

Annual Environmental Report

2020



Millstreet

D0332-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0332-01, Millstreet, in Cork 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 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

A new WWTP to serve the Millstreet Agglomeration was commissioned in Quarter 1 of 2020. The WWTP has a Design PE of 3,220 and entails Inlet Works, Stormwater Storage, 2no. Biological Treatment Streams, 2no. Final Settling Tanks, Chemical Dosing for Phosphorus Removal and the relocation of the Primary Discharge Point to the River Finnow at Finnow Bridge. Stormwater Overflows SW002 and SW003 were also decommissioned during 2020 following the laying of a larger diameter sewer to the new Inlet Pump Sump within the WWTP site. Rehabilitations works were also undertaken to sections of the collection network. A new Pump Station with a duty/standby pumping arrangement was commissioned at Clara Road (Mount Leader) during October 2020 and the existing pump station was decommissioned. Replacement duty and standby pumps were also installed at Killarney Road Pump Station during December 2020.

1.2 TREATMENT SUMMARY

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

- Millstreet WWTP - 2020 with a Plant Capacity PE of 1600, the treatment type is 2 - Secondary treatment

1.3 ELV OVERVIEW

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
TPEFF0500D0332SW001	Millstreet WWTP - 2020	Treated	Non-Compliant	Ammonia-Total (as N) mg/l

1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
There are no Licence Specific Reports included in the AER.	

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 MILLSTREET WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - MILLSTREET WWTP - 2020

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	12	187	60.17
COD-Cr mg/l	12	347	118.58
BOD, 5 days with Inhibition (Carbonaceo mg/l	12	155	53.35
Hydraulic Capacity	N/A	6356	618

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 2.1.5 if applicable.

Significance of Results:

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

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF0500D0332SW001

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)
COD-Cr mg/l	125	250	N/A	12	N/A	N/A	16.28	Pass
Suspended Solids mg/l	25	62.5	N/A	12	N/A	N/A	3.25	Pass
BOD, 5 days with Inhibition (Carbonaceo mg/l	25	50	N/A	12	N/A	N/A	2.18	Pass
Ammonia-Total (as N) mg/l	1	2	N/A	12	3	1	0.69	Fail
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	12	N/A	N/A	0.08	
pH pH units	N/A	N/A	N/A	12	N/A	N/A	7.44	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	5	N/A	N/A	0.63	

Notes:

1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

Cause of Exceedance(s):

The new WWTP was commissioned on 16th March 2020. Two of the exceedances of the Ammonia ELV were detected prior to the commissioning of the new WWTP. The old WWTP was overloaded and was not designed for Ammonia reduction to the limits prescribed for SW001 in WWDL D0332-01. Another exceedance of the Ammonia ELV was detected in May 2020 and the cause of same appears to be as a result of high strength influent loading. This may have been associated with ongoing works on site at that time.

Significance of Results:

A new Wastewater Discharge License Application has been submitted to the EPA in relation to the discharge location from the new WWTP. In the absence of a determination of same to date, the 2020 effluent analysis results are being evaluated against the ELV's included in Wastewater Discharge Licence D0332-01. The WWTP is non compliant with the ELV's set in the Wastewater Discharge Licence. The impact on the receiving waters is assessed further in Section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0500D0332SW001

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	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	126677, 92048	RS18F030300	No	No	Yes	No	Unassigned
Downstream	128139, 92288	RS18F030390/ RS18F030400	No	No	Yes	No	Good

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
BOD - 5 days (Total) mg/l	RS18F030300	1.84	RS18F030390/ RS18F030400	1.87	1.5	2
Ammonia-Total (as N) mg/l	RS18F030300	0.053	RS18F030390/ RS18F030400	0.0298	0.065	-35.6
ortho-Phosphate (as P) - unspecified mg/l	RS18F030300	0.023	RS18F030390/ RS18F030400	0.021	0.035	-5.7
pH pH units	RS18F030300	7.5	RS18F030390/ RS18F030400	11.24		
Dissolved Oxygen % Saturation	RS18F030300	100.86	RS18F030390/ RS18F030400	7.7		
Temperature °C	RS18F030300	11.46	RS18F030390/ RS18F030400	88.6		
Suspended Solids mg/l	RS18F030300	7	RS18F030390/ RS18F030400	9.5		

Significance of Results:

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

The ambient monitoring results do not meet the required EQS for BOD at both the upstream and downstream monitoring locations. Some of the downstream ambient samples (40%) were collected at Location RS18F030400 due to H&S access issues at RS18F030390.

