

# Annual Environmental Report 2017

<b>Agglomeration Name:</b>	<b>Inniskeen</b>
<b>Licence Register No.</b>	<b>D0348-01</b>



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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 **D0348-01, Inniskeen**, 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 1800. The treatment process includes the following:-

- Preliminary Treatment (Screens (manual))
- Secondary Treatment (Aeration)
- Nutrient Removal (Chemical dosing for phosphorus removal)
- Tertiary Treatment (Sand Filter)

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

71,600kgs sludge as dewatered cake was removed from the wastewater treatment plant in 2017. Sludge was transferred to and Biocore Sludge Treatment Centre Ballivor, Co Meath (SSF\_COR\_MH\_13\_0001\_02).

The following improvement works were undertaken in 2017:-

1. *Issue*        *Scada system is old and programme can't be replaced*  
*Measure*    *Replacement required*  
*Status*        *0% complete*
  
2. *Issue*        *Non return valves on the sand filter worn*  
*Measure*    *Install 2 new non return valves at the sand filter pumps*  
*Status*        *100% complete*
  
3. *Issue*        *Faulty outflow meter*  
*Measure*    *Replacement outflow meter*  
*Status*        *100% complete*

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	12	12	12	12	12	
Annual Max.	845	10890	1290	17.6	117.8	1089
Annual Mean	375.93	1177.08	299.99	5.87	46.40	159.20

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 compliant 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

<b>2.2.1 Effluent Monitoring Summary</b>	<b>BOD (mg/l)</b>	<b>COD (mg/l)</b>	<b>TSS (mg/l)</b>	<b>Total P (mg/l)</b>	<b>Ortho P / MRP (mg/l)</b>	<b>Ammonia N (mg/l)</b>	<b>pH (Range)</b>
<b>WWDL ELV (Schedule A) where applicable</b>	10.00	125.00	10.00	2.00	1.50	2.00	6 to 9
<b>ELV with Condition 2 Interpretation included</b>	20.00	250.00	20.00	2.40	1.80	2.40	No allowable exceedances
<b>% Reduction (Schedule A)</b>							
<b>Number of sample results</b>	12	12	12	12	12	12	12
<b>Number of sample results above WWDL ELV</b>	0	0	1	0	0	0	0
<b>Number of sample results above ELV with Condition 2 Interpretation</b>	0	0	0	0	0	0	0
<b>Annual Mean (for parameters where a mean ELV applies)</b>							
<b>Overall Compliance (Pass/Fail)</b>	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Table 2.2 - Effluent Monitoring.....Continued

<b>2.2.1 Effluent Monitoring Summary</b>
<b>WWDL ELV (Schedule A) where applicable</b>
<b>ELV with Condition 2 Interpretation included</b>
<b>% Reduction (Schedule A)</b>
<b>Number of sample results</b>
<b>Number of sample results above WWDL ELV</b>
<b>Number of sample results above ELV with Condition 2 Interpretation</b>
<b>Annual Mean (for parameters where a mean ELV applies)</b>
<b>Overall Compliance (Pass/Fail)</b>

Significance of results

The WWTP was compliant with the ELV's set in the wastewater discharge licence.

## 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	293923, 306701	IE_NB_06F010900				
Downstream Monitoring Point	293999, 306647	IE_NB_06F010900	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	Good	2.14	0.0705	0.010225	0.83		
Downstream Monitoring Point	Good	2.32	0.14	0.227	1.15		
Downstream Monitoring Point #2							
Difference between Upstream and Downstream		0.18	0.0695	0.216775			
Difference between Upstream and Downstream #2							
EQS		2.6	0.075	0.14			
% of Eqs		6.92%	92.67%	154.84%			
% 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 compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.
- The receiving waters meet the EQS required.
- The discharge from the wastewater treatment plant has an observable negative impact on the water quality.
- A deterioration in water quality has been identified however it is not known if it is or is not caused by the WWTP.
- One sample result taken on the 12/06/17 at the downstream monitoring location showed elevated Ammonia and Ortho P levels, this has increased the average values downstream of the WWTP for the year. The results of a composite final effluent sample on the 12/06/17 were within licence ELV's. The final effluent Ammonia was 0.18mg/l N and the orthophosphate was 0.35mg/l P on the 12/06/17.

### **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

	<b>cBOD (kg/yr)</b>	<b>COD (kg/yr)</b>	<b>SS (kg/yr)</b>	<b>Total P (kg/yr)</b>	<b>Total N (kg/yr)</b>
Influent mass loading (kg/year)	21,806	68,276	17,401	341	2,692
Effluent mass emission (kg/year)	80	606	176	18	1,063
% Efficiency (% reduction of influent load)	100%	99%	99%	95%	61%

### 3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

<b>Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)</b>	409
<b>Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)</b>	1,226
<b>Hydraulic Capacity – Current loading (m3/day)</b>	159
<b>Hydraulic Capacity – Remaining (m3/day)</b>	1,067
<b>Organic Capacity - Design / As Constructed (PE)</b>	1,800
<b>Organic Capacity - Collected Load (PE)</b>	369
<b>Organic Capacity – Remaining (PE)</b>	1,431
<b>Will the capacity be exceeded in the next three years? (Yes / No)</b>	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**

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

There were no report complaints in 2017.

