

Annual Environmental Report

2018



Clogherhead

D0265-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 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 are included as an appendix to the AER as follows:

1.1 Licence specific reporting included in AER

Assessment / Report	Included in AER
There is no Licence Specific Reports included in the AER.	

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant Clogherhead WWTP with a Plant Capacity PE of 2000. The treatment process includes the following:

1.2.1 Clogherhead WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Screen
Primary Treatment	Yes	Biological Assimilation and Aeration
Secondary Treatment	Yes	Settlement
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 Clogherhead WWTP

Compliance Status	
Were all parameters compliant for Clogherhead WWTP treatment plant	No
Where non compliant 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
Clogherhead WWTP	Liquid Sludge	4347.25	Weight (Tonnes)	0.97	Drogheda WWTP
Clogherhead WWTP	Liquid Sludge	491.6	Weight (Tonnes)	0.81	Dundalk WWTP

Annual Statement of Measures

Capital Programme works at Clogherhead WWTP is ongoing. Detailed design commenced in Q1 2019 for upgrade works.

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 - Clogherhead WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
Total Phosphorus (as P) mg/l	4	9.36	2.77
Total Nitrogen mg/l	3	75.1	33.31
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	404	63.19
COD-Cr mg/l	6	446	113.72
Suspended Solids mg/l	6	162	64.35
Hydraulic Capacity		1727.97	494.07

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 less 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 - Clogherhead 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 exceedances	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Ammonia-Total (as N) mg/l	10	12	0	6	1	1	5.37	Fail
pH pH units	6 to 9	0	0	6	0	0	7.45	Pass
COD-Cr mg/l	125	250	0	6	0	0	32.58	Pass
Enterococci (Intestinal) cfu/100ml	0	0	0	3	0	0	445.18	N/A
E. Coli cfu/100ml	0	0	0	3	0	0	19436.46	N/A
Faecal coliforms cfu/100ml	0	0	0	3	0	0	19334.36	N/A
Suspended Solids mg/l	35	87.5	0	6	0	0	12.23	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	6	1	0	9.2	Pass
Total Oxidised Nitrogen (as N) mg/l	15	18	0	6	2	2	14.32	Fail

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. Two samples were non-compliant with the ELV in relation to Total Oxidized Nitrogen, both of which exceeded the ELV with the Condition 2 interpretation included. One sample was non-compliant with Ammonia N Condition 2 ELV. The impact on receiving waters is assessed further in Section 2.3.

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 - Clogherhead 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	318715, 311582	TPEFF2100D0265SW001	No	No	No	No	Unassigned
Downstream	320601, 312729	TPEFF2100D0265SW001	Yes	No	No	No	Unassigned

Note: The Clogherhead upstream and downstream monitoring points are at the Carlingford River and Carlingford Lough respectively, a significant distance from the Clogherhead discharge point.

2.3.2 Ambient Monitoring Parameter Summary - Clogherhead 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 was non-compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.

It is not considered that the wastewater treatment plant is having observable negative impact on the water quality of the Louth Coast. Due to the distance to the downstream monitoring location it is not considered that the WWTP is having an observable negative impact on the water quality at this monitoring location.

The discharge from the WWTP is not considered to be having an observable negative impact on the Water Framework Directive status. The status of the Louth Coast to which the effluent discharges is "*Unassigned*". Coastal water quality along the Louth Coast is "Unpolluted".

The Neagh Bann IRBD Transitional and Coastal Waters Action Programme lists the Louth Coast as a waterbody at risk from land-based point source pressures – Clogherhead Sewerage Scheme treatment works is not specifically referenced.

The Clogherhead Bathing Waters are located approx. 330 m from the primary discharge. Based on the 2018 microbiological results at this bathing area (EPA beaches.ie), the WWTP effluent discharge is not impacting upon this bathing area. The 2018 classification was "*Excellent*".

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 - Clogherhead WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
SS	8464.85	1608.03	81
COD	14958.44	4285.95	71.35
cBOD	8311.49	1210.21	85.44

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.

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)	1727.97

Clogherhead WWTP	
Average Hydraulic loading to the Treatment Plant (m ³ /day)	494.07
Organic Capacity (PE) - As Constructed	2000
Organic Capacity (PE) - Collected Load (peak week)	3028
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

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
3	Blocked Sewer	0	3

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 not designed for N removal	1	No	Yes
Other	Other	1	No	Yes
Non-compliance	WWTP not designed for N removal	1	No	Yes

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	3
Number of Incidents reported to the EPA via EDEN in 2018	3
Explanation of any discrepancies between the two numbers above	N/A

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)?	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.							

