Annual Environmental Report

2024

Kilkenny City and Environs

D0018-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 AER

This Annual Environmental Report has been prepared for D0018-01, Kilkenny City and Environs, in Kilkenny 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.

There were no major capital or operational changes undertaken.

1.2 TREATMENT SUMMARY

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

- Kilkenny City and Environs WWTP with a Plant Capacity PE of 77000, the treatment type is 3P - Tertiary P 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
TPEFF1500D0018SW001	Kilkenny City and Environs WWTP	Treated	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 KILKENNY CITY AND ENVIRONS WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - KILKENNY CITY AND ENVIRONS 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 Phosphorus (as P) mg/l	48	8.17	4.41
pH pH units	48	8.23	7.70
Total Nitrogen mg/l	47	54	36
BOD, 5 days with Inhibition (Carbonaceo mg/l	48	228	121
Suspended Solids mg/l	48	580	264
Ammonia-Total (as N) mg/l	48	35	25
COD-Cr mg/l	48	887	371
Hydraulic Capacity	N/A	30115	10691

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 - TPEFF1500D0018SW001

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	48	N/A	N/A	19	Pass
Suspended Solids mg/l	35	87.5	N/A	48	N/A	N/A	7.07	Pass
BOD, 5 days with Inhibition (Carbonaceo mg/l	25	50	N/A	48	N/A	N/A	2.90	Pass
pH pH units	9	9	N/A	48	N/A	N/A	7.66	Pass
Ammonia-Total (as N) mg/l	3	3.6	N/A	48	N/A	N/A	0.287	Pass
Total Phosphorus (as P) mg/l	2	2.4	N/A	48	N/A	N/A	0.214	Pass

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)
ortho-Phosphate (as P) - unspecified mg/l	0.5	0.6	N/A	48	1	N/A	0.138	Pass
Total Nitrogen mg/l	N/A	N/A	N/A	47	N/A	N/A	8.57	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	48	N/A	N/A	7.68	

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

Cause of Exceedance(s):

Not applicable

Significance of Results:

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

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1500D0018SW001

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
Upstream	253230, 154517	RS15N011990	No	No	No	No	Good
Downstream	253387, 154460	RS15N011993	No	No	No	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	RS15N011990	0.825	RS15N011993	0.925	1.50	6.7
Ammonia-Total (as N) mg/l	RS15N011990	0.009	RS15N011993	0.021	0.065	17.7
ortho-Phosphate (as P) - unspecified mg/l	RS15N011990	0.015	RS15N011993	0.014	0.035	-2.1
Sulphate mg/l	RS15N011990	17	RS15N011993	21	N/A	

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Dissolved Oxygen % O2	RS15N011990	104	RS15N011993	103	N/A	
pH pH units	RS15N011990	8.23	RS15N011993	8.19	N/A	
Nitrite (as N) mg/l	RS15N011990	0.007	RS15N011993	0.007	N/A	
Chloride mg/l	RS15N011990	23	RS15N011993	28	N/A	
Total Phosphorus (as P) mg/l	RS15N011990	0.018	RS15N011993	0.019	N/A	
Conductivity @20°C µS/cm	RS15N011990	407	RS15N011993	480	N/A	
Temperature °C	RS15N011990	11	RS15N011993	11	N/A	
Nitrate (as N) mg/l	RS15N011990	3.85	RS15N011993	3.40	N/A	

Significance of Results:

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.

Based on ambient monitoring results a deterioration in Ammonia, BOD, Chloride, Conductivity, Sulphate, Total Phosphourus, concentrations downstream of the effluent discharge is noted.

A deterioration in water quality has been identified, 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 unknown.

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 - KILKENNY CITY AND ENVIRONS WWTP

2.1.4.1 Treatment Efficiency Report - Kilkenny City and Environs 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)
SS	998956	26941	97
TN	136116	32809	76
COD	1403971	74114	95
TP	16662	815	95
cBOD	456863	11065	98

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

2.1.4.2 Treatment Capacity Report Summary - Kilkenny City and Environs 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.

Kilkenny City and Environs WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	50904
DWF to the Treatment Plant (m^3/day)	16968
Current Hydraulic Loading - annual max (m^3/day)	30115

Kilkenny City and Environs WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	10691
Organic Capacity (PE) - As Constructed	77000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	38455
Organic Capacity (PE) - Remaining	38545
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 - KILKENNY CITY AND ENVIRONS 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)
Industrial / Commercial Sludge	316	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	3035	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	2132	Volume (m3)		5	No	Yes	Yes

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)
Industrial / Commercial Sludge	5196	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	3275	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	584	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	360	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	232	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	150	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	1911	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	575	Volume (m3)		5	No	Yes	Yes

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)
Industrial / Commercial Sludge	191	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	455	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	977	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	2680	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	1518	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	2686	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	1882	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	24	Volume (m3)		5	No	Yes	Yes

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)
Industrial / Commercial Sludge	24	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	107	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	39	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	482	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	547	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	245	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	16	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	96	Volume (m3)		5	No	Yes	Yes

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)
Industrial / Commercial Sludge	798	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	34	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	36	Volume (m3)		5	No	Yes	Yes
Domestic /Septic Tank Sludge	510	Volume (m3)		5	No	Yes	Yes
Waterworks Sludge	6383	Volume (m3)		5	No	Yes	Yes
Landfill Leachate (delivered by tanker)	2064	Volume (m3)		5	No	Yes	Yes
Industrial / Commercial Sludge	284	Volume (m3)		5	No	Yes	Yes

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 2024.			

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	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Emergency overflow caused by pump failure	No	Yes
Spillage	Network Infrastructure	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2024	2
Number of Incidents reported to the EPA via EDEN in 2024	2
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 (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 2024 (No. of events)	Total volume discharged in 2024 (m3)	Monitoring Status
SW004	251337,155882	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW002	251753,155369	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW003	250719,156064	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW007	250719,156064	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW022	251361,155883	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	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 2024 (No. of events)	Total volume discharged in 2024 (m3)	Monitoring Status
SW005	250789,155825	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW006	250718,156192	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW009	250629,156450	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW010	250641,156425	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW011	251745,155402	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW013	250148,156118	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW014	250221,156118	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW016	250449,156788	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW017	250481,156641	Yes	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 2024 (No. of events)	Total volume discharged in 2024 (m3)	Monitoring Status
SW018	250018,158099	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW021	251775,155243	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
-	250629,156450	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
-	250789,155825	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SWO20	250754,156070	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
-	249967,154863	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
-	250466,158554	No	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW015	250234,156126	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
-	251785,155228	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 2024 (No. of events)	Total volume discharged in 2024 (m3)	Monitoring Status
-	250561,156614	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW001	253243,154522	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
-	250637,156614	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW003	250714,156076	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
-	250423,157975	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
-	250423,157975	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
-	252723,154840	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
-	250629,156450	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored

The contents presented in this table include the most up to date information available at the time of writing. 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 wastewater discharge by metered SWOs during 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 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
D0018-SIP:01	Phosphorous reduction (ferric dosing)	C	31/12/2013	Yes	Works Completed		

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.

Licence Specific Report	Required by licence	Included in this AER
D0018-01-Priority Substances Assessment	Yes	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?	N/A
List reason e.g. additional SWO identified	N/A
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?	N/A
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: 18/06/2025

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

Head of Environmental Regulation.

7 APPENDIX

There are no Appendices included