

Annual Environmental Report 2016

Agglomeration Name:	Athboy
Licence Register No.	D0124-01



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Section 1. Executive Summary and Introduction to the 2016 AER

1.1 Summary Report on 2016

This Annual Environmental Report has been prepared for **D0124-01, Athboy**, in County **Meath**, in accordance with the requirements of the wastewater discharge licence for the agglomeration.

There are no specified assessments included as an appendix to this AER.

The agglomeration is served by a wastewater treatment plant with a Plant Capacity PE of 5,800. The treatment process includes the following:-

- Preliminary Treatment (Screening)
- Secondary Treatment (SBR)
- Nutrient Removal (Ferric Sulphate)

The final effluent from the Primary Discharge Point was compliant with the Emission Limit Values in 2016.

83,590 kgs of sludge was removed from the wastewater treatment plant in 2016 as dewatered sludge cake. Sludge was transferred to Rossmeen, Kells, Co. Meath.

There were no major capital or operational changes undertaken in 2016.

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

Monthly Influent Monitoring	BOD (mg / l)	COD (mg / l)	SS (mg / l)	TP (mg / l)	TN (mg / l)	Hydraulic Loading (m ³ /d)	Organic Loading (PE/Day)
Number of Samples	12	12	12	12	12		
Annual Max.	263.5	424	382	17.2	60.4	4,697	3,245
Annual Mean	79.38	166.16	159.08	2.79	25.16	1,294.21	1,893.83

Other inputs in the form of Domestic /Septic Tank Sludge are added to the WWTP after the influent monitoring point. Other inputs 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 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 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

2.2.1 Effluent Monitoring Summary	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Total P (mg/l)	Ortho P (mg/l)	Ammonia NH₃ (mg/l)
WWDL ELV (Schedule A) where applicable	20.00	125.00	35.00	1.00	0.60	1.10
ELV with Condition 2 Interpretation included	40.00	250.00	87.50	1.20	0.72	1.32
Interim % Reduction (Schedule A)						
Number of sample results	12	12	12	12	12	12
Number of sample results above WWDL ELV	0	0	0	0	0	0
Number of sample results above ELV with Condition 2 Interpretation	0	0	0	0	0	0
Annual Mean (for parameters where a mean ELV applies)	4.08	14.48	2.16	0.23	0.15	0.19
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	Pass	Pass	Pass

Significance of results

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

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

2.3.1. 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	Current WFD Status
Upstream monitoring point	271818E 264149N	aSW-1U	n/a	n/a	n/a	n/a	Moderate
Downstream monitoring point	272512E 263247N	aSW-1D	N	Y	N	N	Moderate

The Irish Water results for the upstream and downstream monitoring are included in Appendix 7.2.

Significance of results

- The WWTP was compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.
- The discharge from the wastewater treatment plant does not have an observable negative impact on the water quality.
- The discharge from the WWTP does not have an observable negative impact on the Water Framework Directive status.
- In terms of the drinking water abstractions downstream of the discharge there is no evidence to suggest that discharge from Athboy is having an impact on these abstractions.

2.4 Data collection and reporting requirements under the UWWTD

The electronic submission of data was completed on 15/02/2017.

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

A PRTR is not required as the PE is < 100,000.

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)	41,475	86,813	83,115	1,455	13,143
Effluent mass emission (kg/year)	2,150	6,228	1,178	141	3,630
% Efficiency (% reduction of influent load)	95%	93%	99%	90%	72%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m ³ /day)	1,305
Hydraulic Capacity – Design / As Constructed (peak flow) (m ³ /day)	3,915
Hydraulic Capacity – Current loading (m ³ /day)	1,294.211
Hydraulic Capacity – Remaining (m ³ /day)	2,620.789
Organic Capacity - Design / As Constructed (PE)	5,800
Organic Capacity - Current loading (PE)	1,894
Organic Capacity – Remaining (PE)	3,906
Will the capacity be exceeded in the next three years? (Yes / No)	No
Is an upgrade or expansion of the WWTP proposed? (i.e. if on Minor Programme or CIP) (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	Unknown	Estimated
Load collected in the sewer network but discharges without treatment (includes SWO, EO, and any discharges that are not treated)	Unknown	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
None			

3.5 Reported Incidents Summary

A summary of reported incidents is included below.

