

Annual Environmental Report

2018



Ballyhaunis

D0069-01

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 BALLYHAUNIS WWTP
- 1.3 ELV OVERVIEW
 - 1.3.1 BALLYHAUNIS WWTP
- 1.4 SLUDGE REMOVAL

2 MONITORING REPORTS SUMMARY

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

3 OPERATIONAL REPORTS SUMMARY

- 3.1 TREATMENT EFFICIENCY REPORT
 - 3.1.1 TREATMENT EFFICIENCY REPORT SUMMARY - BALLYHAUNIS 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 D0069-01, Ballyhaunis, in Mayo 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
---------------------	-----------------

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant Ballyhaunis WWTP with a Plant Capacity PE of 4000. The treatment process includes the following:

1.2.1 Ballyhaunis WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Screening and Grit Removal
Primary Treatment	No	
Secondary Treatment	Yes	Activated Sludge
Nutrient Removal	Yes	Ferric Dosing
Tertiary Treatment	No	

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 Ballyhaunis WWTP

Compliance Status	
Were all parameters compliant for Ballyhaunis WWTP treatment plant	Yes
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
Ballyhaunis WWTP	Dried Sludge	54.19	Weight (Tonnes)	13.7	Biocore, Tibohine,Ballaghaderreen,Co.Roscommon
Ballyhaunis WWTP	Liquid Sludge	336	Volume (m3)		Knock WWTP
Ballyhaunis WWTP	Dried Sludge	23.41	Weight (Tonnes)	13.7	Laragan,Elphin,Co.Roscommon

Annual Statement of Measures

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 - Ballyhaunis WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	428	173.97
Suspended Solids mg/l	12	310	126.81
COD-Cr mg/l	12	1201	405.72
Hydraulic Capacity	0	3249	1070

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. 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.

2.2 Discharges from the agglomeration

2.2.1 Effluent Monitoring Summary - Ballyhaunis 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 exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Orthophosphate (MRP) filtered (As P) mg/l	0	0	0	1	0	0	0.06	Pass
Suspended Solids mg/l	25	62.5	0	12	1	0	13.26	Pass
pH pH units	0	0	0	12	0	0	7.84	Pass
Ammonia-Total (as N) mg/l	0	0	0	12	0	0	4.2	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.6	0.72	0	12	0	0	0.26	Pass
COD-Cr mg/l	125	250	0	12	0	0	30.16	Pass
Visual Inspection Descriptive	0	0	0	6	0	0	0	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	20	40	0	12	1	0	4.11	Pass

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):

Not Applicable

Significance of Results:

The WWTP is compliant with the ELV's set in the Wastewater Discharge Licence.

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 - Ballyhaunis 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*	279460, 149654	TPEFF2200D0069SW001	No	No	No	No	Poor
Upstream	149294, 278866	TPEFF2200D0069SW001	No	No	No	No	Poor
Downstream*	278134, 148890	TPEFF2200D0069SW001	No	No	No	No	Poor
Downstream	149263, 278776	TPEFF2200D0069SW001	No	No	No	No	Poor

*Note: Location of ambient monitoring stations were altered to these as of June 2018.

2.3.2 Ambient Monitoring Parameter Summary - Ballyhaunis 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
Conductivity @25°C µS/cm	RS30D010100	558.8	RS30D010200	673.6		
Dissolved Oxygen mg/l	RS30D010100	10.46	RS30D010160	9.83		
Dissolved Oxygen % Saturation	RS30D010100	92.8	RS30D010200	93.8		
Nitrite (as N) µg/l	RS30D010100	2.7	RS30D010200	20.75		
Dissolved Oxygen % Saturation	RS30D010150	90.54	RS30D010160	88.71		
Dissolved Oxygen mg/l	RS30D010150	9.83	RS30D010200	10.4		
Dissolved Oxygen mg/l	RS30D010100	10.46	RS30D010200	10.4		
Chloride mg/l	RS30D010100	17.2	RS30D010200	39.82		
BOD - 5 days (Total) mg/l	RS30D010150	0.63	RS30D010200	1.16	2.6	20.6
Ammonia-Total (as N) mg/l	RS30D010150	0.03	RS30D010200	0.25	0.14	151
BOD - 5 days (Total) mg/l	RS30D010100	0.78	RS30D010160	0.97	2.6	7.2
Orthophosphate (MRP)	RS30D010150	0.01	RS30D010200			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
filtered (As P) mg/l						
pH pH units	RS30D010150	7.59	RS30D010200	7.6		
Nitrite (as N) µg/l	RS30D010100	2.7	RS30D010160			
Total Oxidised Nitrogen (as N) mg/l	RS30D010100	0.74	RS30D010200	1.03		
ortho-Phosphate (as P) - unspecified mg/l	RS30D010100	0.01	RS30D010160	0.01	0.075	9.5
True Colour mg/litre Pt Co	RS30D010100	67.4	RS30D010200	48.6		
Ammonia-Total (as N) mg/l	RS30D010100	0.03	RS30D010200	0.25	0.14	154.6
Suspended Solids mg/l	RS30D010150	8.35	RS30D010160	16		
Alkalinity-total (as CaCO3) mg/l	RS30D010100	263.6	RS30D010160			
Temperature °C	RS30D010100	9.94	RS30D010200	10.48		
Nitrate (as N) mg/l	RS30D010100	0.74	RS30D010160			
ortho-Phosphate (as P) - unspecified mg/l	RS30D010100	0.01	RS30D010200	0.02	0.075	24.3
pH pH units	RS30D010100	7.76	RS30D010160	7.49		