### **3.5 Reported Incidents Summary**

There were no reported incidents in 2017

### **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

A summary of the significance and operation is included below. The Stormwater Overflow Assessment was submitted previously in AER 2015

**Table 4.1.1 - SWO Identification and Inspection Summary Report**

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High/Med/Low)	Compliance with DoEHLG criteria	No. of times activated in 2017 (No. of events)	Total volume discharged in 2017 (m3)	Total volume discharged in 2017 (P.E.)	Estimated / Measured data
SW-2	293928, 306704	Yes	Low	Compliant	0	0	0	Measured

**Table 4.1.2 - SWO Identification and Inspection Summary Report**

How much sewage was discharged via SWOs in the agglomeration in the year (m3/yr)?	Unknown
How much sewage was discharged via SWOs in the agglomeration in the year (p.e.)?	Unknown
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2013?	0%
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	
The SWO assessment includes the requirements of relevant WWDL Schedules (Yes/No)	Yes
Have the EPA been advised of any additional SWOs / changes to Schedules A/C under Condition 1 ?	N/A

#### 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.

**Table 4.2.1 - Specified Improvement Programme Summary**

Specified Improvement Programmes	Licence Schedule	Licence Completion Date	Date Expired	Status of Works	% Construction Work Completed	Expected Completion Date	Comments
None		None	N/A	n/a			

A summary of the status of any improvements identified by under Condition 5.2 is included below.

**Table 4.2.2 - Improvement Programme Summary**

Improvement Identifier / Name	Improvement Description	Improvement Source	Progress (% complete)	Expected Completion Date	Comments
Process Control	Ensure minimum dial out alarms are provided for inlet forward feed pumps fail to run / aeration blower fail to run.	Improved Operational Control	0%		Currently dial out on forward feed pumps for trip and and high level.
Process Control	Analysis of Mixed Liquor Suspended Solids to improve process control	Improved Operational Control	100%		Operational tests carried out on an ongoing basis.
Monaghan Flow Monitoring and Sampling Programme	Flow monitoring and sampling	Improved Operational Control	100%		New Storm OverflowEvent Recorder Installed in 2017

**Table 4.2.3 - Sewer Integrity Risk Assessment Tool Summary**

<b>The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:</b>	<b>Risk Assessment Rating (High, Medium, Low)</b>	<b>Risk Assessment Score</b>	<b>Reference to relevant section of AER (e.g. Appendix 2 Section 4).</b>	<b>Specified improvements</b>	<b>Comment</b>
<b>Hydraulic Risk Assessment Score</b>	Medium	100	Appendix 7.3 AER 2016		
<b>Environmental Risk Assessment Score</b>	Low	120	Appendix 7.3 AER 2016		
<b>Structural Risk Assessment Score</b>	High	140	Appendix 7.3 AER 2016		
<b>Operation &amp; Maintenance Risk Assessment Score</b>	Low	20	Appendix 7.3 AER 2016		
<b>Overall Risk Score for the agglomeration</b>	Low	380	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	Required	No	No	AER 2011
Drinking Water Abstraction Point Risk Assessment	Required	No	No	AER 2014
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	Required	Yes	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	Yes	No further screening required
Drinking Water Abstraction Point Risk Assessment	Yes	Overall risk is Low
Shellfish Impact Assessment	No	
Pearl Mussel Report	No	
Toxicity/Leachate Management	No	
Toxicity of Final Effluent Report	No	
Habitats Impact Assessment	No	

## 5.1 Priority Substances Assessment

The Priority Substance Assessment Report was submitted previously in AER 2011. A summary of the significance and operation is included below.

**Table 5.1 - Priority Substance Assessment Summary Report**

<b>Does the assessment use the Desk Top Study Method or Screening Analysis to determine if the discharge contains the parameters in Appendix 1 of the EPA guidance?</b>	Destop Study
<b>Does the assessment include a review of Trade inputs to the works?</b>	Yes
<b>Does the assessment include a review of other inputs to the works?</b>	No
<b>Does the report include an assessment of the significance of the results where a listed material is present in the discharge? (e.g. impact on the relevant EQS standard for the receiving water)</b>	Yes
<b>Does the assessment identify that priority substances may be impacting the receiving water?</b>	No
<b>Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?</b>	No
<b>Recommendations</b>	No further screening required
<b>Status of any improvement measures required</b>	



## 5.2 Drinking Water Abstraction Point Risk Assessment

The Drinking Water Risk Assessment was submitted previously in AER 2014. A summary of the significance and operation is included below.

