Annual Environmental Report

2018

Killybegs

D0011-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0011-01, Killybegs, in Donegal in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports where relevant are included as an appendix to the AER.

1.1 TREATMENT SUMMARY

The agglomeration is served by a wastewater treatment plant(s)

- KILLYBEGS WWTP with a Plant Capacity PE of 4200

The treatment process includes the following:

1.1.1 KILLYBEGS WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	No	N/A
Primary Treatment	Yes	Grit, Screening (Rag) & FOG Removal
Secondary Treatment	Yes	SBR Process
Nutrient Removal	No	N/A
Tertiary Treatment	Yes	UV Treatment of Final Effluent

1.2 ELV OVERVIEW

SW100 is the discharge point reference for the municipal discharge. SW001 is the combined discharge between the treated municipal and industrial discharge (SW99) located at the outfall in the sea. 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.

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF0600D0011SW100	KILLYBEGS WWTP	Municipal Discharge	Non-Compliant	New plant was not operational until February 2018. Plant is compliant since April 2018.

1.3 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
There is no Licence Specific Report included in this AER	N/A

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 KILLYBEGS WWTP - COMBINED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - KILLYBEGS WWTP

A summary of influent monitoring for the treatment plant is presented below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

Parameters	Number of Samples	Annual Max	Annual Mean
Suspended Solids mg/l	18	1140	208.5
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	18	740	144.17
Total Nitrogen mg/l	18	50.6	24.32
COD-Cr mg/l	18	984	285.39
Total Phosphorus (as P) mg/l	18	7	3.59
Hydraulic Capacity	N/A	0	1008

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional ‘Operational Performance Summary’. 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.

2.1.2 EFFLUENT MONITORING SUMMARY – MUNICIPAL DISCHARGE - TPEFF0600D0011SW100

This is the effluent monitoring summary from the municipal discharge location, SW100. Following this, the discharge is combined with SW99, industrial discharge, and subsequently discharges into the sea at location SW001 i.e. end of pipe. SW001 is the combined discharge between the treated municipal and industrial discharge.

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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Nitrite (as N) mg/l	0	0	0	23	0	0	0.054	
Total Phosphorus (as P) mg/l	0	0	0	23	0	0	1.26	
Dissolved Inorganic Nitrogen (as N) mg/l	0	0	0	19	0	0	2.25	
Suspended Solids mg/l	35	87.5	0	25	7	4	8	Fail
Temperature °C	0	0	0	24	0	0	4.8	
pH pH units	0	0	0	25	0	0	7.2	
Total Nitrogen mg/l	0	0	0	25	0	0	4.24	
COD-Cr mg/l	125	250	0	25	4	3	49	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	25	6	4	2	Fail

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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Conductivity 20 C µS/cm	0	0	0	25	0	0	2850	
Nitrate (as N) mg/l	0	0	0	21	0	0	1.45	
Fats, Oils & Greases mg/l	0	0	0	7	0	0	12	
Ammonia-Total (as N) mg/l	0	0	0	22	0	0	0.44	
Orthophosphate (MRP) filtered (As P) mg/l	0	0	0	23	0	0	1.25	

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):

New plant was not operational until February 2018. Municipal plant has been compliant since April 2018.

Significance of Results:

The WWTP is not compliant with the ELV's set in the Wastewater Discharge Licence. However, the plant has been compliant since April, 2018.

2.1.3 EFFLUENT MONITORING SUMMARY – COMBINED DISCHARGE - TPEFF0600D0011SW001

The following table outlines the annual mean discharge for each given parameter at the end of the pipe (SW001) following the municipal discharge (SW100) combining with the industrial discharge (SW99).

Parameter	Number of sample results	Annual Mean
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	17	372
Dissolved Inorganic Nitrogen (as N) mg/l	11	25.32
Ammonia-Total (as N) mg/l	16	26.95
Temperature °C	17	10.0
pH pH units	17	7.00
Total Phosphorus (as P) mg/l	16	4.24
Orthophosphate (MRP) filtered (As P) mg/l	16	2.38
Conductivity 20 C µS/cm	17	11490
Total Nitrogen mg/l	16	84.55
Nitrate (as N) mg/l	16	0.69
Nitrite (as N) mg/l	15	0.141
COD-Cr mg/l	16	887.5
Suspended Solids mg/l	16	143

2.1.4 AMBIENT MONITORING SUMMARY FOR THE COMBINED DISCHARGE TPEFF0600D0011SW001

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.

