Annual Environmental Report

2018

Camolin

D0405-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0405-01, Camolin, in Wexford 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 TREATMENT SUMMARY

The agglomeration is served by two primary settlement tanks:

- Camolin North with a Plant Capacity PE of 100
- Camolin South with a Plant Capacity PE of 50 (this is a secondary discharge)

1.2 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
TPEFF3300D0405SW002	Camolin South Secondary Discharge	Untreated (Primary Settlement Tank)	Non-compliant	SS BOD
TPEFF3300D0405SW001	Camolin WWTP (North)	Untreated (Primary Settlement Tank)	Non-compliant	SS BOD

1.3 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
No licence specific reports are included in the AER	

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 CAMOLIN WWTP (NORTH)

2.1.1 INFLUENT MONITORING SUMMARY - CAMOLIN WWTP (NORTH)

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	6	1250	611
COD	6	3107	1340
Suspended Solids	3	419	266
Hydraulic Capacity	N/A	348.3	87.05

No flow measurement in place flow based on organic laoding provided of 258 p.e DWF = 58.05 , max estimated as 1.5 DWF and Max as 6 DWF

Significance of Results:

The annual mean hydraulic loading is less 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 - TPEFF3300D0405SW001

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)
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	N/A	N/A	20%	6	4	N/A	395	Fail
Suspended Solids mg/l	N/A	N/A	50%	6	3	N/A	140	Fail

ELV Commencement date: 31/12/2019

Cause of Exceedance(s):

Insufficient treatment

Significance of Results:

The discharge is non-compliant with the ELV's set in the Wastewater Discharge Licence.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE

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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream - RS12B010500	307430, 153172	TPEFF3300D0405SW001	No	No	No	No	Good
Downstream - RS12B010600	306377, 152233	TPEFF3300D0405SW001	No	Yes	No	No	Good

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1**

Significance of Results:

The discharge was not compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results did not meet the required EQS.

The parameters which exceeded the EQS and may be causing an effect are: Ammonia and BOD.

A deterioration in water quality has been identified, however, upstream water quality is degraded in quality indicating upstream catchment pressures.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY

2.1.4.1 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:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
BOD	13895.25	9110.95	34.43	
COD	30672.11	16196.3	47.2	
SS	6017.46	3077.81	48.85	

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

2.1.4.2 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.

Camolin WWTP (North)	
Peak Hydraulic Capacity (m3/day) - As Constructed	102
DWF to the Treatment Plant (m3/day)	17
Current Hydraulic Loading - annual max (m3/day)	348.3
Average Hydraulic loading to the Treatment Plant (m3/day)	87.05
Organic Capacity (PE) - As Constructed	100
Organic Capacity (PE) - Collected Load (peak week)	258
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

2.1.5 SLUDGE / OTHER INPUTS

'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.							

2.1.6 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
Camolin North & Camolin South	Liquid Sludge	393.32	Volume (m3)	2.02	Courtown WWTP Sludge Facility
Camolin North & Camolin South	Liquid Sludge	141.25	Volume (m3)	1.19	Wexford WWTP Sludge Facility

Note: Sludge data provided is annual totals for both Camlin North (SW1) and Camolin South SW2 , it is not possible to separate as sites are desludged at same time and most loads are mixed

2.2 CAMOLIN SOUTH SECONDARY DISCHARGE

2.2.1 INFLUENT MONITORING SUMMARY - CAMOLIN SOUTH SECONDARY DISCHARGE

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
Suspended Solids mg/l	3	1086	759
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	590	241
COD-Cr mg/l	6	1680	626
Hydraulic Capacity	N/A	263.25	65.81

Flow estimated bases on 225l/head/day.

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’.

2.2.2 EFFLUENT MONITORING SUMMARY - TPEFF3300D0405SW002

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)
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	N/A	N/A	20%	6	3	N/A	156	
Suspended Solids mg/l	N/A	N/A	50%	6	3	N/A	50.7	

Notes:
1– This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 - For parameters where a mean ELV applies

Cause of Exceedance(s):

Insufficient infrastructure

Significance of Results:

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

2.2.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE

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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream - RS12C080300	306226, 152641	TPEFF3300D0405SW002	No	No	No	No	Good
Downstream - RS12C080330	306161, 152414	TPEFF3300D0405SW002	No	No	No	No	Good

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1**

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results did not meet the required EQS.

The parameters which exceeded the EQS and may be causing an effect are: BOD

A deterioration in water quality has been identified, however, it is not known if it is caused by the discharge.

2.2.4 OPERATIONAL PERFORMANCE SUMMARY

2.2.4.1 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:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
TP				
SS				
COD				

cBOD				
TN				

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

2.2.4.2 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.

Camolin Secondary Discharge	
Peak Hydraulic Capacity (m3/day) - As Constructed	51
DWF to the Treatment Plant (m3/day)	9
Current Hydraulic Loading - annual max (m3/day)	263.25
Average Hydraulic loading to the Treatment Plant (m3/day)	65.81
Organic Capacity (PE) - As Constructed	50
Organic Capacity (PE) - Collected Load (peak week)	195
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	yes

2.2.5 SLUDGE / OTHER INPUTS

'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.							

