N/A	2	N/A	N/A	368	

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):

Not applicable

Significance of Results:

The WWTP is compliant with the ELV's set in the Wastewater Discharge Licence.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0500D0139SW001

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	209890, 80935	TW38003144BR2001	No	No	No	No	Good
Downstream	210977, 77118	TW38003144BR2002	No	No	No	No	Good

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 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.

The discharge from the wastewater treatment plant does not have an observable impact on the water quality.

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 - YOUGHAL WWTP

2.1.4.1 Treatment Efficiency Report - Youghal 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)
COD	650206	50312	92
SS	N/A	29984	N/A
cBOD	234552	7653	97
TN	34452	9117	74
TP	4522	2092	54

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

2.1.4.2 Treatment Capacity Report Summary - Youghal 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.

Youghal WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	10800
DWF to the Treatment Plant (m^3/day)	3600
Current Hydraulic Loading - annual max (m^3/day)	10524
Average Hydraulic loading to the Treatment Plant (m^3/day)	3652
Organic Capacity (PE) - As Constructed	16000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	11338
Organic Capacity (PE) - Remaining	4662

Youghal WWTP	
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 - YOUGHAL 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
1	Discharge to waters	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)
Breach of ELV	Shock load to the WWTP	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	3
Number of Incidents reported to the EPA via EDEN in 2021	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
SW002	210941, 77404	No	Medium	Meeting	Unknown	Unknown	Monitored
SW007	210256, 78404	No	Medium	Meeting	Unknown	39652	Monitored
SW010	209271, 76143	No	Medium	Meeting	Unknown	Unknown	Not Monitored
SW000	TBC, TBC	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
SW005	210503, 76112	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
SW006	210970, 77116	Yes	Medium	Meeting	Unknown	Unknown	Not 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 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?	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/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0139-SIP:01	Decommissioning of Cork Hill comminutor station	C	31/12/2015	No	Works Completed		
D0139-SIP:02	New waste water treatment plant (with	C	30/11/2017	No	Works Completed		

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
	denitrification) and ancillary works						
D0139-SIP:03	SW000 Dunn's Park Discharge to cease as Primary Discharge and to operate as a SWO	A		No	Works Completed		Youghal - SW000 Dunn's Park Discharge: In view of challenge to the originally intended new outfall, IW is considering the retention of this outfall as the primary outfall. IW will be carrying out a technical review to determine what, if any, upgrades or repairs might be required. Subject to this review, it is likely that an application will be made in due course for the regularisation of this location as the Primary Discharge point.
D0139-SIP:04	SW002 Paxe's Lane Discharge as a Secondary Discharge to cease and discharge point to operate as an emergency Overflow	A	30/11/2017	Yes	Works Completed		
D0139-SIP:05	SW003 Foxhole Discharge as a Secondary Discharge to cease and discharge point to be decommissioned	A	30/11/2017	Yes	Works Completed		

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
D0139-SIP:06	SW007 Dunn's Park Discharge as a SWO to cease and discharge point to operate as an Emergency Overflow	A	31/12/2019	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis
D0139-SIP:07	SW008 Foxhole Discharge as a SWO to cease and discharge point to operate as an Emergency Overflow	A	30/11/2017	Yes	Works Completed		
D0139-SIP:08	SW009 Kilcoran Discharge as a SWO to cease and discharge point to be decommissioned	A	30/11/2017	Yes	Works Completed		
D0139-SIP:09	SW010 Summerfield B Discharge as a SWO to cease and discharge point to be decommissioned	A	30/11/2017	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis
D0139-SIP:10	Upgrade of drainage network	C	31/12/2017	Yes	Works Completed		
D0139-SIP:11	Upgrade of drainage network	C	31/12/2017	Yes	Works Completed		