Table 3.5.1 - Summary of Incidents

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)
None								

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 2016	0
Number of Incidents reported to the EPA via EDEN in 2016	0
Explanation of any discrepancies between the two numbers above	N/A

3.6 Sludge / Other inputs to the WWTP

Other inputs to the waste water treatment plant are summarised in Table 3.6 below.

Table 3.6 - Other Inputs

Input Type	m ³ /year	P.E. (Year)	% of load to WWTP	Included in Influent Monitoring? (Y/N)	Is there a leachate/sludge acceptance procedure for the WWTP? (Y/N)	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
Domestic /Septic Tank Sludge	4,930	60 **	1.04%*	No	Yes	Yes
Industrial / Commercial Sludge	0	0	0	No	No	No
Landfill Leachate (delivered by tanker)	0	0	0	No	No	No
Landfill Leachate (delivered by sewer network)	0	0	0	No	No	No
Other (specify)	0	0	0	No	No	No

*based on Hydraulic Capacity – Current loading (m³/year)

** based on 4,930/0.225*365

Section 4. Infrastructure Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

The Storm Water Overflow Identification & Inspection report is included in Appendix 7.3 of 2015 AER. A summary of the significance and operation is included below.

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 2016 (No. of events)	Total volume discharged in 2016 (m ³)	Total volume discharged in 2016 (P.E.)	Estimated / Measured data
SW-2	272048, 263611	Yes	Low	Compliant	2	10,556	1,847 *	Estimated
Athboy Pumping Station	272048, 263611	Yes	Low	Compliant	Unknown	Unknown	Unknown	Estimated

* flow by 175 l/p/d.

Table 4.1.2 - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m ³ /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 2016?	Unknown
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	N/A
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.

No Improvement Programme Report is appended to this 2016 AER.

The Improvement Programme summary is tabled below.

Table 4.2.1 - Specified Improvement Programme Summary

Specified Improvement Programmes	Licence Schedule	Licence Completion Date	Date Expired	Status of Works	% Constructi on Work Completed	Licensee Timeframe for Completing the Work	Comments
Wastewater Treatment plant construction and ancillary works	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed
Athboy Pumping Station (main)	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed
Rathcairn Pumping Station RA1	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed
Rathcairn Pumping Station RA2 (main)	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed
Rathcairn Pumping Station RA3	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed
Rathcairn Pumping	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed

Station RA4							
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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
None					

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	Medium	67	2014 AER Appendix 7.6	N/A	
Environmental Risk Assessment Score	Low	130	2014 AER Appendix 7.6	N/A	
Structural Risk Assessment Score	Medium	65	2014 AER Appendix 7.6	N/A	
Operation & Maintenance Risk Assessment Score	Low	30	2014 AER Appendix 7.6	N/A	
Overall Risk Score for the agglomeration	Low	292	2014 AER Appendix 7.6	N/A	

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Never required by condition 5 in Licence	Required in this AER or outstanding from previous AER	Included in this AER / Remains outstanding	Reference to previous AER containing report or relevant section of this AER
Priority Substances Assessment	Required	No	No	Appendix 7.4 of the 2015 AER
Drinking Water Abstraction Point Risk Assessment	Required	No	No	2011 AER
Shellfish Impact Assessment	Not Required	No	No	N/A
Pearl Mussel Report	Not Required	No	No	N/A
Toxicity/Leachate Management	Not Required	No	No	N/A
Toxicity of Final Effluent Report	Not Required	No	No	N/A
Small Stream Risk Score Assessment	Not Required	No	No	N/A
Habitats Impact Assessment	Not Required	No	No	N/A

Licence Specific Reports Summary of Findings

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

5.1 Priority Substances Assessment

The Priority Substances Assessment report is included in Appendix 7.4 of the 2015 AER. A summary of the findings of this report is included below.

	Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.
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	Desktop Study
Does the assessment include a review of Trade inputs to the works?	No
Does the assessment include a review of other inputs to the works?	No
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)	Yes
Does the assessment identify that priority substances may be impacting the receiving water?	No
Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?	No

5.2 Drinking Water Abstraction Point Risk Assessment

The Drinking Water Abstraction Point Risk Assessment report is included in 2011 AER. A summary of the findings of this report is included below.

