

# Annual Environmental Report

2021



Cork City

D0033-01

## **CONTENTS**

### **1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER**

- 1.1 ANNUAL STATEMENT OF MEASURES
- 1.2 TREATMENT SUMMARY
- 1.3 ELV OVERVIEW
- 1.4 LICENSE SPECIFIC REPORT INCLUDED IN AER

### **2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY**

- 2.1 CARRIGRENNAN (CORK CITY) WWTP - TREATED DISCHARGE
  - 2.1.1 INFLUENT SUMMARY - CARRIGRENNAN (CORK CITY) WWTP
  - 2.1.2 EFFLUENT MONITORING SUMMARY - CARRIGRENNAN (CORK CITY) WWTP -
  - 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE -
  - 2.1.4 OPERATIONAL REPORTS SUMMARY FOR CARRIGRENNAN (CORK CITY) WWTP
  - 2.1.5 SLUDGE/OTHER INPUTS TO CARRIGRENNAN (CORK CITY) WWTP

### **3 COMPLAINTS AND INCIDENTS**

- 3.1 COMPLAINTS SUMMARY
- 3.2 REPORTED INCIDENTS SUMMARY
  - 3.2.1 SUMMARY OF INCIDENTS
  - 3.2.2 SUMMARY OF OVERALL INCIDENTS

### **4 INFRASTRUCTURAL ASSESSMENT AND PROGRAMME OF IMPROVEMENTS**

- 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT
  - 4.1.1 SWO IDENTIFICATION AND INSPECTION SUMMARY REPORT
- 4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS
  - 4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY
  - 4.2.2 IMPROVEMENT PROGRAMME SUMMARY
  - 4.2.3 SEWER INTEGRITY RISK ASSESSMENT

### **5 LICENCE SPECIFIC REPORTS**

- 5.1 PRIORITY SUBSTANCES ASSESSMENT
- 5.2 SHELLFISH IMPACT ASSESSMENT
- 5.3 TOXICITY OF FINAL EFFLUENT

### **6 CERTIFICATION AND SIGN OFF**

6.1 SUMMARY OF AER CONTENTS

**7 APPENDIX**

7.1 AMBIENT MONITORING SUMMARY

# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

This Annual Environmental Report has been prepared for D0033-01, Cork City, 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)

- Carrigrennan (Cork City) WWTP with a Plant Capacity PE of 413200, 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
TPEFF0400D0033SW001	Carrigrennan (Cork City) WWTP	Treated	Non-Compliant	Total Nitrogen mg/l

## 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 CARRIGRENNAN (CORK CITY) WWTP - TREATED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - CARRIGRENNAN (CORK 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
<b>BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l</b>	260	540	102
<b>COD-Cr mg/l</b>	260	710	259
<b>Suspended Solids mg/l</b>	260	250	115
<b>Total Nitrogen mg/l</b>	26	40	20
<b>Total Phosphorus (as P) mg/l</b>	26	3.90	2.36
<b>Hydraulic Capacity</b>	N/A	332434	119056

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 - TPEFF0400D0033SW001

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	260	2	N/A	62	Pass
Suspended Solids mg/l	35	88	N/A	260	4	N/A	11	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	260	3	N/A	8.69	Pass
Total Nitrogen mg/l	10	12	N/A	26	26	26	21	Fail
pH units	9.00	9.00	N/A	260	N/A	N/A	7.69	Pass
Total Phosphorus (as P) mg/l	2.50	3.00	N/A	26	1	N/A	0.784	Pass
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	26	N/A	N/A	12	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	26	N/A	N/A	0.492	
Appearance (on Sampling) Descriptive	N/A	N/A	N/A	260	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)
<b>Odour Descriptive</b>	N/A	N/A	N/A	260	N/A	N/A	N/A	
<b>Total Oxidised Nitrogen (as N) mg/l</b>	N/A	N/A	N/A	26	N/A	N/A	3.52	

