

Annual Environmental Report 2017

Agglomeration Name:	Glaslough
Licence Register No.	D0347-01



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Section 1. Executive Summary and Introduction to the 2017 AER

1.1 Summary Report on 2017

This Annual Environmental Report has been prepared for **D0347-01, Glaslough**, in County **Monaghan**, in accordance with the requirements of the wastewater discharge licence for the agglomeration.

The agglomeration is served by a wastewater treatment plant with a Plant Capacity PE of 1850. The treatment process includes the following:-

- Primary Treatment (Sludge Settlement Pond)
- Secondary Treatment (Wetland Treatment System)
- Nutrient Removal (Wetland Treatment System)

The final effluent from the Primary Discharge Point was non-compliant with the Emission Limit Values in 2017.

The following parameters exceeded the emission limit values in 2017:-

- Ortho P / MRP (mg/l)
- Ammonia N (mg/l)

0kgs total weight liquid sludge was removed from the wastewater treatment plant in 2017. Sludge was transferred to Sludge settlement ponds onsite

The following improvement works were undertaken in 2017:-

- | | |
|-----------------|--|
| <i>1. Issue</i> | <i>Fridge and temperature sensors failed on both influent and effluent composite samplers.</i> |
| <i>Measure</i> | <i>Replace fridge and temperature sensors</i> |
| <i>Status</i> | <i>Complete 2017</i> |
| | |
| <i>2. Issue</i> | <i>Breach of emission limit values for Ammonia and Ortho phosphate.</i> |
| <i>Measure</i> | <i>Interpond sample programme (to include provision of composite samplers and flow measurement between ponds). Results of this sample program will be used to determine further actions required</i> |
| <i>Status</i> | <i>Due to commence 2018</i> |

An Annual Statement of Measures is included in **Appendix 7.1**

Section 2. Monitoring Reports Summary

2.1 Summary report on monthly influent monitoring

Table 2.1 Influent Monitoring Summary

2.1.1 Monthly Influent Monitoring	BOD (mg / l)	COD (mg / l)	SS (mg / l)	TP (mg / l)	TN (mg / l)	Hydraulic Loading (m3/d)
Number of Samples	6	6	6	6	6	
Annual Max.	517	978	393	9.4	52.6	367
Annual Mean	270.12	507.99	146.45	4.76	41.09	134.00

Other inputs in the form of sludge/leachate are added to the WWTP after the influent monitoring point and are therefore not represented by influent monitoring. Other inputs, where relevant, are detailed in Section 3.6.

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 treatment plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values

The annual mean organic loading is less than the Treatment Plant Capacity as detailed further in Section 3.2.

The annual maximum organic loading is less than the Treatment Plant Capacity as detailed further in Section 3.2.

2.2 Discharges from the agglomeration

Table 2.2 - Effluent Monitoring

2.2.1 Effluent Monitoring Summary	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Ortho P / MRP (mg/l)	Ammonia N (mg/l)	pH (Range)
WWDL ELV (Schedule A) where applicable	10.00	75.00	15.00	0.50	1.00	6 to 9
ELV with Condition 2 Interpretation included	20.00	150.00	37.50	0.60	2.00	No allowable Failures
% Reduction (Schedule A)						
Number of sample results	6	6	6	6	6	6
Number of sample results above WWDL ELV	0	0	0	6	3	0
Number of sample results above ELV with Condition 2 Interpretation	0	0	0	6	3	0
Annual Mean (for parameters where a mean ELV applies)						
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	Fail	Fail	Pass

Significance of results

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There were 9 samples non-compliant with the ELVs in relation to Ortho P / MRP (mg/l), Ammonia N (mg/l). The non-compliance is due to 6 samples above the max ELV for ortho phosphate and 3 samples above the max ELV for ammonia in 2017. The ammonia non-compliances are due to vegetation decay and die back in the wetland system.

14/02/17 ammonia 5.5mg/l n, ortho p 2.8mg/l p

19/04/17 ortho p 3.1mg/l p

20/06/17 ortho p 2.3 mg/l p

22/08/17 ortho p 1.2 mg/l p

10/10/17 ammonia 8.4mg/l n, ortho p 2.5mg/l p

22/11/17 ammonia 12mg/l n, ortho p 2.7mg/l p

The impact on receiving waters is assessed further in Section 2.3.

