Annual Environmental Report

2018

Bundody

D0163-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0163-01, Bunclody, in Wexford 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 BUNCLODY WWTP with a Plant Capacity PE of 6500. The treatment process includes the following:

1.2.1 BUNCLODY WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Screening and grit removal
Primary Treatment	No	
Secondary Treatment	Yes	Actiavted Sludge Extended Aeration
Nutrient Removal	Yes	P removal
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 BUNCLODY WWTP

Compliance Status	
Were all parameters compliant for BUNCLODY WWTP treatment plant	No
Where noncompliant 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
BUNCLODY WWTP	Cake Sludge	173.82	Weight (Tonnes)	18.02	Lime stabilisation Mortorstown

Annual Statement of Measures

There no capital works or significant changes in 2018, there are nocurrent plants for the next 3 years

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 - BUNCLODY WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
COD-Cr mg/l	12	7240	385.6
Total Phosphorus (as P) mg/l	12	7.41	3.15
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	238	82.13
Total Nitrogen mg/l	12	63.2	27.37
Suspended Solids mg/l	12	205	80.35
Hydraulic Capacity	0	3908	902

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 less than the peak Treatment Plant Capacity as detailed further in Section 3.2. The design of the wastewater tretament plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

2.2 Discharges from the agglomeration

2.2.1 Effluent Monitoring Summary - BUNCLODY 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 exceedences	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	12	0	0	1.79	Pass
Ammonia-Total (as N) mg/l	5	6	0	12	0	0	0.7	Pass
Conductivity 20 C µS/cm	0	0	0	12	0	0	314.09	Pass
Kjeldahl Nitrogen mg/l	0	0	0	6	0	0	1.79	Pass
Visual Inspection Descriptive	0	0	0	13	0	0	0	Pass
Suspended Solids mg/l	35	87.5	0	12	0	0	3.57	Pass
COD-Cr mg/l	125	250	0	12	0	0	8.31	Pass
Temperature °C	25	0	0	11	0	0	10.14	Pass
Total Nitrogen mg/l	15	18	0	12	2	1	4.92	Fail
Fats, Oils & Greases mg/l	0	0	0	4	0	0	0.38	Pass

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedences	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Total Oxidised Nitrogen (as N) mg/l	0	0	0	12	0	0	3.32	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	0	12	3	3	0.4	Fail
pH pH units	0	0	0	12	0	0	7.17	Pass
Total Phosphorus (as P) mg/l	2	2.4	0	12	3	2	0.6	Fail

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):

Dosing pump failure

Significance of Results:

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

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 - BUNCLODY 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	291984, 155751	TPEFF3300D0163SW001	No	No	No	No	Unassigned
Downstream	293314, 154829	TPEFF3300D0163SW001	No	No	No	No	Good

2.3.2 Ambient Monitoring Parameter Summary - BUNCLODY WWTP

The table below provides a summary of monitoring results for designated ambient monitoring points. The upstream and downstream annual mean values are shown (mg/l), and the difference between both monitoring stations is given as a percentage of the Environmental Quality Standard (EQS) where relevant.

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Magnesium - filtered mg/l	RS12S021800	5.44	RS12S021900			
Kjeldahl Nitrogen mg/l	RS12S021800	1.7	RS12S021900	2.35		
Aluminium - filtered µg/l	RS12S021800	29.28	RS12S021900			
Barium - filtered µg/l	RS12S021800	15.5	RS12S021900			
Calcium - filtered mg/l	RS12S021800	42	RS12S021900			
Arsenic - filtered µg/l	RS12S021800	1.22	RS12S021900			
Dissolved Organic Carbon mg/l	RS12S021800	4.05	RS12S021900			
Nitrate (as N) mg/l	RS12S021800	4.23	RS12S021900			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Total Oxidised Nitrogen (as N) mg/l	RS12S021800	4.02	RS12S021900	3.14		
Nitrite (as N) µg/l	RS12S021800	16.88	RS12S021900			
pH pH units	RS12S021800	8.14	RS12S021900	7.66		
Ammonia-Total (as N) mg/l	RS12S021800	0.03	RS12S021900	0.05	0.14	16.2
Iron - filtered µg/l	RS12S021800	57.75	RS12S021900			
Dissolved Oxygen mg/l	RS12S021800	10.41	RS12S021900	9.63		
Zinc - filtered µg/l	RS12S021800	4.56	RS12S021900			
Suspended Solids mg/l	RS12S021800	24.63	RS12S021900	43.25		
Uranium - filtered µg/l	RS12S021800	4.68	RS12S021900			
Strontium - filtered µg/l	RS12S021800	90.63	RS12S021900			
True Colour mg/litre Pt Co	RS12S021800	22.13	RS12S021900			
COD-Cr mg/l	RS12S021800	25	RS12S021900	21.25		
Chloride mg/l	RS12S021800	17.65	RS12S021900			
BOD - 5 days (Total) mg/l	RS12S021800	2.36	RS12S021900		2.6	
Dissolved Oxygen % Saturation	RS12S021800	101.68	RS12S021900	97.65		

Potassium - filtered mg/l	RS12S021800	2.2	RS12S021900			
Total Phosphorus (as P) mg/l	RS12S021800	0.19	RS12S021900	0.19		
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	RS12S021800	1.13	RS12S021900	2	2.6	33.7
Copper - filtered µg/l	RS12S021800	1.35	RS12S021900			
Alkalinity-total (as CaCO3) mg/l	RS12S021800	104.75	RS12S021900			
Conductivity @25°C µS/cm	RS12S021800	311.88	RS12S021900			
Cadmium - filtered µg/l	RS12S021800	0.02	RS12S021900			
Boron - filtered µg/l	RS12S021800	14.38	RS12S021900			
Total Nitrogen mg/l	RS12S021800	4.28	RS12S021900	4.53		
Total Hardness (as CaCO3) mg/l	RS12S021800	129.75	RS12S021900			
Sodium - filtered mg/l	RS12S021800	12.5	RS12S021900			
Manganese - filtered µg/l	RS12S021800	10.7	RS12S021900			
Temperature °C	RS12S021800	13.03	RS12S021900	10.65		
ortho-Phosphate (as P) - unspecified mg/l	RS12S021800	0.02	RS12S021900	0.03	0.08	4.3

Significance of Results:

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

The parameters which exceeded the EQS and may be causing an are: None.