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):

**No nitrogen removal at WwTP**

### Significance of Results:

The WWTP is non compliant with the ELV's set in the Wastewater Discharge Licence. The impact on receiving waters is assessed further in Section 2

## 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF0400D0033SW001

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	165691, 74463	RS19B140110	No	No	No	No	Unassigned
Downstream	162843, 69176	RS19T050890	No	No	No	No	Unassigned
Downstream	162863, 71034	RS19C120110	No	No	No	No	Unassigned
Downstream	165003, 71212	RS19C120740	No	No	No	No	Unassigned
Downstream	164101, 68782	RS19G040140	No	No	No	No	Unassigned
Downstream	164344, 69415	RS19G040190	No	No	No	No	Unassigned
Downstream	165278, 69503	RS19G040300	No	No	No	No	Unassigned
Downstream	165697, 70336	RS19G040490	No	No	No	No	Unassigned
Downstream	165401, 70768	RS19G040700	No	No	No	No	Unassigned
Downstream	166291, 74796	RS19G880990	No	No	No	No	Unassigned
Downstream	166925, 74246	RS19B140300	No	No	No	No	Moderate
Downstream	167422, 73340	RS19B140800	No	No	No	No	Moderate
Downstream	168942, 73453	RS19G090400	No	No	No	No	Moderate
Downstream	167868, 73539	RS19G090800	No	No	No	No	Moderate
Downstream	167496, 72342	RS19K750900	No	No	No	No	Moderate
Downstream	174650, 70440	TW04003159LE2005	No	No	No	No	Moderate

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	170242, 72195	TW04003159LE2006	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 WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence for the following: Total Nitrogen mg/l.

The ambient monitoring results do not meet the required EQS at the upstream and the downstream monitoring locations. 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 and Ortho- P , 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: 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 - CARRIGRENNAN (CORK CITY) WWTP

### 2.1.4.1 Treatment Efficiency Report - Carrigrennan (Cork 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	11171400	2772124	75
TP	95104	32881	65

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
<b>cBOD</b>	4387816	389498	91
<b>TN</b>	790342	879078	-11.23
<b>SS</b>	4966700	511495	90

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

### **2.1.4.2 Treatment Capacity Report Summary - Carrigrennan (Cork 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.

<b>Carrigrennan (Cork City) WWTP</b>	
<b>Peak Hydraulic Capacity (m<sup>3</sup>/day) - As Constructed</b>	359592
<b>DWF to the Treatment Plant (m<sup>3</sup>/day)</b>	59359
<b>Current Hydraulic Loading - annual max (m<sup>3</sup>/day)</b>	332434
<b>Average Hydraulic loading to the Treatment Plant (m<sup>3</sup>/day)</b>	119056
<b>Organic Capacity (PE) - As Constructed</b>	413200
<b>Organic Capacity (PE) - Collected Load (peak week)<sup>Note1</sup></b>	241480
<b>Organic Capacity (PE) - Remaining</b>	171720
<b>Will the capacity be exceeded in the next three years? (Yes/No)</b>	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 - CARRIGRENNAN (CORK 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)
<b>There is no Sludge and Other Input data for the Treatment Plant included in the AER.</b>							

## 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
7	Discharge to waters	0	7

### 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)
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	Yes	Yes
Abatement Equipment offline	EO caused by power failure	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	No