Table 5.2 - Drinking Water Abstraction Point Risk Assessment Summary

	<i>Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.</i>
Is a Drinking Water Abstraction Risk Assessment required in the AER (or outstanding from a previous AER)	No
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	No
Does the assessment identify if any other discharge(s) from the works pose a risk to a drinking water abstraction (includes emergency overflows)	No
What is the overall risk ranking applied by the licensee	L
Does the risk assessment consider the impacts of normal operation	Yes
Does the risk assessment consider the impacts of abnormal operation (e.g. incidents /overflows)	Yes

Does the risk assessment include control measures for each risk identified	Yes
Does the risk assessment consider operational control measures e.g.: waste water incident notification to drinking water abstraction operator	Yes
Does the risk assessment include infrastructural control measures	Yes
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?	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?	N/A

Declaration by Irish Water

The AER contains the following:

- Introduction and background to 2016 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: 02/02/2017

Elizabeth Arnett
Head of Corporate Affairs and Environmental Regulation

Section 7. Appendices

Appendix 7.1 Statement of Measures / Improvement Programme

No additional measures have been taken in 2016 in relation to the prevention of environmental damage. The need for measures to prevent environmental damage is reviewed on an annual basis.

Appendix 7.2

Ambient Monitoring Summary

Athboy Ambient Monitoring		NH ₄ (mg/l)	Ortho P (mg/l)	D.O (% Sat)	D.O (mg/l)	BOD (mg/l)	Total N (mg/l)	pH
14/04/2016	U/S	0.033	0.018	103.00%	11.9	1.12	1.68	8.7
06/07/2016	U/S	0.068	0.042	81.20%	8.35	1.43	1.71	8.18
25/08/2016	U/S	0.038	0.05	115.00%	10.21	1.7	1.62	7.7
07/09/2016	U/S	0.013	0.027	87.80%	8.51	0.95	1.72	7.81
12/09/2016	U/S	0.005	0.02	87.30%	8.53	0.67	1.78	7.88
19/09/2016	U/S	0.007	0.024	94.90%	10.07	1.06	1.93	7.72
17/11/2016	U/S	0.008	0.021	89.00%	10.3	1.13	2.01	8.5
02/12/2016	U/S	0.023	0.032	92.00%	11.5	1.69	2.1	8.81
12/12/2016	U/S	0.025	0.057	101.80%	10.6	0.73	2.85	7.94
13/12/2016	U/S	0.021	0.138	102.20%	9.5	0.73	2.05	7.91
Mean		0.0241	0.0429	0.9542	9.947	1.121	1.945	8.115
95%ile		0.0545	0.1016	1.096	11.72	1.6955	2.5125	8.7605

Athboy Ambient Monitoring		NH ₄ (mg/l)	Ortho P (mg/l)	D.O (% Sat)	D.O (mg/l)	BOD (mg/l)	Total N (mg/l)	pH
14/04/2016	D/S	0.029	0.019	103.00%	12	1.05	1.7	8.8
06/07/2016	D/S	0.036	0.038	90.40%	9.34	1.25	1.66	8.14
25/08/2016	D/S	0.025	0.045	121.30%	10.64	1.46	1.69	7.72
07/09/2016	D/S	0.009	0.028	105.40%	10.2	1.23	1.74	7.78
12/09/2016	D/S	0.009	0.027	97.90%	9.57	0.64	1.74	7.91
19/09/2016	D/S	0.04	0.026	103.90%	11.1	1.1	2.36	7.83
17/11/2016	D/S	0.14	0.036	95.00%	11	1.41	2.3	7.92
02/12/2016	D/S	0.015	0.033	100.00%	12.3	1.52	2.03	8.1
12/12/2016	D/S	0.09	0.058	103.00%	10.9	0.73	1.82	7.95
13/12/2016	D/S	0.166	0.141	106.00%	9.4	0.91	2.19	7.91
Mean		0.0559	0.0451	1.0259	10.645	1.13	1.923	8.006
95%ile		0.1543	0.1037	1.1442	12.165	1.493	2.333	8.503