Annual Environmental Report

2019

Clogherhead

D0265-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 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 this year.

1.2 TREATMENT SUMMARY

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

- Clogherhead WWTP with a Plant Capacity PE of 2000, 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 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 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 BOD) mg/l	6	300	130.54
COD-Cr mg/l	6	948	371.14
Suspended Solids mg/l	6	635	266.24
Hydraulic Capacity	N/A	1685	1274.99

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 greater 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 - 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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	7	1	N/A	59.09	Pass
Suspended Solids mg/l	35	87.5	N/A	6	1	N/A	24.52	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	7	N/A	N/A	8.83	Pass
Total Oxidised Nitrogen (as N) mg/l	15	18	N/A	6	2	N/A	11.37	Fail
Ammonia-Total (as N) mg/l	10	12	N/A	6	N/A	N/A	2.38	Pass
pH pH units	6-9	6-9	N/A	6	N/A	N/A	7.56	Pass
Faecal coliforms cfu/100ml	N/A	N/A	N/A	1	N/A	N/A	100000	
Faecal coliforms no./100mls	N/A	N/A	N/A	1	N/A	N/A	2500	
E. Coli MPN/100ml	N/A	N/A	N/A	1	N/A	N/A	3000	

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):

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 Status
Upstream	314755, 287792	CW21006024BE2003	Yes	No	No	Yes	Good
Downstream	316506, 283516	CW21006024BE2002	Yes	No	No	Yes	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 not 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 - 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)
COD	157020	25409	84
cBOD	55230	3797	93
TP	N/A	N/A	N/A
SS	112638	10376	91
TN	N/A	N/A	N/A

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)	1685

Clogherhead WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	1274.99
Organic Capacity (PE) - As Constructed	2000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	3062
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 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)
Breach of ELV	WWTP not designed for N removal	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	1
Number of Incidents reported to the EPA via EDEN in 2019	1
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
SW003	316904, 283625	Yes	Low	Meeting	Unknown	Unknown	Monitored
SW002	316429, 283676	Yes	Low	Not Meeting	Unknown	Unknown	Monitored
SW004	316923, 283602	Yes	Low	Not yet Assessed	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?	No

SWO Summary	
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
There are no Improvement Programmes 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.

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of 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
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	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: 06/03/2020

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

Appendix
Appendix 7.1 - Ambient monitoring summary

Clogherhead Ambient Monitoring Data 2019

Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code	Receiving Waters Designation (Yes/No)				
			Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status 2013-2018
Upstream Monitoring Point	314755.82, 287792	CW21006024BE2003	Yes	No	No	Yes	Good
Downstream Monitoring Point	316506.88, 283516.06	CW21006024BE2002	Yes	No	No	Yes	Good

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.

2019 Ambient Monitoring Summary

Upstream

Date	Ammonia (mg/l)	BOD (mg/l)	TSS (mg/l)	Enterococci (cfu/100ml)	E.Coli (cfu/100 ml)	Faecal Coliforms (cfu/100ml)	pH (mg/l)
18.04.2019	0.59	8	987	20	6	1	7.79
06.06.2019	0.55	<2	56				7.78
05.09.2019	0.57	1.6	103	<10	20	20	7.72
07.11.2019	0.31	0.6	216				7.90
Mean	0.505	2.8	340.5	12.5	13	10.5	7.79
95%ile	0.587	7.04	871.35	19.5	19.3	19.05	7.88

Downstream

Date	Ammonia (mg/l)	BOD (mg/l)	TSS (mg/l)	Enterococci (cfu/100ml)	E.Coli (cfu/100ml)	Faecal Coliforms (cfu/100ml)	pH (mg/l)
18.04.2019	0.57	6	67	1400	120	50	7.87
06.06.2019	0.41	<2	68				7.81
05.09.2019	0.58	1.5	84	10	30	30	7.75
07.11.2019	0.28	0.7	206				7.92
Mean	0.46	2.3	106.25	705	75	40	7.84
95%ile	0.579	5.325	187.7	1330.5	115.5	49	7.91

Note: Where the concentration in the result is less than the limit of detection (LOD), a value of 50% of the LOD was used in calculating the mean and 95%ile concentrations.

Clogherhead Bathing Waters (EPA Beaches.ie)

Clogherhead is classified as achieving Excellent Water Quality based on the assessment of bacteriological results for the period 2016 to 2019. Clogherhead has achieved an Excellent Water Quality rating for the five consecutive years 2015 to 2019.

The 2019 Escherichia coli and Intestinal enterococci results for the 2019 sample period are tabled below.

Date	Escherichia coli	Intestinal enterococci	Sample Quality Status
09/09/2019	85	8	Excellent
02/09/2019	31	7	Excellent
27/08/2019	52	5	Excellent
26/08/2019	<10	1	Excellent
19/08/2019	<10	2	Excellent
13/08/2019	30	1	Excellent
12/08/2019	<10	1	Excellent
06/08/2019	109	47	Excellent
30/07/2019	<10	<1	Excellent
29/07/2019	<10	4	Excellent
23/07/2019	<10	9	Excellent
22/07/2019	96	18	Excellent
15/07/2019	<10	<1	Excellent
09/07/2019	<10	<1	Excellent
01/07/2019	<10	2	Excellent
25/06/2019	<10	<1	Excellent
17/06/2019	31	5	Excellent
10/06/2019	<10	<1	Excellent
05/06/2019	<10	3	Excellent
22/05/2019	20	<1	Excellent