Annual Environmental Report 2017

Agglomeration Name:	**Clones**
Licence Register No.	**D0206-01**

Contents

Section 1. Executive Summary and Introduction to the 2017 AER

1.1 Summary Report on 2017

This Annual Environmental Report has been prepared for **D0206-01, Clones,** 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 4500. The treatment process includes the following:-

- Preliminary Treatment (Screening)
- Primary Treatment (Settlement)
- Secondary Treatment (Percolation Filters)
- Nutrient Removal (Chemical Dosing for P Removal)

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

15,806,000kgs total weight liquid sludge was removed from the wastewater treatment plant in 2017.
Sludge was transferred to 11,246,000 m3 was transferred to Monaghan WWTP
4,560,000m3 was sent to Sludge Drying Beds (Reed Beds)onsite.

The following improvement works were undertaken in 2017:-

1. *Issue* *Clones WWTP Sludge Handling*
   Measure *Supply and fit a sludge dewatering tank*
   Status *Under consideration for inclusion on IW capital programme*

2. *Issue* *Improvement works required to comply with ELV's in Schedule A*
   Measure *Clones WWTP final Clarifier*
   Status *Under consideration for inclusion on IW capital programme*

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.	609	1003	868	29.6	628.9	6768
Annual Mean	205.43	554.51	226.65	6.44	99.86	1901.05

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 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.

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)	pH (Range)	Comment
WWDL ELV (Schedule A) where applicable	25.00	125.00	35.00	6 to 9	Note ELV of 0.075mg/l P will apply from the 31/12/19; ELV of 0.1mg/l N will apply from the 31/12/19; ELV of 2mg/l will apply for BOD from the 31/12/19
ELV with Condition 2 Interpretation included	50.00	250.00	87.50	No allowable exceedances	
% Reduction (Schedule A)					
Number of sample results	12	12	12	12	
Number of sample results above WWDL ELV	1	0	1	0	
Number of sample results above ELV with Condition 2 Interpretation	0	0	0	0	
Annual Mean (for parameters where a mean ELV applies)					
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	Pass	

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	250444, 325380	IE_NW_36F010500				
Downstream Monitoring Point	250672, 325280	IE_NW_36F010500	No	No	No	No

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	Moderate	2.13	0.066	0.118			
Downstream Monitoring Point	Moderate	4.08	0.34	1.59			
Difference between Upstream and Downstream		1.95	0.274	1.472			
EQS		2.6	0.075	0.14			
% of Eqs		75.00%	365.33%	1051.43%			

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 discharge from the works may be giving rise to a breach of EQS in the receiving water.

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

A PRTR is not required as the PE is < 100000

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)	166,545	449,541	183,748	5,220	80,956
Effluent mass emission (kg/year)	3,342	14,982	3,943	569	5,276
% Efficiency (% reduction of influent load)	98%	97%	98%	89%	93%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)	1,021
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)	3,064
Hydraulic Capacity – Current loading (m3/day)	1,901
Hydraulic Capacity – Remaining (m3/day)	1,163
Organic Capacity - Design / As Constructed (PE)	4,500
Organic Capacity - Collected Load (PE)	2,980
Organic Capacity – Remaining (PE)	1,520
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	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**
5	Investigation Sewage Flooding - Below Ground Waste Water	5	5
1	Complaint from IFI re: discharge from Clones WWTP	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)
INCI013632 , Emergency Overflow	Uncontrolled release	EO caused by pump failure	1	No	Pumps reset. Contractor called in to fix overheat alarm settings on the influent pumps	IFI EPA	Yes	Yes

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	1
Number of Incidents reported to the EPA via EDEN in 2017	1
Explanation of any discrepancies between the two numbers above	N/A

3.6 Sludge / Other inputs to the WWTP

There were no sludge/other inputs 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 Storm Water Overflow significance and operation is included below. The Stormwater Overflow Assessment was submitted previously in AER 2016.

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
SW002	250562E 325312N	Yes	Low	Non-Compliant	59	37102	451	Measured
SW003	250510E 325336N	Yes	Low	Non-Compliant	Unknown	Unknown	Unknown	Estimated
SW004	250356E 325962N	Yes	Low	Non-Compliant	Unknown	Unknown	Unknown	Estimated

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 2017?	5% via SWO002
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO assessment includes the requirements of relevant WWDL Schedules (Yes/No)	Yes
Have the EPA been advised of any additional SWOs / changes to	N/A

Schedules A/C under Condition 1 ?	