2.3 Ambient Monitoring Summary

Table 2.3. Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Bathing Water	Drinking Water	FWPM	Shellfish
Upstream Monitoring Point	272001, 342273	IE_NB_03M010670				
Downstream Monitoring Point	272357, 342273	IE_NB_03M010680	No	No	No	No
Downstream Monitoring Point #2						

Table 2.3.2 Ambient Impact Assessment Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD	0-Phosphate (as P)	Ammonia (as N)	Nitrogen		
Upstream Monitoring Point	Poor	2.81	0.082	0.086	1.28		
Downstream Monitoring Point	Poor	3.2	0.119	0.194	1		
Downstream Monitoring Point #2							
Difference between Upstream and Downstream		0.39	0.037	0.108			
Difference between Upstream and Downstream #2							
EQS		2.6	0.075	0.14			
% of Eqs		15.00%	49.33%	77.14%			
% of Eqs #2							

The results for the upstream and downstream monitoring and/or additional monitoring data sets from Irish Water are included in the Appendix.

Significance of results

- The WWTP was non-compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.
- The receiving waters do not meet the EQS required.
- The discharge from the wastewater treatment plant may be having an impact on water quality.
- The discharge from the WWTP may not be contributing to achieving the WFD Objectives of the receiving water.

2.4 Pollutant Release and Transfer Register (PRTR) - report for previous year

A PRTR is not required as the PE is < 2000

Section 3. Operational Reports Summary

3.1 Treatment Efficiency Report

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Total P (kg/yr)	Total N (kg/yr)
Influent mass loading (kg/year)	12,751	23,980	6,913	225	1,940
Effluent mass emission (kg/year)	40	1,853	135	93	231
% Efficiency (% reduction of influent load)	100%	92%	98%	58%	88%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)	420
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)	1,260
Hydraulic Capacity – Current loading (m3/day)	134
Hydraulic Capacity – Remaining (m3/day)	1,126
Organic Capacity - Design / As Constructed (PE)	1,850
Organic Capacity - Collected Load (PE)	544
Organic Capacity – Remaining (PE)	1,306
Will the capacity be exceeded in the next three years? (Yes / No)	No

3.3 Extent of Agglomeration Summary Report

In this section Irish Water is required to report on the amount of urban waste water generated within the agglomeration. It does not include any waste water collected and created in a private system and discharged to water under a Section 4 Licence issued under the Water Pollution Acts 1977 (as amended).

Table 3.3 - Extent of Agglomeration Summary Report

	% of P.E. load generated in the agglomeration	Estimated / Measured
Load generated in the agglomeration that is collected in the sewer network	100%	Estimated
Load collected in the agglomerations that enters treatment plant	100%	Estimated
Load collected in the sewer network but discharges without treatment (includes SWO, EO, and any discharges that are not treated)		Estimated

Load generated in the agglomeration that is collected in the sewer network is the total load generated and collected in the municipal network within the boundary of the agglomeration.

Load collected in the agglomerations that enters treatment plant is that portion of the previous figure which enters the waste water treatment plant.

Load collected but discharged without treatment is that portion of the first figure which is discharged without treatment.

3.4 Complaints Summary

A summary of complaints of an environmental nature is included below.

Table 3.4 - Complaints Summary Table

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
2	Investigation Sewage Flooding - Below Ground Wastewater	0	2
1	IFI letter re: failure to meet emission limit values	1	0

3.5 Reported Incidents Summary

A summary of reported incidents is included below.

Table 3.5.1 - Summary of Incidents

3.5.1 Incident Type (e.g. Non-compliance, Emission, spillage, pollution incident)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted. Note 1	Reported to EPA (Yes/No)	Closed (Yes/No)
INCI009187 Breach of ELV	Breach of ELV for Orthophosphate and Ammonia	Other	6	Yes	A sampling plan to monitor trends between the ICW is planned for 2018. Data generated from the sampling plan will be used to identify operational improvements required.	IFI	Yes	No

Note 1: For shellfish waters notify the Marine Institute (MI) Sea Fisheries Protection Authority (SFPA) Food Safety Authority (FSAI) and An Bord Iascaigh Mhara (BIM). This should also include any other authorities that should be contacted arising from the findings of any Licence Specific Reports also e.g. Drinking Water Abstraction Impact Risk Assessment, Fresh Water Pearl Mussel Impact Assessments etc.

Table 3.5.2 - Summary of Overall Incidents

Number of Incidents in 2017	6
Number of Incidents reported to the EPA via EDEN in 2017	6
Explanation of any discrepancies between the two numbers above	N/A

3.6 Sludge / Other inputs to the WWTP

There were no sludge/other imports to the WWTP in 2017.

