Annual Environmental Report

2019

Ringaskidy

D0057-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0057-01, Ringaskidy, 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.

1.2 TREATMENT SUMMARY

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

- Cork Lower Harbour WWTP with a Plant Capacity PE of 65000, 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.

1.3.1 Cork Lower Harbour WWTP (Combined discharge of CLH treated WW & Industrial discharges SW001)

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF0500D0057SW001	Combined discharge of Cork Lower Harbour WWTP And Industrial Discharges	Treated	Non-Compliant	Suspended Solids mg/l, COD-Cr mg/l, Total Nitrogen mg/l, BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l

1.3.2 Cork Lower Harbour WWTP (monitoring location SW100 from the WWTP (upstream of flows from industrial licenced facilities))

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF0500D0057SW100	Cork Lower Harbour WWTP	Treated	Compliant	N/A

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 CORK LOWER HARBOUR WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - CORK LOWER HARBOUR 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
Total Nitrogen mg/l	26	132	53.38
COD-Cr mg/l	26	5565	1552.79
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	26	1595	424.73
Total Phosphorus (as P) mg/l	26	20.05	10.6
Suspended Solids mg/l	26	1502	627.01
Hydraulic Capacity	N/A	27564	7540

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 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 – TPEFF0500D0057SW001 & TPEFF0500D0057SW100

2.1.2.1 Effluent Monitoring summary – Combined discharge of Cork Lower Harbour WWTP and Industrial Discharges - SW001

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)
Mercury - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	0.5	
Zinc - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	54.27	
Chromium - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	1.45	
COD-Cr mg/l	125	250	N/A	26	6	2	112.22	Fail
Di(2-ethylhexyl) phthalate (DEHP) µg/l	N/A	N/A	N/A	2	N/A	N/A	0.06	
Suspended Solids mg/l	35	87.5	N/A	26	13	4	55.55	Fail
PCB 101 µg/l	N/A	N/A	N/A	2	N/A	N/A	0.01	
Lead - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	1	
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	26	N/A	N/A	7.24	

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)
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	26	N/A	N/A	2.23	
pH pH units	6-9	6-9	N/A	26	N/A	N/A	7.57	Pass
PCB 153 µg/l	N/A	N/A	N/A	2	N/A	N/A	0.01	
Toxicity (Marine Bacterium) T.U.'s	N/A	N/A	N/A	1	N/A	N/A	2.2	
Copper - unspecified µg/l	N/A	N/A	N/A	2	N/A	N/A	6.78	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	26	N/A	N/A	5.05	
PCB 138 µg/l	N/A	N/A	N/A	2	N/A	N/A	0.01	
PCB 180 µg/l	N/A	N/A	N/A	2	N/A	N/A	0.01	
PCB 28 µg/l	N/A	N/A	N/A	2	N/A	N/A	0.01	
PCB 118 µg/l	N/A	N/A	N/A	2	N/A	N/A	0.01	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	26	N/A	N/A	5.32	
Total Nitrogen mg/l	28.5	34.2	N/A	26	1	1	15.02	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)
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	26	7	1	21.94	Fail
Toxicity (Freshwater Crustacean) T.U.'s	N/A	N/A	N/A	1	N/A	N/A	3.1	
PCB 52 µg/l	N/A	N/A	N/A	2	N/A	N/A	0.01	

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):

Subject to licence review – Licence review application under active preparation

Significance of Results:

The impact on receiving waters is assessed further in Section 2.

2.1.2.2 Effluent Monitoring summary – Cork Lower Harbour WWTP (Monitoring location SW100 upstream of flows from industrial licensed facilities)

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	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	23	0	0	Pass
Suspended Solids mg/l	35	87.5	N/A	23	0	0	Pass
pH pH units	6-9	6-9	N/A	23	0	0	Pass
Total Nitrogen mg/l	28.5	34.2	N/A	23	0	0	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	23	0	0	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):

N/A

Significance of Results:

The WWTP (monitoring location SW100 upstream of flows from industrial licensed facilities) is compliant with the ELV's set in the Wastewater Discharge Licence.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0500D0057SW100

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
Condition 4.16 of the licence requires the licensee to report annually in the AER on the chemical and ecological status of the receiving water. As such, specific monitoring points are not set out in the licence. **The primary outfall discharges to Cork Harbour (IE_SW_060_0000), which is currently at Moderate Status, and Outer Cork Harbour (IE_SW_050_0000) which is currently at Good Status.**							

Significance of Results:

The combined discharge (SW001) was non-compliant with the ELV's set in the wastewater discharge licence. The discharge from the WWTP upstream of the industrial licensed facilities (SW100) was compliant with the ELV's set in the wastewater discharge licence.

The status of Outer Cork Harbour is not impacted by the discharge.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - CORK LOWER HARBOUR WWTP

2.1.4.1 Treatment Efficiency Report - Cork Lower Harbour 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	27749	14046	49
cBOD	1112060	57885	95
COD	4065656	296018	93
TN	139759	39618	72
SS	1641680	146539	91

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

2.1.4.2 Treatment Capacity Report Summary - Cork Lower Harbour 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.

Cork Lower Harbour WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	43875
DWF to the Treatment Plant (m^3/day)	14625
Current Hydraulic Loading - annual max (m^3/day)	27564
Average Hydraulic loading to the Treatment Plant (m^3/day)	7540
Organic Capacity (PE) - As Constructed	65000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	32850
Organic Capacity (PE) - Remaining	32150
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 - CORK LOWER HARBOUR 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 is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2019.			

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)
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	No
Other	Plant or equipment breakdown at WWTP	1	No	No

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

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	4
Number of Incidents reported to the EPA via EDEN in 2019	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
SW011	173070, 62352	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	174443, 62603	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
SW008	175796, 64930	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW009	174443, 62603	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW010	173131, 62418	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW012	178816, 61285	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW013	179639, 61145	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
TBC	TBC	No	Unknown	Not yet Assessed	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?	N/A
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?	N/A

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
D0057-SIP:02	Infiltration programme	C	01/01/2015	Yes	Works Completed		
D0057-SIP:05	SW 04 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Works Completed		
D0057-SIP:06	SW 05 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Works Completed		
D0057-SIP:07	SW 06 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis
D0057-SIP:09	WWTP and ancillary works to provide secondary treatment	C	01/01/2015	Yes	Works Completed		
D0057-SIP:01	SW 02 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Works Completed		

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
D0057-SIP:03	Installations of rising mains, gravity sewers, pumping stations and marine pipeline including upgrading of existing facilities	C	01/01/2015	Yes	Works Completed		
D0057-SIP:04	SW 03 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Works Completed		
D0057-SIP:08	SW 07 Ring to meet criteria set out in DoEHLG Procedures and Criteria....	C	01/01/2015	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis

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
There is no Licence Specific Report Required in this AER Annual Review.				

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	Licence Review Application under active preparation
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	N/A
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	Yes

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

Signed: Date: 11/08/2020

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