Annual Environmental Report

2021

Clogherhead

D0265-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

This Annual Environmental Report has been prepared for D0265-01, Clogherhead, in Louth 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.

There were no capital works, significant changes or operational improvements undertaken in 2021.

1.2 TREATMENT SUMMARY

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

- Clogherhead WWTP with a Plant Capacity PE of 2600, 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
TPEFF2100D0265SW001	Clogherhead WWTP	Treated	Non-Compliant	Total Oxidised Nitrogen (as N) 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 CLOGHERHEAD WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - CLOGHERHEAD 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
BOD, 5 days with Inhibition (Carbonaceous) mg/l	6	115	63
COD-Cr mg/l	6	368	221.64
Suspended Solids mg/l	6	217	103.17
Hydraulic Capacity	N/A	863	576

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 - TPEFF2100D0265SW001

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	6	N/A	N/A	58	Pass
Suspended Solids mg/l	35	88	N/A	6	N/A	N/A	17	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	25	50	N/A	6	N/A	N/A	7.19	Pass
Total Oxidised Nitrogen (as N) mg/l	15	18	N/A	6	3	2	16	Fail
Ammonia-Total (as N) mg/l	10	12	N/A	6	N/A	N/A	1.49	Pass
pH pH units	6.00	9.00	N/A	6	N/A	N/A	7.39	Pass
Enterococci (Intestinal) cfu/100ml	N/A	N/A	N/A	2	N/A	N/A	2616	
E. Coli cfu/100ml	N/A	N/A	N/A	2	N/A	N/A	860	
Faecal coliforms cfu/100ml	N/A	N/A	N/A	2	N/A	N/A	1365	

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):

WWTP not designed for N removal.

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 TPEFF2100D0265SW001

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	316506.88, 283516.06	CW21006024BE2002	Yes	No	No	Yes	Unassigned
Downstream	314755, 287792	CW21006024BE2003	Yes	No	No	Yes	Unassigned

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: Total Oxidised Nitrogen (as N) mg/l.

The ambient monitoring results meet the required EQS at the upstream and the downstream monitoring locations. 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 impact on the bathing water quality.

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

It is unknown if the discharge from the wastewater treatment plant is having an observable negative impact on the Water Framework Directive status. The WFD status is Unassigned upstream and downstream of the wastewater treatment plant.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - CLOGHERHEAD WWTP

2.1.4.1 Treatment Efficiency Report - Clogherhead 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	13575	1550	89
SS	22226	3734	83
COD	47748	12543	74

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

2.1.4.2 Treatment Capacity Report Summary - Clogherhead 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.

Clogherhead WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	1080
DWF to the Treatment Plant (m^3/day)	360
Current Hydraulic Loading - annual max (m^3/day)	862.82
Average Hydraulic loading to the Treatment Plant (m^3/day)	575.84
Organic Capacity (PE) - As Constructed	2600
Organic Capacity (PE) - Collected Load (peak week)[Note1]	3109
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	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.

2.1.5 SLUDGE / OTHER INPUTS - CLOGHERHEAD 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 2021.			

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	WWTP not designed for N removal	1	Yes	No
Trigger Level Reached	Blocked Sewer	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	2
Number of Incidents reported to the EPA via EDEN in 2021	2
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	Total volume discharged in 2021 (m^3)	Monitoring Status
SW002	316452.505503886, 283596.708356837	Yes	Low	Meeting	Unknown	Not Monitored
SW003	316923.044531707, 283610.597631031	Yes	Low	Meeting	Unknown	Not Monitored

SWO Summary	
How much sewage was discharged via monitored SWOs in the agglomeration in the year (m^3)?	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 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
There are no Specified Improvement Programmes for this Agglomeration.							

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
Priority Substances Assessment	Yes	2016	No

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2016.