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 and addresses the **Specified Improvement Programmes** as detailed in Schedules A3 and C of the WWDL.

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
Complete improvements to comply with ELVs specified in Schedule A. Implement, in accordance with Condition 5.6.1, either (a) improvements to the existing waste water works to achieve compliance with the emission limit values specified in Schedule A.1: Primary Waste Water Discharge and	C	31/12/2019	No	Not started			Improvement work programme will be reviewed by IW to assess works required to comply with licence conditions on a prioritised basis.

Monitoring of this licence, or (b) an alternative primary discharge point, or (c) connection to another agglomeration.							
Improvement works to ensure compliance with Condition 1.7	C	31/12/2019	No	Not started			Improvement work programme will be reviewed by IW to assess works required to comply with licence conditions on a prioritised basis.

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
10010055	D0206 Clones WWTP Sludge tank	Improved Operational Control	0%		
10007268	Flow Monitoring and Sampling MN	Improved Operational Control	100%		Influent sampler and 2 flow meters installed in 2016
Ferric dosing	Provision of ferric dosing onsite to reduce ortho P Levels in the final effluent	Improved Operational Control	100%		Ferric dosing installed in 2016.
Upgrade clarifier	Upgrade of Final Clarifier	Improved Operational Control	0%		

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	127	2016		
Environmental Risk Assessment Score	Low	215	2016		
Structural Risk Assessment Score	Medium	75	2016		
Operation & Maintenance Risk Assessment Score	Low	75	2016		
Overall Risk Score for the agglomeration	High	492	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 2016
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	Yes	

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	No	
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 2016. A summary of the significance and operation is included below.

Table 5.1 - Priority Substance Assessment Summary Report

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?	Screening Analysis
Does the assessment include a review of Trade inputs to the works?	Yes
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)	
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
Recommendations	No further screening required
Status of any improvement measures required	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?	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:.28/02/2018

Michael O'Leary
Acting Head of Environmental Regulation

Section 7. Appendices

Appendix 7.1 Statement of Measures / Improvement Programme

1. Issue Clones WWTP Sludge Handling
   Measure Supply and fit a sludge dewatering tank
   Status Under consideration for inclusion on IW capital programme

2. Issue Improvement works required to comply with ELV's in Schedule A
   Measure Clones WWTP final Clarifier
   Status Under consideration for inclusion on IW capital programme

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)	
10/01/2017	0.12	0.04	2.00			8.71	7.80	9.00
20/02/2017	0.05	0.08	1.80			8.41	8.00	9.00
14/03/2017	0.04	0.06	3.70			8.63	8.10	8.00
18/04/2017	0.16	0.09	1.80			7.08	8.20	2.50
17/05/2017	0.12	0.06	2.50			8.72	8.10	31.00
19/06/2017	0.19	0.08	1.30			6.95	8.00	11.00
17/07/2017	0.26	0.07	1.90			6.49	7.90	5.00
14/08/2017	0.30	0.10	1.90			7.30	7.90	2.50
18/09/2017	0.04	0.04	0.50			9.22	7.70	2.50
18/10/2017	0.04	0.08	4.90			9.41	7.80	2.50
13/11/2017	0.00	0.03	1.50			11.89	7.80	37.00
06/12/2017	0.08	0.07	1.80			10.51	7.90	
Mean	0.12	0.07	2.13			8.61	7.93	10.91
95%ile	0.28	0.09	4.24			11.13	8.15	34.00

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)	
10/01/2017	0.26	0.16	4.80			8.24	7.70	11.00
20/02/2017	0.22	0.11	1.60			8.19	8.10	8.00
14/03/2017	0.24	0.09	2.10			8.61	8.10	9.00
18/04/2017	2.40	0.29	2.70			6.30	8.10	7.00
17/05/2017	4.70	0.85				6.60	8.00	11.00
19/06/2017	1.10	0.69	5.00			2.78	7.80	55.00
17/07/2017	9.10	0.94	14.00			2.60	7.70	10.00
14/08/2017	0.16	0.30	3.90			3.99	7.80	10.00
18/09/2017	0.27	0.20	3.30			8.00	7.70	2.50
18/10/2017	0.29	0.25	3.10			7.62	7.90	2.50
13/11/2017	0.33	0.13	2.10			10.68	7.80	2.50
06/12/2017	0.12	0.12	2.30			10.08	8.00	19.00
Mean	1.60	0.34	4.08			6.97	7.89	12.29
95%ile	6.68	0.89	9.50			10.35	8.10	35.20