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
ortho-Phosphate (as P) - unspecified mg/l	RS30D010150	0.01	RS30D010200	0.02	0.075	20.8
pH pH units	RS30D010150	7.59	RS30D010160	7.49		
Total Oxidised Nitrogen (as N) mg/l	RS30D010100	0.74	RS30D010160			
Alkalinity-total (as CaCO ₃) mg/l	RS30D010100	263.6	RS30D010200	277.2		
pH pH units	RS30D010100	7.76	RS30D010200	7.6		
Dissolved Oxygen % Saturation	RS30D010150	90.54	RS30D010200	93.8		
ortho-Phosphate (as P) - unspecified mg/l	RS30D010150	0.01	RS30D010160	0.01	0.075	6.1
True Colour mg/litre Pt Co	RS30D010100	67.4	RS30D010160			
Total Hardness (as CaCO ₃) mg/l	RS30D010100	306.4	RS30D010200	327		
Conductivity @25°C µS/cm	RS30D010100	558.8	RS30D010160			
Ammonia-Total (as N) mg/l	RS30D010100	0.03	RS30D010160	0.3	0.14	189.8
Chloride mg/l	RS30D010100	17.2	RS30D010160			

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
BOD - 5 days (Total) mg/l	RS30D010150	0.63	RS30D010160	0.97	2.6	13.1
BOD - 5 days (Total) mg/l	RS30D010100	0.78	RS30D010200	1.16	2.6	14.6
Dissolved Oxygen % Saturation	RS30D010100	92.8	RS30D010160	88.71		
Ammonia-Total (as N) mg/l	RS30D010150	0.03	RS30D010160	0.3	0.14	186.3
Temperature °C	RS30D010100	9.94	RS30D010160	12.22		
Orthophosphate (MRP) filtered (As P) mg/l	RS30D010150	0.01	RS30D010160	0.02		
Dissolved Oxygen mg/l	RS30D010150	9.83	RS30D010160	9.83		
Total Hardness (as CaCO3) mg/l	RS30D010100	306.4	RS30D010160			
Temperature °C	RS30D010150	12.59	RS30D010160	12.22		
Suspended Solids mg/l	RS30D010150	8.35	RS30D010200			
Nitrate (as N) mg/l	RS30D010100	0.74	RS30D010200	1.01		
Temperature °C	RS30D010150	12.59	RS30D010200	10.48		

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 discharge from the wastewater treatment plant does not have an observable negative impact on the water quality.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

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 - Ballyhaunis WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
SS	48938.5	5928.04	87.89	
TN				
COD	156576.24	13484.89	91.39	
TP				
cBOD	67139.5	1839.57	97.26	

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.

Ballyhaunis WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	3000

Ballyhaunis WWTP	
DWF to the Treatment Plant (m3/day)	1000
Current Hydraulic Loading - annual max (m3/day)	3249
Average Hydraulic loading to the Treatment Plant (m3/day)	1070
Organic Capacity (PE) - As Constructed	4000
Organic Capacity (PE) - Collected Load (peak week)	3009
Organic Capacity (PE) - Remaining	991
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	Plant or equipment breakdown at WWTP	1	No	No
Uncontrolled release	Plant or equipment maintenance at WWTP	1	No	Yes
Other	Plant or equipment maintenance at WWTP	1	No	No
Other	Plant or equipment breakdown at WWTP	1	No	Yes
Other	Plant or equipment breakdown at WWTP	1	No	Yes

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	5
Number of Incidents reported to the EPA via EDEN in 2018	5
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)?	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP?(Y/N)
Other	10	Volume (m3)		0.01	No	Yes	No

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
SW005	149312, 278831	Yes	Low	Non-compliant			Not Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	
Is each SWO identified as non meeting DoEHLG Guidance included in the Programme of Improvements?	No
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes
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
Improvement works may be required to increase the organic and hydraulic treatment capacity of the plant to ensure compliance with Condition 1.7	C	31/12/2019	No	Not Started		
The plant will require improvement works to ensure compliance with the emission limit values as set out in Schedule A: Discharges & Discharge Monitoring	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 Improvements Programme 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	2015	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	N/A

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

Signed: Date: 04/03/2019

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