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
<b>Abatement Equipment offline</b>	Plant or equipment breakdown at WWTP	1	No	Yes
<b>Abatement Equipment offline</b>	Plant or equipment breakdown at WWTP	1	No	No
<b>Breach of ELV</b>	WWTP upgrade required to meet ELV	1	Yes	No
<b>Breach of ELV</b>	Plant or equipment breakdown at WWTP	1	Yes	No
<b>Other</b>	Plant or equipment maintenance at WWTP	1	No	Yes
<b>Spillage</b>	Adverse Weather	1	No	No
<b>Uncontrolled release</b>	Network Infrastructure	1	Yes	No
<b>Uncontrolled release</b>	EO caused by pump failure	1	No	Yes
<b>Uncontrolled release</b>	EO caused by power failure	1	No	Yes
<b>Uncontrolled release</b>	Adverse Weather	1	No	Yes
<b>Uncontrolled release</b>	Adverse Weather	1	No	Yes
<b>Uncontrolled release</b>	Blocked Sewer	1	No	Yes
<b>Uncontrolled release</b>	Broken Sewer Pipe	1	No	Yes
<b>Uncontrolled release</b>	EO caused by ragging or blocking	1	Yes	Yes
<b>Uncontrolled release</b>	EO caused by pump failure	1	No	Yes
<b>Uncontrolled release</b>	EO caused by ragging or blocking	1	No	Yes
<b>Uncontrolled release</b>	EO caused by ragging or blocking	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Broken Sewer Pipe	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	No
Uncontrolled release	Blocked Sewer	1	Yes	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	Screen not operating	1	No	No

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	29
Number of Incidents reported to the EPA via EDEN in 2021	29
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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
TBC	165218, 69284	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	163254, 69999	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	162947, 69892	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	162794, 70706	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	164503, 71238	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	165604, 70429	No	Medium	Not yet Assessed	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
TBC	165604, 70429	No	High	Meeting	Unknown	Unknown	Not Monitored
TBC	176798, 70341	No	Medium	Meeting	Unknown	3441864	Monitored
TBC	168307, 72008	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	168668, 69893	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	166610, 71491	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	170606, 72269	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	165261, 71317	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	164732, 69432	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	165014, 71472	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	170579, 69856	No	Medium	Meeting	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
TBC	172537, 69462	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	172787, 74182.	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	174518, 71126	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	175958, 72970	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	177328, 73293	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	173100, 69539	No	Medium	Not yet Assessed	Unknown	Unknown	Monitored
TBC	175339, 71488	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	177469, 71480	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	167920, 71735	No	Medium	Not Meeting	Unknown	Unknown	Not Monitored
TBC	167920, 71735	No	Medium	Not Meeting	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
TBC	169934, 73932	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	163148, 71116	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	164731, 69408	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	168764, 72117	No	Medium	Not Meeting	Unknown	Unknown	Not Monitored
TBC	168764, 72117	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	167119, 71590	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	164947, 71247	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	164256, 69387	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	165228, 69252	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	165228, 69252	No	Medium	Not yet Assessed	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
TBC	165228, 69252	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	165228, 69252	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	165228, 69252	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	165228, 69252	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	165228, 69252	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	165228, 69252	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	165207, 71185	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	165233, 71155	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	169117, 69210	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	172264, 72014	No	Medium	Not yet Assessed	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
TBC	171683, 69813	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	173151, 70547	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	171176, 72149	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	170606, 72269	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	169811, 72295	No	Medium	Meeting	Unknown	Unknown	Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	173033, 69515	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	165484, 71593	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	172699, 72880	No	Medium	Not yet Assessed	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
TBC	177975, 73141	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	TBC, TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	167607, 71505	No	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
S02	165745, 71653	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
S03	165992, 71741	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
S04	166772, 72081	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
S05	166965, 72158	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
S06	167053, 72194	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
S07	167468, 72138	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
S08	167435, 72645	Yes	Medium	Meeting	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
<b>S08</b>	167435, 72645	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S09</b>	167497, 72347	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S10</b>	167405, 73414	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S11</b>	167493, 73692	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S13</b>	167457, 73280	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S14</b>	167497, 72347	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S15</b>	167497, 72347	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S16</b>	167435, 72645	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S17</b>	167558, 72135	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S18</b>	167666, 72129	Yes	Medium	Meeting	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
<b>S19</b>	168077, 72051	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S19</b>	168077, 72051	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S19</b>	168077, 72051	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S20</b>	168764, 72117	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S21</b>	169349, 72330	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S22</b>	170463, 72270	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S23</b>	170702, 72270	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>S24</b>	170271, 72106	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S25</b>	168303, 71861	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S25</b>	168303, 71861	Yes	Medium	Not yet Assessed	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
<b>S26</b>	167920, 71735	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>S26</b>	167920, 71735	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>S26</b>	167920, 71735	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>S26</b>	167920, 71735	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>S27</b>	167532, 71538	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S28</b>	167441, 71545	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S29</b>	167259, 71520	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S30</b>	167184, 71500	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S30</b>	167184, 71500	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S30</b>	167184, 71500	Yes	Medium	Not yet Assessed	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
<b>S31</b>	166415, 71477	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S32</b>	165975, 71334	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S33</b>	164346, 69422	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S34</b>	171683, 69813	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S35</b>	165254, 71147	Yes	High	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S35</b>	165254, 71147	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S36</b>	165601, 70433	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S37</b>	165598, 70436	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S38</b>	165704, 69791	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S39</b>	166294, 69286	Yes	Medium	Meeting	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
<b>S40</b>	168668, 69893	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S41</b>	170193, 69770	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S42</b>	170045, 70085	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S43</b>	168830, 73441	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>S44</b>	171627, 71861	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S44</b>	171627, 71861	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S44</b>	171627, 71861	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S45</b>	168312, 70079	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S45</b>	168312, 70079	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S47</b>	167497, 72347	Yes	Medium	Meeting	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 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
<b>S48</b>	176680, 70534	Yes	Medium	Meeting	85	3441864	Monitored
<b>S49</b>	170768, 72079	Yes	Medium	Meeting	70	967130	Monitored
<b>SD04</b>	163247, 69974	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>SW20</b>	167255, 72152	Yes	Medium	Meeting	349	772191	Monitored
<b>SW21</b>	167386, 71575	Yes	Unknown	Not yet Assessed	257	462496	Monitored