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
D0139-SIP:12	Upgrade of Front Strand storm water holding tank	C	31/12/2015	Yes	Works Completed		
D0139-SIP:13	Upgrade of Summerfield and Strand Pumping Station, plus installation of a new pumping station at Green Park	C	30/11/2017	Yes	Works Completed		
D0139-SIP:14	Upgrade of the: Summerfield Pumping Station (associated with SW010), and Strand Pumping Station (associated with SW005)	C	31/12/2015	Yes	Works Completed		
D0139-SIP:15	Upgrading of Storm Water Overflows to comply with the criteria outlined in the DoECLG "Procedures and Criteria in relation to Storm Water Overflows, 1995"	C	31/12/2015	Yes	Works Completed		
D0139-SIP:16	Work to be completed as per Condition 5.6	C	31/12/2020	Yes	Works Completed		

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	Year included in AER	Included in this AER
There is no Licence Specific Report Required in this AER Annual Review.			

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
Has a Technical amendment/licence review application been submitted to the Agency by IW?	Yes
List reason e.g. additional SWO identified	Consent to use Dunns Park as Primary Discharge Point
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	No
List reason e.g. changes to monitoring requirements	N/A
Have these processes commenced?	Yes
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: 16/05/2022

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

Appendix
Appendix 7.1 - Ambient monitoring summary

Youghal Upstream	Transitional						Median	Mean	95%ile
	EQS								
	Mean	95%ile	03/03/2021 12:30	15/06/2021 09:45	18/08/2021 11:40	27/10/2021 10:30			
D.O % O_2	80%<95%ile<120%		97.5	102.9	94.4	98.2			102.2
Temperature C^o	≤ 1.5 C^o increase		8.3	13	16.3	15.2		13.2	16.1
pH	6 < pH < 9		8.1	8.0	8.0	8.0		8.0	8.1
BOD mg/L	n/a	≤ 4	0.5	0.5	2	0.5			1.8
Orthophosphate (P) mg/l	≤0.04 @35 PSU (Median)		0.02	0.01	0.04	0.02	0.020		
Ammonia (N) mg/l	≤ 0.065	≤ 0.140	0.0175	0.0175	0.054	0.0175		0.027	0.049
TN (N) mg/l	n/a		2.7	0.6	1.5	0.25			

Youghal Downstream	Transitional						Median	Mean	95%ile
	EQS								
	Mean	95%ile	03/03/2021 12:15	15/06/2021 10:15	18/08/2021 12:12	27/10/2021 10:30			
D.O % O_2	80%<95%ile<120%		98.3	105.5	96.8	98.9			104.5
Temperature C^o	≤ 1.5 C^o increase		8.5	12.9	14.5	14.8		12.7	14.8
pH	6 < pH < 9		8.0	8.1	8.0	7.9		8.0	8.1
BOD mg/L	n/a	≤ 4	1.1	1	1.1	2.6			2.4
Orthophosphate (P) mg/l	≤0.04 @35 PSU (Median)		0.02	0.005	0.02	0.03	0.020		
Ammonia (N) mg/l	≤ 0.065	≤ 0.140	0.0175	0.0175	0.0175	0.0175		0.018	0.018
TN (N) mg/l	n/a		1.6	0.5	0.25	1.4			

Ambient Monitoring Point from WWDL (or as agreeded with EPA)	Irish Grid Reference	EPA Feature Coding tool Code	Bathing Water	Drinking Water	FWPM	Shellfish	Current WFD Status
Upstream Monitoring Point	E209890 N80993	TW38003144BR2001	No designated	No	No	No	Moderate
Downstream Monitoring Point	E210974 N77117	TW38003144BR2002	Yes	No	No	No	Moderate

Significace of Results	
Did the ambient monitoring results meet the EQS Required?	Yes
Is there an obervable negative impact on water quality?	Unknown - "observable" TBC
List the parameters causing the impact?	N/A
A deterioration has been identified, but it is not known if it is caused by the TP	N/A
Do the discharges from the WWTP have an observable negative impact on the WFD?	Unknown - "observable" TBC
Any other known impacts	Catchment Pressures