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 (m ³)	Monitoring Status
SW002	316429, 283676	Yes	Low	Meeting			Not Monitored
SW003	316904, 283625	Yes	Low	Meeting			Not Monitored
SW004	316923, 283602	Yes	Low	Meeting			Not Monitored
SW005	N/A	Yes	Low	Meeting			Not Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m ³)?	Not Monitored
Is each SWO identified as not 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 / 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)	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	Improvement Source	Expected Completion Date	Comments
D0265-IP:43	Capital Programme works at Clogherhead WWTP	Other	TBC	Detailed design commenced in Q1 2019 for upgrade works to increase capacity to approx. 4000 PE.

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
Priority Substances Assessment	Yes	2016	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	Additional SWO
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	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: 19/03/2019

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

Appendix

Appendix 7.1 - Ambient Monitoring Summary

Clogherhead Ambient Monitoring Data 2018

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
Upstream Monitoring Point	318715, 311582	RS06C620800				
Downstream Monitoring Point	320601, 312729	CW21006025CA1001	Yes	No	No	Yes

Note: The Clogherhead upstream and downstream monitoring points are at the Carlingford River and Carlingford Lough respectively, a significant distance from the Clogherhead discharge point.

Significance of Results

-) The WWTP was non-compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.
-) It is not considered that the wastewater treatment plant is having observable negative impact on the water quality of the Louth Coast. Due to the distance to the downstream monitoring location it is not considered that the WWTP is having an observable negative impact on the water quality at this monitoring location.
-) The discharge from the WWTP is not considered to be having an observable negative impact on the Water Framework Directive status. The status of the Louth Coast to which the effluent discharges is "*Unassigned*". Coastal water quality along the Louth Coast is "*Unpolluted*".
-) The Neagh Bann IRBD Transitional and Coastal Waters Action Programme lists the Louth Coast as a waterbody at risk from land-based point source pressures – Clogherhead Sewerage Scheme treatment works is not specifically referenced.
-) The Clogherhead Bathing Waters are located approx. 330 m from the primary discharge. Based on the 2018 microbiological results at this bathing area (EPA beaches.ie), the WWTP effluent discharge is not impacting upon this bathing area. The 2018 classification was "Excellent".

2018 Ambient Monitoring Summary

Upstream

Date	Ammonia (mg/l) *	Ortho P (mg/l) *	BOD (mg/l) *	TSS (mg/l)	Enterococ ci (cfu/100m l)	E.Coli (cfu/100m l)	Faecal Coliforms (cfu/100ml)	pH (mg/l)
6-Feb-2018	3.720	-	19.0	28.0	9200.0	42000.00	42000.00	7.60
29-June-2018	0.205	-	3.0	10.0				7.70
17-Oct-2018	0.030	-	0.4	17.0				8.04
13-Nov-2018	0.030	-	0.9	3.0	200.0	7.00	9.00	7.72
Mean	0.996		5.8	14.5	4700.0	21003.50	21004.50	7.77
95%ile	3.193		16.6	26.4	8750.0	39900.35	39900.45	7.99

Downstream

Date	Ammonia (mg/l) *	Ortho P (mg/l) *	BOD (mg/l) *	TSS (mg/l)	Enterococ ci (cfu/100m l)	E.Coli (cfu/100m l)	Faecal Coliforms (cfu/100ml)	pH (mg/l)
6-Feb-2018	< 0.06	-	5.0	44.0	3200.0	4000.00	4000.00	7.90
29-June-2018	< 0.41	-	3.0	33.0				7.90
17-Oct-2018	0.390	-	1.5	54.0				7.88
13-Nov-2018	0.330	-	0.6	82.0	10.0	0.00	1.00	7.79
Mean	0.239		2.5	53.3	1605.0	2000.00	2000.50	7.87
95%ile	0.381		4.7	77.8	3040.5	3800.00	3800.05	7.90

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 2015 to 2018. Clogherhead was also classified as achieving excellent water quality during the previous assessment periods 2014 to 2017, 2013 to 2016, 2012 to 2015 and 2011 to 2014.

The 2018 Escherichia coli and Intestinal enterococci results for the 2018 sample period are tabled below.

Date	Escherichia coli	Intestinal enterococci	Sample Quality Status
10/09/2018	97	24	Excellent
03/09/2018	10	1	Excellent
28/08/2018	<10	6	Excellent
27/08/2018	183	72	Excellent
21/08/2018	<10	1	Excellent
20/08/2018	10	5	Excellent
14/08/2018	<10	6	Excellent
13/08/2018	<10	5	Excellent
07/08/2018	<10	<1	Excellent
01/08/2018	<10	3	Excellent
30/07/2018	86	35	Excellent
23/07/2018	<10	1	Excellent
16/07/2018	<10	<1	Excellent
09/07/2018	<10	<1	Excellent
02/07/2018	<10	<1	Excellent
25/06/2018	<10	5	Excellent
18/06/2018	<10	4	Excellent
11/06/2018	<10	<1	Excellent
05/06/2018	<10	<1	Excellent
22/05/2018	<10	<1	Excellent