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 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
<b>D0033-SIP:03</b>	Improvement in operation of, and reduction in frequency of discharge via, CS071 (S48N and S48S)	C	31/12/2020	Yes	Works Completed		
<b>D0033-SIP:04</b>	Upgrading of waste water works, as required, to ensure Storm Water Overflows comply with the criteria outlined in DoEHLG.	C	22/12/2015	Yes	Not Started		
<b>D0033-SIP:02</b>	Infiltration and inflow programme	C	22/12/2015	Yes	Not Started		
<b>D0033-SIP:01</b>	Cessation of discharge from SD02 (St Patrick's Bridge)	A	22/12/2015	Yes	Not Started		

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
<b>No additional improvements planned at this time.</b>				

## 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	Year included in AER	Included in this AER
Priority Substances Assessment	Yes	2012	No
Shellfish Impact Assessment	Yes		No
Toxicity of Final Effluent	Yes	2011	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
Has a Technical amendment/licence review application been submitted to the Agency by IW?	No
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	No
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	N/A



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

Signed:    Date: 30/08/2022

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

Appendix
Appendix 7.1 - Ambient monitoring summary

Cork City Council D0033-01 31-Dec-21

435 473 525 566 73 564 414 999 250

Table with columns: Report No, Station Code, Sample No, Date, Station Name, Sample Purpose, Station Ref. No., Tide, Sampled Depth, Measured Depth, pH, Conductivity, Salinity, Temp, DO, Total Oxidised Nitrogen, Ammonia, Total Nitrogen, Ortho-Phosphate, Chlorophyll-a, E. Coliforms, BOD, DO (% Saturation), D.O., 100% DO (fresh). Rows include data for stations 21-10006, 21-10800, and 21-32668.

