Annual Environmental Report

2024

Uisce Éireann
Irish Water

Waterford City

D0022-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 AER

This Annual Environmental Report has been prepared for D0022-01, Waterford City, in Waterford 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)

- Waterford City WWTP with a Plant Capacity PE of 190600, 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
TPEFF3000D0022SW001	Waterford City 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 WATERFORD CITY WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - WATERFORD CITY 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	27	41	24
Suspended Solids mg/l	27	506	177
COD-Cr mg/l	27	777	352
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	27	423	137
Total Phosphorus (as P) mg/l	27	8.00	3.63
Hydraulic Capacity	N/A	70778	36699

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 - TPEFF3000D0022SW001

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	26	N/A	N/A	24	Pass
Suspended Solids mg/l	35	87.5	N/A	26	N/A	N/A	7.46	Pass
Total Nitrogen mg/l	35	42	N/A	26	N/A	N/A	8.78	Pass
Total Oxidised Nitrogen (as N) mg/l	35	42	N/A	26	N/A	N/A	5.06	Pass
Ammonia-Total (as N) mg/l	25	30	N/A	26	N/A	N/A	2.64	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	26	N/A	N/A	5.46	Pass
pH pH units	9	9	N/A	26	N/A	N/A	7.65	Pass
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	26	N/A	N/A	0.410	
Conductivity @20°C µS/cm	N/A	N/A	N/A	20	N/A	N/A	1497	

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)
Fats, Oils and Greases mg/l	N/A	N/A	N/A	9	N/A	N/A	11	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	26	N/A	N/A	0.920	

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 TPEFF3000D0022SW001

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	264720, 112043	TW30002102SR4002	No	No	No	Yes	Good
Downstream	266200, 113186	TW30002102SR4004	No	No	No	Yes	Good

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.

Based on ambient monitoring results a deterioration in ortho-phosphate, Ammonia, pH, Dissolved Oxygen % Saturation, Chlorophyll, Pheophytin, Salinity, Total Oxidised Nitrogen, 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.

The discharge from the wastewater treatment plant does have an observable impact on the designated shellfish water quality.

The discharge from the wastewater treatment plant does have an observable impact on the coastal/transitional water quality.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - WATERFORD CITY WWTP

2.1.4.1 Treatment Efficiency Report - Waterford City 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)
COD	5971971	350654	94
SS	3008657	107790	96
cBOD	2330689	79009	97
TP	61580	13302	78
TN	415377	126990	69

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

2.1.4.2 Treatment Capacity Report Summary - Waterford City 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.

Waterford City WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	82598
DWF to the Treatment Plant (m^3/day)	82598
Current Hydraulic Loading - annual max (m^3/day)	70778
Average Hydraulic loading to the Treatment Plant (m^3/day)	36699
Organic Capacity (PE) - As Constructed	190600
Organic Capacity (PE) - Collected Load (peak week)[Note1]	107011
Organic Capacity (PE) - Remaining	83589
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 - WATERFORD CITY 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 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	Adverse Weather	No	No
Uncontrolled release	Plant or equipment breakdown at WWTP	No	No
Uncontrolled release	Emergency overflow caused by power failure	No	No

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Emergency overflow caused by power failure	No	No
Abatement equipment off-line	Plant or equipment breakdown at WWTP	No	No
Uncontrolled release	Blocked Sewer	No	No
Uncontrolled release	Emergency overflow caused by ragging or blocking	No	No
Uncontrolled release	Blocked Sewer	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2024	8
Number of Incidents reported to the EPA via EDEN in 2024	8
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
SW0	261619, 111853	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW004	261077, 112775	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW006	261499, 112575	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW008	263905, 112227	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW009	262226, 111338	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW011	262700, 111403	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
SW012	263261, 111763	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW019	264457, 110272	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW019	264457, 110272	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW021	260379, 112742	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW022	260886, 112571	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW023	260990, 112556	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW023	260990, 112556	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW024	260501, 112719	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW025	260588, 112686	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW026	260762, 112650	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
SW027	260154, 112820	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW028	263547, 112254	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW20	260329, 112787	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	261619, 111853	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	258979, 110880	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	260544, 111616	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	259939, 111086	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	258979, 110880	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	261619, 111853	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	261750, 112656	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
TBC	257806, 110071	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	264288, 110161	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	263657, 110896	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	260779, 111959	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	260142, 110242	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	260136, 109942	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	259179, 110696	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	260731, 111912	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	259939, 111086	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	260640, 111589	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
TBC	259454, 110583	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	259939, 111086	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	260637, 111523	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	262807, 114198	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	263629, 110888	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	258561, 112266	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	258421, 111322	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	263654, 110900	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	263252, 111763	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	257059, 110586	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
TBC	260854, 112014	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	265602, 112078	No	Low Significance	Meeting Criteria	Unknown	268248	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)?	268248
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
D0022-SIP:01	Waterford North West City Sewerage Scheme	C	31/12/2020	No	Not Started		Not required