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	171991, 373947	TPEFF0600D0011SW001	No	No	No	No	Good
Downstream	170856, 373297	TPEFF0600D0011SW001	No	No	No	No	Good
Downstream	171155, 373418	TPEFF0600D0011SW001	No	No	No	No	Good

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1**

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results meet the required EQS.

The discharge from the wastewater treatment plant do not have an observable impact on the water quality.

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

Other Potential cause of deterioration in water quality relevant to this area are: Final effluent from municipal discharge is mixed with Industrial Stream prior to discharge at SW001.

2.1.5 OPERATIONAL PERFORMANCE SUMMARY

2.1.5.1 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:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
COD	105000.28	32160.40	81	
cBOD	53041.80	10122.14	69	
SS	76711.32	8895.78	88	

Note: The above data is based on sample results for the number of dates reported

2.1.5.2 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.

KILLYBEGS WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	3153.6
DWF to the Treatment Plant (m3/day)	1050
Current Hydraulic Loading - annual max (m3/day)	4426
Average Hydraulic loading to the Treatment Plant (m3/day)	1008
Organic Capacity (PE) - As Constructed	4200

KILLYBEGS WWTP	
Organic Capacity (PE) - Collected Load (peak week)	1991
Organic Capacity (PE) – Remaining	2209
Will the capacity be exceeded in the next three years? (Yes/No)	No

2.1.6 SLUDGE / OTHER INPUTS

'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)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

2.1.7 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
KILLYBEGS WWTP	Dried Sludge	2161	Weight (Tonnes)	35	Donegal Town Sludge Hub

3 COMPLAINTS AND INCIDENTS

3.1 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.			

3.2 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.

3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Other	WWTP upgrade required to meet ELV	3	Yes	Yes
Other	Shock load to WWTP	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2018	4
Number of Incidents reported to the EPA via EDEN in 2018	4
Explanation of any discrepancies between the two numbers above	N/A

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:

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
SW2	171767, 675722	Yes	Medium	Non-compliant	Unknown	Unknown	Not Monitored
SW6	171346, 376461	Yes	Low	Non-compliant	Unknown	Unknown	Not Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	No
The SWO Assessment included the requirements of relevant of WWDL schedules?	No
Have the EPA been advised of any additional SWOs / changes 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)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0011-SIP:01	Discharge to be discontinued: SW4 Manhole 2106	A	31/12/2011	Yes	Works Completed	N/A	N/A
D0011-SIP:02	Discharge to be discontinued: SW6 pump station No.1, St Catherine's Road	A	31/12/2011	Yes	Works Completed	N/A	N/A
D0011-SIP:03	Discharge to be discontinued: SW7 Pump station No.2, Shore Road	A	31/12/2011	Yes	Works Completed	N/A	N/A
D0011-SIP:04	Discharge to be discontinued: SW1 Rough Point (new harbour development)	A	31/12/2011	Yes	Works Completed	N/A	N/A
D0011-SIP:05	Discharge to be discontinued: SW3 Manhole 6605	A	31/12/2011	Yes	Works Completed	N/A	N/A
D0011-SIP:06	Discharge to be discontinued: SW5 Manhole 3903	A	31/12/2011	Yes	Works Completed	N/A	N/A

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0011-SIP:07	Elimination of all other SWOs on the collection network	C	31/12/2011	Yes	Works Completed	N/A	N/A
D0011-SIP:08	Municipal WWTP and ancillary work	C	31/12/2011	Yes	Works Completed	N/A	N/A
D0011-SIP:09	New main pumping station (industrial & storm overflow pumping plant)	C	31/12/2010	Yes	Works Completed	N/A	N/A
D0011-SIP:10	New marine outfall at Killybegs outer harbour	C	31/12/2010	Yes	Works Completed	N/A	N/A
D0011-SIP:11	Provision of new storm water overflow (SW8) from main new pumping station in accordance with DoE SWO criteria	C	31/12/2010	Yes	Works Completed	N/A	N/A
D0011-SIP:12	Separate industrial sewer network, including twin industrial rising mains & land based gravity outfall	C	31/12/2010	Yes	Works Completed	N/A	N/A
D0011-SIP:13	SW6 (pump station No.1, St Catherine's Road) to operate as an emergency overflow only	A	31/12/2011	Yes	Works Completed	N/A	N/A
D0011-SIP:14	Upgrade existing sewage collection network	C	31/12/2011	Yes	Works on-going on-site		

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

Licence Specific Reports are not required.

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	N/A
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	Yes – clerical amendment
List reason e.g. changes to monitoring requirements	Clerical Amendment
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	No

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

Signed: Date: 14/08/2019

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

Appendix
Appendix 7.1 - Ambient monitoring summary