Cork City Council D0033-01 31-Dec-21

435 473 525 566 73 564 414 999 250

Table with columns: Report No, Station Code, Sample No, Date, Station Name, Sample Purpose, Station Ref. No., Tide, Sampled Depth, Measured Depth, pH, Conductivity, Salinity, Temp, DO, Total Oxidised Nitrogen, Ammonia, Total Nitrogen, Ortho-Phosphate, Chlorophyll-a, E. Coliforms, BOD, DO (% Saturation), D.O., 100% DO (fresh). Rows include data for stations like Haulbowline, Blackrock Castle, Mid L. Mahon, and Tivoli.

**Cork City Council D0033-01**      **31-Dec-21**

435                      473 525                      566                      73                      564                      414                      999                      250

Report No	Station Code	Sample No	Date	Station Name	Sample Purpose	Station Ref. No.	Tide	Sampled Depth	Measured Depth	pH	Conductivity	Salinity	Temp	DO	Total Oxidised Nitrogen	Ammonia	Total Nitrogen	Ortho-Phosphate		Chlorophyll-a	E. Coliforms	BOD	DO (% Saturation)	D.O.	100% DO (fresh)
																		µg/l P	mg/l P						
21-12391	CW05003150LE8004	2021-37719	14/06/2021	Haulbowline	301	C5	Low	Top	14.10	8.1	38.5	27.4	16.3	8.3	0.41	0.0790	1.00	5.0	0.005	13.4	146	2.70	84.8	8.32	9.81
	CW05003150LE8004	2021-37720	14/06/2021	Haulbowline	301	C5	Low	Middle		8.2	39.6	28.3	16.5	8.4	0.34	0.0350	0.90	38.0	0.038	11.2	134	2.70	85.6	8.36	9.77
	CW05003150LE8004	2021-37721	14/06/2021	Haulbowline	301	C5	Low	Bottom		8.1	44.8	32.5	14.0	9.8	0.06	0.0830	0.70	5.0	0.005	1.0	74	1.60	95.5	9.84	10.31
	TW05003157LE4005	2021-37722	14/06/2021	End L. Mahon	201	C6	Low	Top	8.80	8.4	32.8	23.0	16.4	9.1	0.66	0.0350	1.10	5.0	0.005	10.4	31	2.60	92.5	9.05	9.79
	TW05003157LE4005	2021-37723	14/06/2021	End L. Mahon	201	C6	Low	Middle		8.2	38.4	27.3	16.7	7.6	0.39	0.0610	1.10	5.0	0.005	12.0	110	2.90	77.9	7.58	9.73
	TW05003157LE4005	2021-37724	14/06/2021	End L. Mahon	201	C6	Low	Bottom		8.2	40.3	28.8	15.9	8.5	0.35	0.0730	1.00	5.0	0.005	11.7	259	2.50	86.0	8.51	9.89
	TW04003159LE2005	2021-37725	14/06/2021	Blackrock Castle	201	C7	Low	Top	4.10	8.0	15.5	10.1	16.2	7.5	1.25	0.0710	1.70	5.0	0.005	6.9	820	1.50	76.7	7.54	9.83
	TW04003159LE2005	2021-37726	14/06/2021	Blackrock Castle	201	C7	Low	Middle		8.1	39.6	28.3	16.0	7.3	0.39	0.0970	1.00	71.0	0.071	17.4	108	2.60	74.2	7.32	9.87
