Annual Environmental Report

2018

Tullamore

D0039-01

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0039-01, Tullamore, 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 TULLAMORE WWTP with a Plant Capacity PE of 45000. The treatment process includes the following:

1.2.1 TULLAMORE WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	including screening and grit removal
Primary Treatment	No	
Secondary Treatment	Yes	Conventional activated sludge
Nutrient Removal	Yes	Chemical dosing for phosphorus removal
Tertiary Treatment	Yes	Disc filters

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 TULLAMORE WWTP

Compliance Status	
Were all parameters compliant for TULLAMORE 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
TULLAMORE WWTP	Cake Sludge	169	Weight (Tonnes)	21.6	H&L Environmental Services Ltd
TULLAMORE WWTP	Cake Sludge	1104	Weight (Tonnes)	21.2	Limerick WWTP
TULLAMORE WWTP	Liquid Sludge	1360	Weight (Tonnes)	22	Unknown

Annual Statement of Measures

A Drainage Area Plan (DAP) study is due to be completed by Q4 2020. The DAP will encompass both Storm Water Overflow and network assessments and will therefore comprehensively address the need to carry out separate Storm Water Overflow and Sewer Integrity Assessments.

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 - TULLAMORE WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
Suspended Solids mg/l	15	630	307.12
Total Nitrogen mg/l	14	62	39.62
Total Phosphorus (as P) mg/l	14	13.98	7.78
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	15	329	196.41
COD-Cr mg/l	15	977	575.01
Hydraulic Capacity	0	19336	5544

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.

2.2 Discharges from the agglomeration

2.2.1 Effluent Monitoring Summary - TULLAMORE 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)
Suspended Solids mg/l	15	37.5	0	15	0	0	5.21	Pass
Ammonia-Total (as N) mg/l	0.5	1	0	15	0	0	0.11	Pass
Conductivity 20 C µS/cm	0	0	0	15	0	0	1199	Pass
pH pH units	0	0	0	15	0	0	7.79	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	8	16	0	15	0	0	1.57	Pass
Total Nitrogen mg/l	0	0	0	15	0	0	26.03	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.25	0.5	0	15	1	0	0.13	Pass
Total Phosphorus (as P) mg/l	0.5	0.6	0	15	1	1	0.33	Fail
COD-Cr mg/l	125	250	0	15	0	0	16.16	Pass

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):

Inadequate Operational Procedures.

Significance of Results:

The WWTP is not compliant with the ELV's set in the Wastewater Discharge Licence. There was 1 exceedance in relation to the TP Condition 2 ELV. The impact on receiving water 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 - TULLAMORE 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	233276, 224875	TPEFF2500D0039SW001	No	No	No	No	Unassigned
Downstream	229513, 225049	TPEFF2500D0039SW001	No	No	No	No	Poor

2.3.2 Ambient Monitoring Parameter Summary - TULLAMORE 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
Total Hardness (as CaCO3) mg/l	RS25T030300	394	RS25T030400	389.55		
Conductivity @25°C µS/cm	RS25T030300	762.4	RS25T030400	878.64		
Ammonia-Total (as N) mg/l	RS25T030300	0.09	RS25T030400	0.06	0.14	-21.9
Dissolved Oxygen % Saturation	RS25T030300	80.6	RS25T030400	83.82		
Nitrate (as N) mg/l	RS25T030300	2.72	RS25T030400	6.4		
BOD - 5 days (Total) mg/l	RS25T030300	0.96	RS25T030400	1.16	2.6	7.5
ortho-Phosphate (as P) - unspecified mg/l	RS25T030300	0.04	RS25T030400	0.04	0.075	-9.7
Dissolved Oxygen mg/l	RS25T030300	8.7	RS25T030400	9.23		
Alkalinity-total (as CaCO3) mg/l	RS25T030300	340	RS25T030400	303.91		
pH pH units	RS25T030300	8.1	RS25T030400	7.96		
True Colour mg/litre Pt Co	RS25T030300	33.6	RS25T030400	35.73		
Nitrite (as N) µg/l	RS25T030300	49.42	RS25T030400	55.6		
Chloride mg/l	RS25T030300	32.36	RS25T030400	58.19		

Temperature °C	RS25T030300	11.7	RS25T030400	11.26		
Total Oxidised Nitrogen (as N) mg/l	RS25T030300	2.76	RS25T030400	6.44		

Significance of Results:

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

The ambient monitoring results meet the required EQS. Where the ambient monitoring results meet 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 negative impact on the water quality.