The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009. Based on ambient monitoring results a deterioration in BOD, concentrations downstream of the effluent discharge is noted.

A deterioration in water quality has been identified in terms of Oxygenation, however it is not known if it or is not caused by the WWTP.

Other causes of deterioration in water quality in the area are: Other Catchment pressures

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

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - MILLSTREET WWTP - 2020

2.1.4.1 Treatment Efficiency Report - Millstreet WWTP - 2020

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)
TN	N/A	N/A	N/A
cBOD	36236	1394	96
COD	80547	10414	87
SS	40873	2080	95
TP	N/A	547	N/A

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

2.1.4.2 Treatment Capacity Report Summary - Millstreet WWTP - 2020

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.

Millstreet WWTP - 2020	
Peak Hydraulic Capacity (m ³ /day) - As Constructed	4320
DWF to the Treatment Plant (m ³ /day)	786
Current Hydraulic Loading - annual max (m ³ /day)	6356

Millstreet WWTP - 2020	
Average Hydraulic loading to the Treatment Plant (m ³ /day)	618
Organic Capacity (PE) - As Constructed	1600
Organic Capacity (PE) - Collected Load (peak week) ^{Note1}	2768
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	No

Nominal design capacities can be based on conservative design principles. In some cases assessment of existing plants has shown organic capacities significantly higher than the nominal design capacity. Accordingly plants that appear to be overloaded when comparing a collected peak load with the nominal design capacity can be fully compliant due to the safety factors in the original design.

2.1.5 SLUDGE / OTHER INPUTS - MILLSTREET WWTP - 2020

'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.							

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 were no relevant environmental complaints in 2020.			

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)
Breach of ELV	Shock load to the WWTP	1	Yes	No
Spillage	Shock load to the WWTP	1	No	No
Other	Other	1	Yes	No

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	EO caused by pump failure	1	No	No
Other	Other	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	5
Number of Incidents reported to the EPA via EDEN in 2020	5
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 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
SW002	127282, 90864	Yes	Medium	Not Meeting	Unknown	1213	Monitored
SW003	127282, 90864	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
SW004	126413, 90394	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW005	126808, 89966	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW006	127330, 90754	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW010	127236, 90625	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW008	127828, 90349	No	Low	Meeting	Unknown	Unknown	Not Monitored

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 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
SW007	127398, 091013	Yes	Unknown	Meeting	1	263	Monitored
SW009	127398,091013	No	Unknown	Meeting	1	950	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?	Yes
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	Yes

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
D0332-SIP:01	Install back up pump at Mount Leader pump station	C	31/12/2015	Yes	Works Completed		
D0332-SIP:02	Install wastewater treatment plant with nutrient removal	C	31/12/2015	Yes	Works Completed		
D0332-SIP:03	SW007 Primary Discharge Point to be discontinued	C	31/12/2015	Yes	Works Completed		

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 / or any Operational Improvements	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
Pearl Mussel Report	Yes	2015	No	
Priority Substances Assessment	Yes	2015	No	

5.1 PEARL MUSSEL REPORT

The Pearl Mussel Report Report has been included in the AER 2015

5.2 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2015

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?	Yes
List reason e.g. additional SWO identified	Relocation of Primary Discharge Point and additional SWO's within WWTP Site
Is there a need to request/advise the EPA of any modification to the existing WWDL with respect to condition 4 changes to monitoring location, frequency etc	Yes
List reason e.g. changes to monitoring requirements	Revised Ambient Monitoring Locations following relocation of Primary Discharge Point.
Have these processes commenced?	Yes
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: 20/05/2021

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 ,

Katherine Walshe

Acting Head of Environmental Regulation.

7 APPENDIX

There are no Appendices included