Annual Environmental Report

2022

Midleton

D0056-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2022 AER

This Annual Environmental Report has been prepared for D0056-01, Midleton 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.

Midleton Infiltration Study surveys complete. Final report issued to IW in September 2022.

1.2 TREATMENT SUMMARY

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

- Midleton WWTP with a Plant Capacity PE of 15000, the treatment type is 3N - Tertiary N removal .

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
TPEFF0500D0056SW001	Midleton WWTP	Combined	Non-Compliant	N/A

1.4 LICENCE SPECIFIC REPORTING

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

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 MIDLETON WWTP - COMBINED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - MIDLETON 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
COD-Cr mg/l	12	603	318
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	255	125
Total Nitrogen mg/l	12	54	26
Hydraulic Capacity	N/A	14104	8000

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 - TPEFF0500D0056SW100

Parameter	UTTD ELV	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)
COD-Cr mg/l	125	250	N/A	27	N/A	N/A	21	Pass
Suspended Solids mg/l	35	87.5	N/A	27	1	N/A	5.19	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	27	N/A	N/A	2.28	Pass
Total Nitrogen mg/l	15	18	N/A	27	N/A	N/A	6.55	Pass

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):

Not applicable

Significance of Results:

The WWTP is compliant with the ELV's set in the Urban Wastewater Treatment Directive.

2.1.3 EFFLUENT MONITORING SUMMARY – COMBINED DISCHARGE - TPEFF0500D0056SW001

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)
COD-Cr mg/l	125	250	N/A	27	N/A	N/A	21	Pass
Suspended Solids mg/l	35	87.5	N/A	27	1	N/A	5.19	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	27	N/A	N/A	2.28	Pass
Total Nitrogen mg/l	15	18	N/A	27	N/A	N/A	6.55	Pass
pH units [Note 2]	9	9	N/A	27	N/A	N/A	7.94	Pass
ortho-Phosphate (as P) - unspecified mg/l	2	2.4	N/A	27	N/A	N/A	0.402	Pass
Chromium - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Copper - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	53	
PCB 118 µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	

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)
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	27	N/A	N/A	4.56	
PCB 28 µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
PCB 153 µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Zinc - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	24	
Lead - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Cadmium - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Nickel - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Arsenic - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
PCB 52 µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
PCB 138 µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Mercury - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	

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)
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	27	N/A	N/A	0.416	
PCB 101 µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
PCB 180 µg/l	N/A	N/A	N/A	2	N/A	N/A	N/A	
Faecal coliforms no./100mls [Note 3]	N/A	N/A	N/A	60	N/A	N/A	136	Fail

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 – For pH the WWDA specifies a range of pH 6 – 9
3 – The annual mean for FC is the annual mean of the Geometric Mean for 50 consecutive samples. This includes sampling results from 2021.

Cause of Exceedance(s):

Not applicable

Significance of Results:

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

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2.1.4 AMBIENT MONITORING SUMMARY FOR THE COMBINED DISCHARGE TPEFF0500D0056SW001

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 Ecological Status
Downstream	187001, 70001	TW05003153LE6005	No	No	No	No	Moderate
Downstream	185998, 68502	TW05003153LE6006	No	No	No	No	Moderate

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

Significance of Results:

The coastal/transitional ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

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

The ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

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

The discharge from the wastewater treatment plant does have an observable negative impact on the Water Framework Directive status.

2.1.5 OPERATIONAL PERFORMANCE SUMMARY - MIDLETON WWTP

2.1.5.1 Treatment Efficiency Report - Midleton WWTP

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)
TP	N/A	N/A	N/A
SS	N/A	15630	N/A
cBOD	378321	6880	98
TN	79936	19736	75
COD	966849	64159	93

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

2.1.5.2 Treatment Capacity Report Summary - Midleton WWTP

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.

Midleton WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	10368
DWF to the Treatment Plant (m^3/day)	3456
Current Hydraulic Loading - annual max (m^3/day)	14104
Average Hydraulic loading to the Treatment Plant (m^3/day)	8000
Organic Capacity (PE) - As Constructed	15000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	16652
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

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.

