

Annual Environmental Report

2018



Moylough

D0403-01

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

- 1.1 LICENCE SPECIFIC REPORTING INCLUDED IN AER
- 1.2 TREATMENT TYPE
 - 1.2.1 MOYLOUGH WWTP
- 1.3 ELV OVERVIEW
 - 1.3.1 MOYLOUGH WWTP
- 1.4 SLUDGE REMOVAL

2 MONITORING REPORTS SUMMARY

- 2.1 SUMMARY REPORT ON MONTHLY INFLUENT MONITORING
 - 2.1.1 INFLUENT MONITORING SUMMARY - MOYLOUGH WWTP
- 2.2 DISCHARGES FROM THE AGGLOMERATION
 - 2.2.1 EFFLUENT MONITORING SUMMARY - MOYLOUGH WWTP
- 2.3 AMBIENT MONITORING SUMMARY
 - 2.3.1 AMBIENT MONITORING REPORT SUMMARY - MOYLOUGH WWTP
 - 2.3.2 AMBIENT MONITORING PARAMETER MEAN (MG/L) - MOYLOUGH WWTP

3 OPERATIONAL REPORTS SUMMARY

- 3.1 TREATMENT EFFICIENCY REPORT
 - 3.1.1 TREATMENT EFFICIENCY REPORT SUMMARY - MOYLOUGH WWTP
- 3.2 TREATMENT CAPACITY REPORT SUMMARY
- 3.3 COMPLAINTS SUMMARY
- 3.4 REPORTED INCIDENTS SUMMARY
 - 3.4.1 SUMMARY OF INCIDENTS
 - 3.4.2 SUMMARY OF OVERALL INCIDENTS
- 3.5 SLUDGE / OTHER INPUTS TO THE WWTP

4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

- 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT
 - 4.1.1 SWO IDENTIFICATION
 - 4.1.2 INSPECTION SUMMARY REPORT
- 4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS
 - 4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY
 - 4.2.2 IMPROVEMENT PROGRAMME SUMMARY

4.2.3 SEWER INTEGRITY RISK ASSESSMENT SUMMARY

5 LICENCE SPECIFIC REPORTS

5.1 PRIORITY SUBSTANCES ASSESSMENT

6 CERTIFICATION AND SIGN OFF

6.1 SUMMARY OF AER CONTENTS

6.2 DECLARATION BY IRISH WATER

7 APPENDIX

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0403-01, Moylough, in Galway 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 Moylough WWTP with a Plant Capacity PE of 1000. The treatment process includes the following:

1.2.1 Moylough WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	mechanical screen
Primary Treatment	No	
Secondary Treatment	Yes	Fine bubble diffused aeration
Nutrient Removal	No	
Tertiary Treatment	Yes	Bioditch with Plastic Media

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 Moylough WWTP

Compliance Status	
Were all parameters compliant for Moylough 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
Moylough WWTP	Liquid Sludge	250	Weight (Tonnes)	5	Tuam WWTP

Annual Statement of Measures

A storm event recorder was installed by contractor during 2017 on the 300mm SWO from the inlet chamber. Irish Water have constructed a second sludge reed bed from the existing sludge drying beds. This will allow the WwTP to become more self sufficient in terms of sludge management. Irish Water has replaced the broken/collapsed outfall pipe from the WwTP. Some sewer rehabilitation work was carried out in 2017 to reduce infiltration in the network and Irish Water intend to carry out further Sewer Rehabilitation Works on the Network to address Structural defects, in 2019. Irish Water also plans to carry out further process optimisation in 2019 to assist compliance, in particular with nutrient ELVs.

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 - Moylough WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
Suspended Solids mg/l	6	157	108.21
Total Nitrogen mg/l	1	27.3	27.3
Total Phosphorus (as P) mg/l	1	3.5	3.5
COD-Cr mg/l	6	512	361.9
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	275	167.78
Hydraulic Capacity	0	1169	145.72

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 - Moylough 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)
ortho-Phosphate (as P) - unspecified mg/l	3	3.6	0	6	3	3	7.66	Fail
COD-Cr mg/l	125	250	0	6	1	1	151.34	Fail
pH pH units	0	0	0	6	0	0	7.83	Pass
Suspended Solids mg/l	35	87.5	0	6	3	1	60.06	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	6	1	1	47.36	Fail
Ammonia-Total (as N) mg/l	5	6	0	6	3	3	20.79	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):

heavy rainfall and network infrastructure

Significance of Results:

The WWTP is non-compliant with five ELV's set in the Wastewater Discharge Licence. The impact on receiving water is assessed further in Section 2.3.

There was one exceedance in relation to COD, which was above Condition 2 ELV.

There were three exceedances in relation to SS, one of which was above the Condition 2 ELV.

There was one exceedance in relation to cBOD, which was above Condition 2 ELV.

There were three exceedances in relation to Ammonia, all of which were above Condition 2 ELV.

There were three exceedances in relation to Ortho-phosphate, all of which were above Condition 2 ELV.

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 - Moylough 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	163050, 248428	TPEFF1200D0403SW001	No	No	No	No	Poor
Downstream	163131, 248311	TPEFF1200D0403SW001	No	No	No	No	Poor

2.3.2 Ambient Monitoring Parameter Summary - Moylough 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
Ammonia-Total (as N) mg/l	RS26T980250	2.11	RS26T980290	4.9	0.14	1998.8
ortho-Phosphate (as P) - unspecified mg/l	RS26T980250	0.35	RS26T980290	0.91	0.075	753.3
BOD - 5 days (Total) mg/l	RS26T980250	17.5	RS26T980290	11.37	2.6	-235.9
pH pH units	RS26T980250	7.65	RS26T980290	7.57		
Dissolved Oxygen mg/l	RS26T980250	10.5	RS26T980290	8		

Significance of Results:

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

The discharge from the works maybe giving rise to a breach of EQS in the receiving water regardless of status.

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

Any other know impacts: n/a

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 - Moylough WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
TN	1205.7			
COD	14479.93	6055.43	58.18	
TP	154.58			
SS	4329.52	2403.05	44.5	
cBOD	6712.94	1895.08	71.77	

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.

Moylough WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	300
DWF to the Treatment Plant (m3/day)	100
Current Hydraulic Loading - annual max (m3/day)	1169
Average Hydraulic loading to the Treatment Plant (m3/day)	145.72
Organic Capacity (PE) - As Constructed	1000
Organic Capacity (PE) - Collected Load (peak week)	533
Organic Capacity (PE) - Remaining	467
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
There is no Complaint data included in the AER.			

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	Other	1	Yes	No
Non-compliance	Other	1	Yes	No

3.4.2 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	

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
SW002	163031, 248349	Yes	Low	Unknown			Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	0.00
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?	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
D0403-SIP:01	C	31/12/2019	No	Not Started		A desktop study for Condition 5 Assessment will be completed by Q4 2018
D0403-SIP:02	C	31/12/2019	No	Not Started		

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 Improvement Programmes 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).
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	
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	NA

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

Signed:

Date: 28/02/2019

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