Section 4. Infrastructure Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

There is no stormwater overflow associated with the WWTP

4.2 Report on progress made and proposals being developed to meet the improvement programme requirements.

The Improvement Programme is included in Appendix 7.1. There are no Specified Improvements required for the licence.

Table 4.2.3 - Sewer Integrity Risk Assessment Tool Summary

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	Risk Assessment Rating (High, Medium, Low)	Risk Assessment Score	Reference to relevant section of AER (e.g. Appendix 2 Section 4.	Specified improvements	Comment
Hydraulic Risk Assessment Score	High	120	Appendix 7.3 AER 2016		
Environmental Risk Assessment Score	Low	50	Appendix 7.3 AER 2016		
Structural Risk Assessment Score	High	140	Appendix 7.3 AER 2016		
Operation & Maintenance Risk Assessment Score	Low	40	Appendix 7.3 AER 2016		
Overall Risk Score for the agglomeration	High	350	Appendix 7.3 AER 2016		

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required by Condition 5 in Licence	Required in this AER or outstanding from previous AER?	Included in this AER?	Reference to previous AER containing report or relevant section of this AER
Priority Substances Assessment	Not Required	No	No	
Drinking Water Abstraction Point Risk Assessment	Not Required	No	No	
Shellfish Impact Assessment	Not Required	No	No	
Pearl Mussel Report	Not Required	No	No	
Toxicity/Leachate Management	Not Required	No	No	
Toxicity of Final Effluent Report	Not Required	No	No	
Small Stream Risk Score Assessment	Not Required	No	No	
Habitats Impact Assessment	Not Required	No	No	

Licence Specific Reports Summary of Findings

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report
Priority Substances Assessment	No	
Drinking Water Abstraction Point Risk Assessment	No	
Shellfish Impact Assessment	No	
Pearl Mussel Report	No	
Toxicity/Leachate Management	No	
Toxicity of Final Effluent Report	No	
Habitats Impact Assessment	No	

Section 6. Certification and Sign Off

Table 6.1 - Summary of AER Contents

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? Refer to Condition 1.7 (changes to works/discharges) & Condition 4 (changes to monitoring location, frequency etc.)	No
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements	N/A
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	Yes
Ensure the following reports are included	

Declaration by Irish Water

The AER contains the following:

- Introduction and background to 2017 AER.
- Monitoring Reports Summary.
- Operational Reports Summary.
- Infrastructural Assessment and Programme of Improvements.
- Licence specific reports
- Certification and Sign Off
- Appendices

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

Signed:.....

Date: 26/02/2018

Michael O'Leary
Acting Head of Environmental Regulation

Section 7. Appendices

Appendix 7.1 Statement of Measures / Improvement Programme

1. Issue	Fridge and temperature sensors failed on both influent and effluent composite samplers.
Measure	Replace fridge and temperature sensors
Status	Complete 2017
2. Issue	Breach of emission limit values for Ammonia and Ortho phosphate.
Measure	Interpond sample programme (to include provision of composite samplers and flow measurement between ponds). Results of this sample program will be used to determine further actions required
Status	Due to commence 2018

Appendix 7.2 Ambient Monitoring

Upstream

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)	Temp °C
14/02/2017	0.03	0.03	2.00	0.50		12.30	8.30	7.30
19/04/2017	0.02	0.02	2.40	3.20		11.06	8.20	9.90
20/06/2017	0.08	0.06	1.80	1.70		9.56	8.40	13.90
22/08/2017	0.03	0.07	1.50	0.50		9.61	8.20	15.20
10/10/2017	0.18	0.10	1.00	1.30		9.04	8.10	12.10
22/11/2017	0.17	0.21	8.20	0.50		10.45	7.60	8.00
Mean	0.09	0.08	2.82	1.28		10.34	8.13	11.07
95%ile	0.18	0.18	6.75	2.83		11.99	8.38	14.88

Downstream

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)	Temp °C
14/02/2017	0.07	0.04	2.80	0.50		12.01	8.20	7.30
19/04/2017	0.02	0.04	2.50	1.20		11.14	8.20	10.01
20/06/2017	0.09	0.11	1.80	1.70		9.29	8.20	15.00
22/08/2017	0.03	0.08	2.10	0.50		9.84	8.20	15.40
10/10/2017	0.78	0.24	1.20	1.60		9.74	8.10	11.80
22/11/2017	0.18	0.21	8.80	0.50		10.51	7.60	8.70
Mean	0.19	0.12	3.20	1.00		10.42	8.08	11.37
95%ile	0.63	0.23	7.30	1.68		11.79	8.20	15.30