	TW04003159LE2005	2021-37727	14/06/2021	Blackrock Castle	201	C7	Low	Bottom		8.1	40.8	29.2	15.1	8.5	0.33	0.1450	1.00	5.0	0.005	7.7	75	2.00	84.3	8.48	10.06
	TW05003157LE4004	2021-37728	14/06/2021	Mid L. Mahon	201	C8	Low	Top	8.40	8.4	32.9	20.0	16.1	8.3	0.67	0.0360	1.30	5.0	0.005	12.8	20	3.40	84.3	8.30	9.85
	TW05003157LE4004	2021-37729	14/06/2021	Mid L. Mahon	201	C8	Low	Middle		8.3	37.4	26.5	16.5	8.0	0.47	0.0550	1.00	5.0	0.005	14.7	75	3.10	81.6	7.97	9.77
	TW05003157LE4004	2021-37730	14/06/2021	Mid L. Mahon	201	C8	Low	Bottom		8.2	41.1	29.5	15.4	8.4	0.31	0.0660	1.10	5.0	0.005	8.3	120	2.60	83.8	8.38	10.00
	TW04003159LE2006	2021-37731	14/06/2021	Tivoli	201	C9	Low	Top	6.80	7.9	10.4	6.5	16.3	6.8	1.47	0.0810	1.90	12.0	0.012	4.0	1,850	1.40	69.6	6.83	9.81
	TW04003159LE2006	2021-37732	14/06/2021	Tivoli	201	C9	Low	Bottom		8.0	39.3	28.1	16.2	7.0	0.43	0.2000	1.10	10.0	0.010	10.7	84	2.20	71.0	6.98	9.83
	CW05003150LE8004	2021-37733	14/06/2021	Haulbowline	301	C5	High	Top	15.60	8.3	41.3	29.6	15.1	8.1	0.30	0.0540	0.90	5.0	0.005	2.9	5	2.10	80.5	8.10	10.06
	CW05003150LE8004	2021-37734	14/06/2021	Haulbowline	301	C5	High	Middle		8.2	43.8	31.7	14.4	7.6	0.11	0.0400	0.70	5.0	0.005	3.5	20	2.40	74.4	7.60	10.22
	CW05003150LE8004	2021-37735	14/06/2021	Haulbowline	301	C5	High	Bottom		8.1	46.0	33.4	13.2	8.8	0.07	0.0410	0.80	5.0	0.005	2.4	5	1.40	83.7	8.78	10.49
	TW05003157LE4005	2021-37736	14/06/2021	End L. Mahon	201	C6	High	Top	11.80	8.3	38.2	27.2	15.6	7.6	0.45	0.0500	0.80	5.0	0.005	6.1	20	2.40	76.3	7.60	9.95
	TW05003157LE4005	2021-37737	14/06/2021	End L. Mahon	201	C6	High	Middle		8.2	42.8	30.8	14.3	7.5	0.18	0.0470	0.80	5.0	0.005	4.8	5	2.20	73.3	7.50	10.24
	TW05003157LE4005	2021-37738	14/06/2021	End L. Mahon	201	C6	High	Bottom		8.2	44.7	32.4	13.6	9.0	0.10	0.0440	1.00	5.0	0.005	4.3	5	1.80	86.9	9.03	10.40
	TW04003159LE2005	2021-37739	14/06/2021	Blackrock Castle	201	C7	High	Top	10.20	8.0	16.9	11.1	16.7	7.5	1.35	0.0830	1.70	5.0	0.005	6.1	10	1.60	76.6	7.45	9.73
	TW04003159LE2005	2021-37740	14/06/2021	Blackrock Castle	201	C7	High	Middle		8.2	41.1	29.5	14.8	7.2	0.32	0.1420	1.00	31.0	0.031	7.5	5	2.00	70.6	7.15	10.13
	TW04003159LE2005	2021-37741	14/06/2021	Blackrock Castle	201	C7	High	Bottom		8.1	41.3	29.6	14.8	8.6	0.37	0.1400	1.10	5.0	0.005	5.6	5	2.00	84.4	8.55	10.13
	TW05003157LE4004	2021-37742	14/06/2021	Mid L. Mahon	201	C8	High	Top	11.40	8.3	36.1	25.5	15.9	7.4	0.53	0.0660	1.10	5.0	0.005	4.0	5	2.50	74.8	7.40	9.89