2.2.6 SLUDGE REMOVAL

See Camolin North

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
2	Blocked Sewer	0	2

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)
Non-compliance	WWTP upgrade required to meet ELV	3	Yes	No
Non-compliance	WWTP upgrade required to meet ELV	4	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2018	2
Number of Incidents reported to the EPA via EDEN in 2018	2
Explanation of any discrepancies between the two numbers above	

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 2018 (No. of events)	Total volume discharged in 2018 (m3)	Monitoring Status
NO STORM WATER OVERFLOWS							

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	N/A
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?	N/A
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	N/A

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
D0405-SIP:01	Construct a new WWTP to comply with ELVs specified in Schedule A	C	31/12/2019	No	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	
D0405-SIP:02	SW002 Secondary Discharge Point to be Discontinued	C	31/12/2019	No	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	

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	2014	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	
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	
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	No

I certify that the information given in this Annual Environmental Report is truthful, accurate and complete:

Signed: Date: 22/05/2019

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

SW1 US RS12B010500

Sation	Camolin SW1 Upstream		Station Ref	RS12B010500		Ammonia N	BOD, 5 days with Inhibition (Carbonaceous)	COD Chemical Oxygen Demand	Suspended Solids	Ortho-Phosphate P	pH	Total Kejdahl Nitrogen	Total Nitrogen N	Total Phosphate P	Total Oxidised Nitrogen N	Temperature	Dissolved Oxygen	Visual Inspection	Dissolved Oxygen % Saturation
Entity	Entity Referenc	Station Easting	Station Northin	Sample Date	Sample Metho	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l	mg/l	mg/l	Degrees C	mg/l	Descriptive	% Sat.
Bann	12B01	307430	153172	28-Mar-2018	Grab	0.25	2	5	5	0.06	7.4	1	6.4	0.1	5.99	8.7	11.76	Clear, no floc/sed, N	91.2
Bann	12B01	307430	153172	24-May-2018	Grab	0.02	1	5	5	0.1	7.8	1	5.9	0.13	5.78	13.1	11.11	Clear, no floc/sed, N	112.7
Bann	12B01	307430	153172	17-July-2018	Grab	0.06	1			0.02	7.3						9.92	Clear	103.4
				Mean		0.11	1.33	5.00	5.00	0.06	7.50	1.00	6.15	0.12	5.89	10.90	10.93		102.43
				95%ile		0.23	1.90	5.00	5.00	0.10	7.76	1.00	6.38	0.13	5.98	12.88	11.70		111.77
Sation	Camolin SW1 Downstream		Station Ref	RS12B010600															
Bann	12B01	306377	152233	28-Mar-2018	Grab	0.06	2	5	5	0.02	7.4	1	6.5	0.1	6.1	8.8	11.69	Clear, no floc/sed, N	89.4
Bann	12B01	306377	152233	24-May-2018	Grab	0.02	2	5	5	0.02	7.8	1	5.9	0.1	5.8	13.3	11.27	Clear, no floc/sed, N	114.6
Bann	12B01	306377	152233	17-July-2018	Grab	0.12	4			0.02	6.7						9.54	Clear, no suspended solids	96.6
				Mean		0.07	2.67	5.00	5.00	0.02	7.30	1.00	6.20	0.10	5.95	11.05	10.83		100.20
				95%ile		0.11	3.80	5.00	5.00	0.02	7.76	1.00	6.47	0.10	6.09	13.08	11.65		112.80

Sation	Camolin SW2 Upstream		Station Ref	RS12C080300		Ammonia N	BOD, 5 days with Inhibition (Carbonaceous)	Suspended Solids	COD Chemical Oxygen Demand	Ortho-Phosphate P	pH	Total Nitrogen N	Total Oxidised Nitrogen N	Total Kejdahl Nitrogen	Total Phosphate P	Temperature	Dissolved Oxygen	Visual Inspection	Dissolved Oxygen % Saturation
Entity	Entity Referenc	Station Easting	Station Northin	Sample Date	Sample Metho	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l	mg/l	mg/l	Degrees C	mg/l	Descriptive	% Sat.
Curragh	12C08	306226	152641	28-Mar-2018	Grab	0.12	2	5	5	0.03	7.3	7.1	5.21	1.9	0.1	10.2	11.14	Clear, no floc/sed, N	86.4
Curragh	12C08	306226	152641	24-May-2018	Grab	0.02	2	5	5	0.02	7.4	6.8	6.64	1	0.15	12	10.44	Clear, no floc/sed, N	105.6
Curragh	12C08	306226	152641	17-July-2018	Grab	0.06	1			0.03	7.2						9.9	Some suspended, few settled solids	103.6
Curragh	12C08	306226	152641	5-Nov-2018	Grab	0.13	1			0.1	7.08						9.48	Clear, SS	94.6
				Mean		0.07	1.33	5.00	5.00	0.05	7.23	6.80	6.64	1.00	0.15	12.00	9.94		101.27
				95%ile		0.12	1.90	5.00	5.00	0.09	7.38	6.80	6.64	1.00	0.15	12.00	10.39		105.40
Sation	Camolin SW2 Downstream		Station Ref	RS12C080330															
Curragh	12C08	306161	152214	28-Mar-2018	Grab	0.05	2	5	5	0.02	7.3	7.3	6.22	1.1	0.1	10.2	11.29	Clear, no floc/sed, N	88.1
Curragh	12C08	306161	152214	24-May-2018	Grab	0.02	2	5	5	0.02	7.3	6.9	6.65	1	0.11	12	10.44	Clear, no floc/sed, N	105.3
Curragh	12C08	306161	152214	17-July-2018	Grab	0.06	1			0.04	7.2						9.61	Clear, few suspended solids	99.5
Curragh	12C08	306161	152214	5-Nov-2018	Grab	0.1	7			0.1	7.06						9.48	Clear, Some SS	94.1
				Mean		0.06	3.33	5.00	5.00	0.05	7.19	6.90	6.65	1.00	0.11	12.00	9.84		99.63
				95%ile		0.10	6.50	5.00	5.00	0.09	7.29	6.90	6.65	1.00	0.11	12.00	10.36		104.72