2.1.6 SLUDGE / OTHER INPUTS - MIDLETON 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)
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 related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2022.			

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 Uisce Éireann 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)
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No
Abatement Equipment offline	Plant or equipment maintenance at WWTP	1	No	No
Breach of ELV	Inadequate Infrastructure	1	Yes	No
Spillage	Other	1	No	Yes
Uncontrolled release	Network Infrastructure	1	Yes	No
Uncontrolled release	Inadequate Infrastructure	1	Yes	No
Uncontrolled release	EO caused by pump failure	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2022	11
Number of Incidents reported to the EPA via EDEN in 2022	11
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 AND INSPECTION SUMMARY REPORT

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m3)	Monitoring Status
SW03MIDL	187975,73109	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Monitored
SW04MIDL	187975,73109	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Monitored
SW05MIDL	188044,72524	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW07MIDL	188518,71783	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
TBC	187516,72901	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	188343,73331	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m3)	Monitoring Status
TBC	188270,73234	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	188333,73317	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	188738,73338	No	TBC	Not Meeting Criteria	Unknown	Unknown	TBC
TBC	317775,234381	No	TBC	Meeting Criteria	Unknown	Unknown	TBC

Any TBC SWO(s) were identified as part of the on-going National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much sewage was discharged via monitored 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?	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 a 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
D0056-SIP:01	Increase Midleton WWTP capacity to 15,000PE	C	31/12/2011	Yes	Works Completed		
D0056-SIP:02	Infiltration programme	C	31/12/2011	Yes	Works Completed		
D0056-SIP:03	Infiltration programme - SW03	C	31/12/2011	Yes	Works Completed		
D0056-SIP:04	Infiltration programme - SW04	C	31/12/2011	Yes	Works Completed		
D0056-SIP:05	Upgrading of Storm Water Overflows to comply with the limits outlined in Schedule A.4 (Condition 5.6) - SW03	C	31/12/2011	Yes	At Planning Stage	2029	
D0056-SIP:06	Upgrading of Storm Water Overflows to comply with the	C	31/12/2011	Yes	At Planning Stage	2029	

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
	limits outlined in Schedule A.4 (Condition 5.6) - SW04						

A summary of the status of any other improvements identified by under Condition 5 assessments- is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
No additional improvements planned at this time.				

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 Tables 4.2.1 and 4.2.2.

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 a list of the various reports required for this agglomeration and a brief summary of their recommendations.

5.1 PRIORITY SUBSTANCES ASSESSMENT

Licence Specific Report	Required by licence	Year included in AER	Included in this AER
Priority Substances Assessment	Yes	2014	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?	Yes
List reason e.g. additional SWO identified	Connection of treated industrial effluent into primary discharge outfall.
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	No
List reason e.g. changes to monitoring requirements	N/A
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: 10/05/2023

This AER has been produced by Uisce Éireann'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

Ambient Monitoring Point from WWDL (or as agreed with EPA)	*Irish Grid Reference*	EPA Feature Coding Tool code	Receiving Waters Designation (Y/N)				WFD Status
			Bathing Water	Drinking Water	FWPM	Shellfish	
TW05003153LE6005	187001, 70001		No	No	No	No	Moderate
TW05003153LE6006	185998, 68502		No	No	No	No	Moderate

Ambient Impact Assessment Table

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	%EQS
cBOD mg/l			TW05003153LE6006	0.85		
Ortho-Phosphate (as P) mg/l	TW05003153LE6005	0.0136	TW05003153LE6006	0.0163		
Ammonia (as N) mg/l	TW05003153LE6005	0.053	TW05003153LE6006	0.051		
pH pH units	TW05003153LE6005	8.05	TW05003153LE6006	8.02		
Dissolved Oxygen %saturation or mg/l	TW05003153LE6005	104	TW05003153LE6006	104		
Suspended Solids mg/l						
Total Nitrogen (as N) mg/l						
Total Phosphorus (as P) mg/l						
Dissolved Inorganic Nitrogen (as N) mg/l						
Total Oxidised Nitrogen (as N) mg/l	TW05003153LE6005	0.21	TW05003153LE6006	0.15		