Annual Environmental Report

2018

Carlingford

D0268-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0268-01, Carlingford, 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 Carlingford WWTP with a Plant Capacity PE of 2100. The treatment process includes the following:

1.2.1 Carlingford WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Screening/grit removal
Primary Treatment	No	
Secondary Treatment	Yes	Conventional activated sludge.
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 Carlingford WWTP

Compliance Status	
Were all parameters compliant for Carlingford 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
Carlingford WWTP	Liquid Sludge	2520.9	Weight (Tonnes)	1.79	Dundalk WWTP

Annual Statement of Measures

Upgraded aeration to be installed by end of Q3 2019.

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 - Carlingford WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	15	432	193.97
COD-Cr mg/l	15	1175	505.44
Total Phosphorus (as P) mg/l	15	7.01	4.2
Total Nitrogen mg/l	6	29.2	20.87
Suspended Solids mg/l	15	580	239.16
Hydraulic Capacity		1412	605.39

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 - Carlingford 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)
Faecal coliforms cfu/100ml	0	0	0	12	0	0	432833.99	N/A
pH pH units	0	0	0	12	0	0	7.67	N/A
Dissolved Oxygen mg/l	0	0	0	1	0	0	3.5	N/A
Ammonia-Total (as N) mg/l	0	0	0	4	0	0	18.43	N/A
E. Coli cfu/100ml	0	0	0	12	0	0	389628.47	N/A
Enterococci (Intestinal) cfu/100ml	0	0	0	12	0	0	20616.83	N/A
Suspended Solids mg/l	35	87.5	0	12	4	1	34.42	Fail
Total Phosphorus (as P) mg/l	2	2.4	0	12	4	4	1.77	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	12	5	3	31.97	Fail

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	0	11	2	1	117.85	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):

Plant or equipment breakdown at WWTP.

Significance of Results:

The WWTP was non-compliant with the ELVs set in the Wastewater Discharge Licence. Five samples were non compliant with the ELV in relation to BOD (mg/l), three of which were above the ELV with the Condition 2 interpretation included. Two samples were non compliant with the ELV in relation to COD(mg/l), one of which was above the ELV with the Condition 2 interpretation included. Four samples were non compliant with the ELV in relation to SS (mg/l), one of which was above the ELV with the Condition 2 interpretation included. Four samples were non compliant with the ELV in relation to TP (mg/l), all of which were above the ELV with the Condition 2 interpretation included. 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 - Carlingford 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
Downstream	320598, 312737	TPEFF2100D0268SW001	No	No	No	Yes	Unassigned

2.3.2 Ambient Monitoring Parameter Summary - Carlingford 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 discharge was not compliant with the ELV's set in the wastewater discharge licence.

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

It is noted that consistent achievement with the ELVs would benefit the quality of the receiving water.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

The Carlingford agglomeration discharges directly into the Carlingford Lough shellfish area. The available monitoring data at sampling locations M5 and O5 in the outer Carlingford Lough Shellfish Designated Waters are in compliance with both the Shellfish Water Regulations and Surface Water Regulations required standards. The available monitoring data would indicate that it is unlikely that the Carlingford discharge is impacting on the water quality required for shellfish waters. This conclusion is supported by the findings of the Stage 1 Desktop Assessment and Stage 2 Scoping Assessment Reports carried out to assess the impact of this agglomeration on the receiving Designated Shellfish water.

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 - Carlingford WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
COD	119857.21	30413.31	74.63
cBOD	45997.01	8197.06	82.18
SS	56714.26	8824.61	84.44
TP	994.81	452.6	54.5

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.

Carlingford WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	816
DWF to the Treatment Plant (m^3/day)	270

Carlingford WWTP	
Current Hydraulic Loading - annual max (m^3/day)	1412
Average Hydraulic loading to the Treatment Plant (m^3/day)	605.39
Organic Capacity (PE) - As Constructed	2100
Organic Capacity (PE) - Collected Load (peak week)	2274
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
1	Blocked Sewer	0	1

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)
Other	Plant or equipment breakdown at WWTP	1	No	Yes
Non-compliance	Plant or equipment breakdown at WWTP	6	Yes	No
Other	Other	1	No	Yes

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	8
Number of Incidents reported to the EPA via EDEN in 2018	8
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	319067, 311611	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?	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 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
Improvements to ensure compliance with the ELVs as specified in Schedule A.	C	31/12/2017	Yes	At Planning Stage		
Provide sufficient capacity in the wastewater works to satisfy the requirements of this licence	C	31/12/2017	Yes	Not Started		The improvement programme will be reviewed by IW to assess the works required to comply with the licence condition on a prioritised basis.