**Table 5.2 - Drinking Water Abstraction Point Risk Assessment Summary**

<b>Is a Drinking Water Abstraction Risk Assessment required in the 2017 AER (or outstanding from a previous AER)?</b>	No
<b>Does the Drinking Water Abstraction Risk Assessment identify whether any of the discharges in Schedule A of the licence pose a risk to a drinking water abstraction?</b>	No
<b>Does the assessment identify if any other discharge(s) from the works pose a risk to a drinking water abstraction (includes emergency overflows)?</b>	No
<b>What is the overall risk ranking applied by the licensee?</b>	
<b>Does the risk assessment consider the impacts of normal operation?</b>	Yes
<b>Does the risk assessment consider the impacts of abnormal operation (e.g. incidents /overflows)?</b>	Yes
<b>Does the risk assessment include control measures for each risk identified?</b>	Yes
<b>Does the risk assessment consider operational control measures?</b>	Yes
<b>Does the risk assessment include infrastructural control measures?</b>	Yes
<b>Recommendations</b>	Overall risk is Low
<b>Does the Improvement Programme for the agglomeration include control measures / corrective actions to eliminate / reduce priority substances identified as having an impact on receiving water quality?</b>	
<b>Status of any improvement measures required.</b>	N/A

A copy of the detailed assessment should be included as an appendix to the AER. Where relevant, findings from this assessment should be considered under the Programme of Improvements required under Condition 5.

## 5.7 Small Stream Risk Score Assessment Summary

N/a

## 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?	No
Ensure the following reports are included	

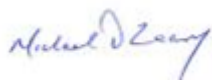
### Declaration by Irish Water

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: 20/02/2018

**Michael O'Leary**  
Acting Head of Environmental Regulation

## Section 7. Appendices

### Appendix 7.1 Statement of Measures / Improvement Programme

- |          |  |
|----------|--|
| 1. Issue | Scada system is old and programme can't be replaced      |
| Measure  | Replacement required                                     |
| Status   | 0% complete  |
|          |  |
| 2. Issue | Non return valves on the sand filter worn                |
| Measure  | Install 2 new non return valves at the sand filter pumps |
| Status   | 100% complete  |
|          |  |
| 3. Issue | Faulty outflow meter                                     |
| Measure  | Replacement outflow meter                                |
| Status   | 100% complete  |

## 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
11/01/2017	0.02	0.04	3.50	1.10		11.15	8.10	8.00
08/02/2017	0.00	0.04	2.10	1.00		12.31	8.00	5.50
08/03/2017	0.00	0.03	5.60	1.10		10.44	7.90	10.10
24/04/2017	0.01	0.18	1.60	0.50		11.16	8.10	11.70
16/05/2017	0.01	0.04	1.60	1.30		9.51	8.20	16.00
12/06/2017	0.01	0.04	2.80	0.50		10.01	8.10	15.70
12/07/2017	0.01	0.01	1.00	0.50		10.21	8.20	16.30
21/08/2017	0.02	0.07	1.00	0.50		9.19	8.10	14.90
13/09/2017	0.01	0.09	2.40	0.50		9.95	8.00	13.70
18/10/2017	0.00	0.22	1.80	0.50		10.14	8.00	11.70
08/11/2017	0.00	0.04	0.50	1.20		14.07	8.10	7.70
05/12/2017	0.02	0.04	1.80	1.30		10.62	7.90	10.00
<b>Mean</b>	0.01	0.07	2.14	0.83		10.73	8.06	11.78
<b>95%ile</b>	0.02	0.20	4.45	1.30		13.10	8.20	16.14

### 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
11/01/2017	0.01	0.04	1.90	1.30		10.60	8.10	7.60
08/02/2017	0.00	0.04	2.00	1.20		12.41	8.00	5.30
08/03/2017	0.01	0.03	1.70	1.20		10.69	7.90	9.20
24/04/2017	0.00	0.01	1.70	0.50		11.00	8.10	11.80
16/05/2017	0.02	0.05	1.80	1.70		9.72	8.30	16.60
12/06/2017	2.50	1.36	4.60	3.60		10.15	8.10	15.40
12/07/2017	0.04	0.02	6.20	1.10		10.31	8.10	16.50
21/08/2017	0.02	0.04	0.50	0.50		9.50	8.10	14.40
13/09/2017	0.02	0.05	2.30	0.50		10.06	8.00	13.10
18/10/2017	0.04	0.04	2.70	0.50		10.34	8.10	11.50
08/11/2017	0.04	0.05	0.50	1.30		13.51	8.10	7.70
05/12/2017	0.02	0.05	2.00	0.50		10.60	7.90	10.00
<b>Mean</b>	0.23	0.15	2.33	1.16		10.74	8.07	11.59
<b>95%ile</b>	1.15	0.64	5.32	2.56		12.91	8.19	16.55