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	To include 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	Ambient Monitoring Location Changes
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: 20/02/2022

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

Clogherhead Ambient Monitoring Data 2021

Ambient Monitoring Report Summary Table

			Receiving Waters Designation (Yes/No)				
Ambient Monitoring Point from WWDL (or as agreed with EPA)	**Irish National Grid Reference (Easting, Northing)**	**EPA Feature Coding Tool code**	**Bathing Water**	**Drinking Water**	**FWPM**	**Shellfish**	**WFD Status 2013-2018**
Upstream Monitoring Point	316506.88, 283516.06	CW21006024BE2002	Yes	No	No	Yes	Unassigned
Downstream Monitoring Point	314755, 287792	CW21006024BE2003	Yes	No	No	Yes	Unassigned

Note: The Clogherhead upstream and downstream monitoring points are at the Port Beach and Close Lifeboat Station (RNLI) respectively, a significant distance from the Clogherhead discharge point.

2021 Ambient Monitoring Summary

Upstream		pH	Ammonia N	Total Suspended Solids	Temperature	Biological Oxygen Demand	Enterococci	E Coli	Faecal Coliforms	Salinity
Station Reference	Sample Date	pH units	mg/l	mg/l	Degrees C	mg/l	cfu/100mls	cfu/100mls	cfu/100mls	ppt
CW21006024BE2002	3-Feb-2021	7.92	0.31	6	7.4	0.6	40	60	70	6.7
CW21006024BE2002	2-June-2021	8.35	0.45	62	14.2	1.4	70	10	10	31.7
CW21006024BE2002	8-July-2021	7.62	0.78	253	14.5	0.7	< 10	30	30	31.5
CW21006024BE2002	6-Oct-2021	7.74	0.47	301	7.1	1.8	150	30	220	20.6
	Mean	**7.9075**	**0.5025**	**155.5**	**10.8**	**1.125**	**66.8**	**32.5**	**82.5**	**22.625**
	95%ile	**8.2855**	**0.7335**	**293.8**	**14.455**	**1.74**	**138.0**	**55.5**	**197.5**	**31.67**

Downstream		pH	Ammonia N	Total Suspended Solids	Temperature	Biological Oxygen Demand	Enterococci	E Coli	Faecal Coliforms	Salinity
Station Reference	Sample Date	pH units	mg/l	mg/l	Degrees C	mg/l	cfu/100mls	cfu/100mls	cfu/100mls	ppt
CW21006024BE2003	3-Feb-2021	7.82	0.4	19	7.2	0.8	1450	50	190	5.7
CW21006024BE2003	2-June-2021	8.3	0.43	200	14	1.4	< 10	30	10	31.6
CW21006024BE2003	8-July-2021	7.59	0.67	224	15	0.7	10	40	20	33.9
CW21006024BE2003	6-Oct-2021	7.76	0.48	319	6.9	1.5	280	80	190	22.6
	Mean	**7.8675**	**0.495**	**190.5**	**10.775**	**1.1**	**436.8**	**50**	**102.5**	**23.45**
	95%ile	**8.228**	**0.6415**	**304.75**	**14.85**	**1.485**	**1274.5**	**75.5**	**190**	**33.555**

Clogherhead Bathing Waters (EPA Beaches.ie)

The Escherichia coli and Intestinal enterococci results for the 2021 sample period are tabled below.

Date	Escherichia coli	Intestinal enterococci	Sample Quality Status
06/09/2021	<10	<1	Excellent
31/08/2021	31	17	Excellent
30/08/2021	<10	10	Excellent
24/08/2021	216	3	Excellent
23/08/2021	538	34	Sufficient
17/08/2021	10	1	Excellent
16/08/2021	31	<1	Excellent
10/08/2021	<10	9	Excellent
09/08/2021	31	13	Excellent
03/08/2021	<10	1	Excellent
26/07/2021	<10	1	Excellent
19/07/2021	<10	26	Excellent
12/07/2021	<10	5	Excellent
05/07/2021	20	2	Excellent
28/06/2021	<10	<1	Excellent
21/06/2021	<10	<1	Excellent
14/06/2021	<10	<1	Excellent
08/06/2021	20	10	Excellent
01/06/2021	<10	<1	Excellent
25/05/2021	<10	<1	Excellent