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
D0022-01-Shellfish Impact 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?	Yes
List reason e.g. additional SWO identified	New SWO
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	Ambient Monitoring Location Changes
Have these processes commenced?	Yes
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: 15/07/2025

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

Appendix
Appendix 7.1 - Ambient monitoring summary

Ambient Points

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	
TW30002102SR4002	264720, 112043	TPEFF3000D0022SW001	No	No	No	Yes	Good
TW30002102SR4004	266200, 113186	TPEFF3000D0022SW001	No	No	No	Yes	Good

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 (Mean)	%EQS
BOD mg/l	TW30002102SR4002	0.707	TW30002102SR4004	0.707	4.0	0
Ortho-Phosphate (as P) mg/l	TW30002102SR4002	0.018	TW30002102SR4004	0.020	0.06	3.3
Ammonia (as N) mg/l	TW30002102SR4002	0.049	TW30002102SR4004	0.054		
pH pH units	TW30002102SR4002	7.975	TW30002102SR4004	8.000		
Dissolved Oxygen %saturation	TW30002102SR4002	91.000	TW30002102SR4004	92.000	70 - 130	1
Chlorophyll µg/l	TW30002102SR4002	2.875	TW30002102SR4004	3.775		
Pheophytin a µg/l	TW30002102SR4002	1.950	TW30002102SR4004	2.300		
Salinity PSU	TW30002102SR4002	15.425	TW30002102SR4004	17.075		
Salinity (Lab) 0/oo	TW30002102SR4002	15.300	TW30002102SR4004	17.075		
Silica (as SiO2) mg/l	TW30002102SR4002	1.443	TW30002102SR4004	1.380		
Temperature °C	TW30002102SR4002	14.850	TW30002102SR4004	14.775		
Total Oxidised Nitrogen (as N) mg/l	TW30002102SR4002	0.730	TW30002102SR4004	0.905		

Ambient Data Tables

Monitored Entity	Station	Monitoring Point	Sample Date	Ammonia-Total (as N) mg/l	BOD - 5 days (Total) mg/l	Chlorophyll a (Fluorescence) µg/l	Dissolved Oxygen % Saturation	ortho-Phosphate (as P) - unspecified mg/l	pH pH Units	Pheophytin a µg/l	Salinity PSU	Salinity(Lab) 0/oo	Silica (as SiO2) mg/l	Temperature °C	Total Oxidised Nitrogen (as N) mg/l
Lower Suir Estruary	TW30002102 SR4002	Upstream	15/02/2024	0.048	<1	1.4	90	0.023	7.9	3.4	4.4	4.6	4.3	8.2	1.4
Lower Suir Estruary	TW30002102 SR4002	Upstream	10/06/2024	0.03	<1	2.7	96	0.012	8	1.6	17.3	17.4	0.39	15.2	0.58
Lower Suir Estruary	TW30002102 SR4002	Upstream	25/07/2024	0.07	<1	4.5	88	0.022	8	1.5	21.8	21	0.45	17.4	0.67
Lower Suir Estruary	TW30002102 SR4002	Upstream	14/08/2024	0.046	<1	2.9	90	0.013	8	1.3	18.2	18.2	0.63	18.6	0.27
			Mean	0.049	0.707	2.875	91.000	0.018	7.975	1.950	15.425	15.300	1.443	14.850	0.730

Monitored Entity	Station	Monitoring Point	Sample Date	Ammonia-Total (as N) mg/l	BOD - 5 days (Total) mg/l	Chlorophyll a (Fluorescence) µg/l	Dissolved Oxygen % Saturation	ortho-Phosphate (as P) - unspecified mg/l	pH pH Units	Pheophytin a µg/l	Salinity PSU	Salinity(Lab) 0/oo	Silica (as SiO2) mg/l	Temperature °C	Total Oxidised Nitrogen (as N) mg/l
Lower Suir Estruary	TW30002102 SR4004	Downstream	15/02/2024	0.05	<1	1	91	0.024	7.9	2.8	6.3	6.2	4	8.3	1.5
Lower Suir Estruary	TW30002102 SR4004	Downstream	10/06/2024	0.034	<1	3.2	96	0.016	8	2.1	18.8	18.6	0.37	15.1	0.75
Lower Suir Estruary	TW30002102 SR4004	Downstream	25/07/2024	0.064	<1	4.8	89	0.02	8	2.3	24.3	24.6	0.28	17.2	0.53
Lower Suir Estruary	TW30002102 SR4004	Downstream	14/08/2024	0.067	<1	6.1	92	0.019	8.1	2	18.9	18.9	0.87	18.5	0.84
			Mean	0.054	0.707	3.775	92.000	0.020	8.000	2.300	17.075	17.075	1.380	14.775	0.905

Note: Where the concentration in the result is less than the limit of detection (LOD), a value of LOD/sqrt(2) was used in calculating the mean and 95%ile concentrations.