Annual Environmental Report

2018

Kinnitty

D0363-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0363-01, Kinnitty, in Offaly 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 Kinnitty WWTP with a Plant Capacity PE of 750. The treatment process includes the following:

1.2.1 Kinnitty WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	including Screening
Primary Treatment	No	
Secondary Treatment	Yes	RBC
Nutrient Removal	Yes	Ferric Dosing since September 2017
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 Kinnitty WWTP

Compliance Status	
Were all parameters compliant for Kinnitty WWTP treatment plant	Yes
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
Kinnitty WWTP	Liquid Sludge	304	Volume (m3)	3	Tullamore WWTP
Kinnitty WWTP	Liquid Sludge	729.89	Volume (m3)	3	Tullamore WWTP

Annual Statement of Measures

There were no major capital or operational changes undertaken.

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 - Kinnitty WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
COD-Cr	6	139	60.08
Suspended Solids	6	70	45.3
BOD, 5 days with Inhibition (Carbonaceous BOD)	6	44	22.75
Hydraulic Capacity		600	261

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.The design of the wastewater treatment 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 - Kinnitty 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)
ortho-Phosphate (as P) - unspecified	2.5	3	0	6	0	0	0.42	Pass
Suspended Solids	35	87.5	0	6	0	0	7.83	Pass
Ammonia-Total (as N)	5	6	0	6	0	0	0.29	Pass
COD-Cr	125	250	0	6	0	0	18.14	Pass
pH	6 to 9	0	0	6	0	0	7.76	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD)	25	50	0	6	0	0	5.54	Pass

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):

Not Applicable.

Significance of Results:

The WWTP is 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 - Kinnitty 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	219082, 206580	TPEFF2500D0363SW001	No	No	No	No	Good
Downstream	217751, 206147	TPEFF2500D0363SW001	No	Yes	No	No	Good

2.3.2 Ambient Monitoring Parameter Summary - Kinnitty 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 compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results meet the required EQS. Where the ambient monitoring results meets the EQS this 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.

In terms of the drinking water abstraction downstream (2500PUB1002, approx. 11 km downstream of SW001) there is no evidence to suggest that the discharge from the Kinnitty WWTP is having an impact on this abstraction.

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 - Kinnitty WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
cBOD	2304.63	500.55	78.28
SS	4588.48	707.83	84.57
COD	6084.98	1640.07	73.05

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.

Kinnitty WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	506
DWF to the Treatment Plant (m^3/day)	169
Current Hydraulic Loading - annual max (m^3/day)	600
Average Hydraulic loading to the Treatment Plant (m^3/day)	261
Organic Capacity (PE) - As Constructed	750
Organic Capacity (PE) - Collected Load (peak week)	381
Organic Capacity (PE) - Remaining	369
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)
There is no Incident data included in the AER.				

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	0
Number of Incidents reported to the EPA via EDEN in 2018	0
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	217984, 206023	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?	No
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
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
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
Drinking Water Abstraction Point Risk Assessment	Yes	2014	No	
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	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	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

Kinnitty 2018 Ambient Monitoring Summary

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	219986, 206172	RS25C020150				
Downstream Monitoring Point	217747, 206143	RS25C020300	No	Yes	No	No

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD	o-Phosphate (as P)	Ammonia (as N)
Upstream Monitoring Point	Good	0.629	0.008	0.023
Downstream Monitoring Point	Good	0.843	0.011	0.028
Difference		*0.214*	*0.003*	*0.005*
EQS		2.600	0.075	0.140
% of EQS		8.242%	3.810%	3.571%

Significance of results

- The WWTP was compliant with all the ELVs set out in the wastewater discharge licence
- The discharge from the WWTP has no observable negative impact on the Water Framework Directive status.
- Based on the 2018 ambient monitoring data, the discharge from the wastewater treatment plant is not having an observable negative impact on the water quality.
- In terms of the drinking water abstraction downstream (2500PUB1002, approx. 11 km downstream of SW001) there is no evidence to suggest that the discharge from the Kinnitty WWTP is having an impact on this abstraction

2018 Ambient Monitoring Data

Upstream Results								
Date		Ammonia (mg/l) *	Ortho P (mg/l) *	BOD (mg/l) *	Total N (mg/l)	D.O (% Sat)	D.O (mg/l)	pH (mg/l)
20-Mar-2018	U/S	< 0.02	0.007	< 1		105.9	1310.00	7.54
24-May-2018	U/S	< 0.03	< 0.006	< 1		109.2	11.27	7.41
17-July-2018	U/S	0.034	0.013	< 1		96.0	10.28	8.03
29-Aug-2018	U/S	< 0.02	< 0.006	< 1	2.9	99.5	9.56	7.95
27-Sep-2018	U/S	0.036	0.010	< 1	0.5	92.9	10.01	7.70
24-Oct-2018	U/S	0.020	0.017	< 1	0.7	102.6	11.70	7.88
29-Nov-2018	U/S	0.039	< 0.006	1.4	0.5	102.9	11.64	7.56
Mean		**0.023**	**0.008**	**0.629**	1.2	101.3	196.35	7.72
95%ile		**0.038**	**0.016**	**1.130**	2.6	108.2	920.51	8.01

Downstream Results								
Date		Ammonia (mg/l) *	Ortho P (mg/l) *	BOD (mg/l) *	Total N (mg/l)	D.O (% Sat)	D.O (mg/l)	pH (mg/l)
20-Mar-2018	D/S	< 0.02	0.007	< 1		105.4	13.04	7.74
24-May-2018	D/S	0.031	0.008	< 1		115.3	11.84	7.67
17-July-2018	D/S	0.043	0.013	1.4		119.0	11.30	8.36
29-Aug-2018	D/S	0.029	0.024	< 1	2.7	99.4	9.56	7.99
27-Sep-2018	D/S	0.044	0.007	1	1.1	92.5	9.80	7.99
24-Oct-2018	D/S	< 0.02	0.014	< 1	1.3	101.4	11.29	8.03
29-Nov-2018	D/S	0.032	< 0.006	1.5	0.7	102.0	11.51	7.53
Mean		**0.028**	**0.011**	**0.843**	1.5	105.0	11.19	7.90
95%ile		**0.044**	**0.021**	**1.470**	2.5	117.9	12.68	8.26

* 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.