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
There are no Improvements Programme 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.

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?	No
List reason e.g. additional SWO identified	N/A
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?	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	NA

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

Carlingford Ambient Monitoring Data

Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool Code	Bathing Water	Drinking Water	FWPM	Shellfish	Current WFD Status
Upstream Monitoring Point	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Downstream Monitoring Point	320598E 312737N	CW21006025CA1001	N	N	N	Y	Unassigned

The downstream monitoring results are from the SFPA Microbiological Results (2016) and LCC and are included below**.**

Significance of Results

- The WWTP was not compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.
- The discharge from the wastewater treatment plant does not appear to have an observable negative impact on the water quality.
- The Carlingford agglomeration discharges directly into the Carlingford Lough shellfish area. The available monitoring data at sampling locations M5 and O5 in the outer Carlingford Lough Shellfish Designated Waters are in compliance with both the Shellfish Water Regulations and Surface Water Regulations required standards. The available monitoring data would indicate that it is unlikely that the Carlingford discharge is impacting on the water quality required for shellfish waters. This conclusion is supported by the findings of the Stage 1 Desktop Assessment and Stage 2 Scoping Assessment Reports carried out to assess the impact of this agglomeration on the receiving Designated Shellfish water.

2018 Ambient Monitoring Summary

Carlingford Ambient Monitoring		BOD (mg/l)	pH	TSS (mg/l)	Total Phosphorus	E.Coli	Enterococci	Temperature	Faecal Coliform
29-June-2018	D/S	2	8	103	< 0.12	<100	<100	23.7	<100
17-Oct-2018	D/S	1.01	7.88	98	0.05	1	7	15.2	9

SFPA - 2016 Monitoring Data at Carlingford Lough Outer M3 and O5 Greenore Sampling Locations

Area	Sample Position	Sampledat	Sample Type	Lab	ECShell
CARLINGFORD	GREENORE O5	19/01/2016	POY	EURO	0.4
CARLINGFORD	GREENORE O5	22/02/2016	POY	EURO	0.18
CARLINGFORD	GREENORE O5	14/03/2016	POY	EURO	0.2
CARLINGFORD	GREENORE O5	11/04/2016	POY	EURO	0.2
CARLINGFORD	GREENORE O5	16/05/2016	POY	EURO	0.18
CARLINGFORD	GREENORE O5	15/06/2016	POY	EURO	0.18
CARLINGFORD	GREENORE O5	18/07/2016	POY	EURO	0.68
CARLINGFORD	GREENORE O5	09/08/2016	POY	EURO	0.68
CARLINGFORD	GREENORE O5	05/09/2016	POY	EURO	0.2
CARLINGFORD	GREENORE O5	11/10/2016	POY	EURO	0.18
CARLINGFORD	GREENORE O5	08/11/2016	POY	EURO	0.45
CARLINGFORD	GREENORE O5	13/12/2016	POY	EURO	0.78
CARLINGFORD	M5 Greenore	19/01/2016	MUS	EURO	1.3
CARLINGFORD	M5 Greenore	22/02/2016	MUS	EURO	0.4
CARLINGFORD	M5 Greenore	14/03/2016	MUS	EURO	0.2
CARLINGFORD	M5 Greenore	11/04/2016	MUS	EURO	0.18
CARLINGFORD	M5 Greenore	16/05/2016	MUS	EURO	0.18
CARLINGFORD	M5 Greenore	15/06/2016	MUS	EURO	0.18
CARLINGFORD	M5 Greenore	18/07/2016	MUS	EURO	1.1
CARLINGFORD	M5 Greenore	09/08/2016	MUS	EURO	0.2
CARLINGFORD	M5 Greenore	05/09/2016	MUS	EURO	0.18
CARLINGFORD	M5 Greenore	11/10/2016	MUS	EURO	0.45
CARLINGFORD	M5 Greenore	08/11/2016	MUS	EURO	0.18
CARLINGFORD	M5 Greenore	13/12/2016	MUS	EURO	0.18