The discharge from the WWTP is considered not to be having an observable negative impact on the Water Framework Directive status. The WFD status is Unassigned at the upstream monitoring point, however the WFD status is Poor approx. 50m downstream of this point. The WFD status is Poor downstream of the WWTP.

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 - TULLAMORE WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
TP	15371.86	855.68	94.43
TN	78321.18	67771.2	13.47
cBOD	388339.63	4096.87	98.95
SS	607231.11	13573.13	97.76
COD	1136905.67	42076.71	96.3

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.

TULLAMORE WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	33000

TULLAMORE WWTP	
DWF to the Treatment Plant (m3/day)	11000
Current Hydraulic Loading - annual max (m3/day)	19336
Average Hydraulic loading to the Treatment Plant (m3/day)	5544
Organic Capacity (PE) - As Constructed	45000
Organic Capacity (PE) - Collected Load (peak week)	21771
Organic Capacity (PE) - Remaining	23229
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
26	Blocked Sewer	1	25

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	Dosing Pump Failure	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	Other	1	No	Yes
Non-compliance	Inadequate Operational Procedures	1	No	Yes

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	4
Number of Incidents reported to the EPA via EDEN in 2018	4
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)
Landfill Leachate (delivered by tanker)	22785	Volume (m3)	277	1.1	No	No	No

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)
Domestic /Septic Tank Sludge	9637.75	Weight (Tonnes)	117	0.5	No	No	No

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
SW10	234233, 224927	Yes	Unknown	Not Meeting			Not Monitored
SW3- DISCONTINUED	233179, 224918	Yes	Unknown	N/A			N/A
SW4- DISCONTINUED	233032, 224847	Yes	Unknown	N/A			N/A
SW5- DISCONTINUED	233234, 224889	Yes	Unknown	N/A			N/A
SW7	233614, 224949	Yes	Unknown	Meeting			Not Monitored
SW9 - DISCONTINUED	234227, 224930	Yes	Unknown	N/A			NA

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Not Monitored
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO Assessment included the requirements of relevant of WWDL schedules?	No
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 the proposed secondary discharge outfall to the Clodiagh River for p.e. in excess of 30,000, and not greater than 15,000	C	01/01/2012	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.
De-commissioning of secondary discharge SW14 (SW002)	C	01/01/2014	Yes	Works Completed		

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
De-commissioning of SW003 storm water overflow	C	01/01/2012	Yes	Works Completed		
De-commissioning of SW004 storm water overflow	C	01/01/2014	Yes	Works Completed		
De-commissioning of SW005 storm water overflow	C	01/01/2012	Yes	Works Completed		
De-commissioning of SW007 storm water overflow	C	01/01/2014	Yes	Not Started		
Discharge to cease: SW003 to Tullamore River	A	01/01/2012	Yes	Works Completed		
Discharge to cease: SW004 to Tullamore River	A	01/01/2014	Yes	Works Completed		
Discharge to cease: SW005 to Tullamore River	A	01/01/2012	Yes	Works Completed		
Installation of storm water storage tank at the inlet of the works	C	01/01/2012	Yes	Works Completed		
SW002 to Tullamore River to be discontinued (formerly SW14)	A	01/01/2014	Yes	Works Completed		
SW007 to Tullamore River to be discontinued	A	01/01/2014	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.
Upgrade of the existing WWTP including the installation of storm water storage tank at the inlet of the works	C	01/01/2012	Yes	Works Completed		

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
Upgrading of SW10 to comply with DoE criteria for SWOs.	C	01/01/2014	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 Substance 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: 27/02/2019

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

There are no Appendices included.