Any other know impacts: Upstream activities - agriculture and onsite WWTP's additionally IPC license Discharge also location within upstream and downstream monitoring locations. The EQS assessed relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009, as amended

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 - BUNCLODY WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
COD	131161.93	2663.36	97.97	
cBOD	27934.79	574.59	97.94	
TN	9308.41	1575.06	83.08	
TP	1070.51	190.76	82.18	
SS	27331.19	1143.97	95.81	

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.

BUNCLODY WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	4389

DWF to the Treatment Plant (m3/day)	1463
Current Hydraulic Loading - annual max (m3/day)	3908
Average Hydraulic loading to the Treatment Plant (m3/day)	902
Organic Capacity (PE) - As Constructed	6500
Organic Capacity (PE) - Collected Load (peak week)	2632
Organic Capacity (PE) - Remaining	3868
Will the capacity be exceeded in the next three years? (Yes/No)	No

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
2	Blocked Sewer	0	2

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	Dosing Pump Failure	2	No	Yes
Non-compliance	Other	2	No	No
Non-compliance	Other	1	Yes	No

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	5
Number of Incidents reported to the EPA via EDEN in 2018	5
Explanation of any discrepancies between the two numbers above	

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)?[3]	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP?[2](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 (m3)	Monitoring Status
SW-2	291537, 156610	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 (m3)?	
Is each SWO identified as non meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes
Have the EPA been advised of any additional SWOs / charges 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
Construction of forward feed pumping station and associated storm water storage tank	C	31/12/2010	Y	Works Completed		
Discharge to cease: SW-3 to River Slaney	C	31/12/2010	Y	Works Completed		
Discharge to cease: SW-4 to stream with ultimate discharge to River Slaney	C	31/12/2010	Y	Works Completed		
Discharge to cease: SW-5 to stream with ultimate discharge to River Slaney	C	31/12/2010	Y	Works Completed		
Discontinuation of Secondary discharge(s)	C	31/12/2010	Y	Works Completed		
WWTP and ancillary works	C	31/12/2010	Y	Works Completed		

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 (e.g. Appendix X).
There is no Licence Specific Report Required in this AER Annual Review.				

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?	
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: 26/02/2019

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

In the appendix include all the detailed or site specific reports that are relevant to the AER. Reports omitted from previous AERs should also be appended here.

Appendix
Appendix 7.1 - Ambient monitoring summary

Bunclody Upstream, SW1					***Station Code***		***RS12S021800***							
		Ammonia N	BOD, 5 days with Inhibition (Carbonaceous)	COD Chemical Oxygen Demand	Ortho-Phosphate P	pH	Suspended Solids	Total Kejdahl Nitrogen	Total Nitrogen N	Total Oxidised Nitrogen N	Total Phosphate P	Temperature	Dissolved Oxygen	Dissolved Oxygen % Saturation
Sample Date	Sample Method	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	Degrees C	mg/l	% Sat.
15-Mar-2018	Grab	0.07	5	45	0.05	7.4	82	1.5	3.2	1.68	0.33	8.7	10.1	99.6
24-May-2018	Grab	0.02	1	5	0.02	8.3	5	1.9	6.5	4.63	0.1	14.9	10.13	104.8
17-July-2018	Grab	0.06	1		0.02	7.8			3.8			15.2	9.1	92.2
1-Nov-2018	Grab	0.02	1		0.04	7.12			3.6			6	9.21	94.6
Mean		***0.0425***	***2***	***25***	***0.0325***	***7.655***	***43.5***	***1.7***	***4.275***	***3.155***	***0.215***	***11.2***	***9.635***	***97.8***
95%ile		***0.0685***	***4.4***	***43***	***0.0485***	***8.225***	***78.15***	***1.88***	***6.095***	***4.4825***	***0.3185***	***15.155***	***10.1255***	***104.02***

Bunclody Downstream SW1					***Station Code***		***RS12S021900***							
15-Mar-2018	Grab	0.07	5	40	0.05	7.4	84	1.1	2.7	1.65	0.33	8.7	10.4	101
24-May-2018	Grab	0.02	2	5	0.02	8.4	5	3.6	8.2	4.62	0.1	15	10.32	106.6
17-July-2018	Grab	0.06	3		0.02	7.7			3.7			12.4	8.4	86.8
1-Nov-2018	Grab	0.09	1		0.03	7.15			3.5			6.5	9.38	96.2
Mean		***0.06***	***2.75***	***22.5***	***0.03***	***7.6625***	***44.5***	***2.35***	***4.525***	***3.135***	***0.215***	***10.65***	***9.625***	***97.65***
95%ile		***0.087***	***4.7***	***38.25***	***0.047***	***8.295***	***80.05***	***3.475***	***7.525***	***4.4715***	***0.3185***	***14.61***	***10.388***	***105.76***