	TW05003157LE4004	2021-37743	14/06/2021	Mid L. Mahon	201	C8	High	Middle		8.2	42.2	30.4	14.7	7.5	0.22	0.0760	0.90	5.0	0.005	1.0	5	1.70	74.1	7.52	10.15
	TW05003157LE4004	2021-37744	14/06/2021	Mid L. Mahon	201	C8	High	Bottom		8.2	43.7	21.6	14.0	8.6	0.18	0.0570	0.80	5.0	0.005	2.7	5	1.60	83.5	8.61	10.31
	TW04003159LE2006	2021-37745	14/06/2021	Tivoli	201	C9	High	Top	9.20	7.8	9.4	5.9	16.8	6.5	1.48	0.0910	2.00	5.0	0.005	3.7	187	1.10	66.6	6.46	9.71
	TW04003159LE2006	2021-37746	14/06/2021	Tivoli	201	C9	High	Bottom		8.1	39.2	28.0	14.8	7.5	0.42	0.1730	1.10	10.0	0.010	1.0	5	1.40	74.1	7.50	10.13
21-12954	CW05003150LE8004	2021-39568	13/07/2021	Haulbowline	301	C5	Low	Top	14.10	8.2	43.7	31.6	16.7	7.2	0.12	0.1090	0.70	5.0	0.005	3.7	52	2.20	73.8	7.18	9.73
	CW05003150LE8004	2021-39569	13/07/2021	Haulbowline	301	C5	Low	Middle		8.2	44.3	32.1	16.7	7.1	0.10	0.0900	0.70	5.0	0.005	7.5	479	1.50	72.8	7.08	9.73
	CW05003150LE8004	2021-39570	13/07/2021	Haulbowline	301	C5	Low	Bottom		8.2	45.3	32.9	16.3	8.5	0.09	0.1030	0.60	5.0	0.005	5.6	187	2.60	86.9	8.52	9.81
	TW05003157LE4005	2021-39571	13/07/2021	End L. Mahon	201	C6	Low	Top	8.80	8.3	41.6	29.9	17.2	7.1	0.29	0.1010	0.80	5.0	0.005	8.3	75	0.50	73.9	7.11	9.62
	TW05003157LE4005	2021-39572	13/07/2021	End L. Mahon	201	C6	Low	Middle		8.2	42.6	30.7	18.2	6.4	0.19	0.1260	0.80	5.0	0.005	12.0	155	2.20	68.2	6.43	9.43
	TW05003157LE4005	2021-39573	13/07/2021	End L. Mahon	201	C6	Low	Bottom		8.2	42.9	30.9	18.2	8.6	0.18	0.1050	0.80	5.0	0.005	8.3	233	2.20	91.6	8.64	9.43
	TW04003159LE2005	2021-39574	13/07/2021	Blackrock Castle	201	C7	Low	Top	4.10	8.2	33.7	23.7	16.9	8.4	1.04	0.1500	1.30	23.0	0.023	3.7	228	1.60	87.1	8.44	9.69
	TW04003159LE2005	2021-39575	13/07/2021	Blackrock Castle	201	C7	Low	Middle		8.2	42.2	30.4	17.2	8.3	0.20	0.1520	0.90	12.0	0.012	6.7	41	2.60	86.5	8.33	9.62
	TW04003159LE2005	2021-39576	13/07/2021	Blackrock Castle	201	C7	Low	Bottom		8.2	41.9	30.1	16.8	8.4	0.17	0.1470	1.00	5.0	0.005	6.7	110	1.70	86.0	8.35	9.71
	TW05003157LE4004	2021-39577	13/07/2021	Mid L. Mahon	201	C8	Low	Top	8.40	8.3	39.9	28.5	17.7	7.4	0.35	0.1070	1.10	5.0	0.005	4.0	63	2.70	77.9	7.42	9.53
	TW05003157LE4004	2021-39578	13/07/2021	Mid L. Mahon	201	C8	Low	Middle		8.3	41.8	30.0	17.9	6.7	0.21	0.0950	0.90	33.0	0.033	18.2	85	2.80	70.6	6.70	9.49
	TW05003157LE4004	2021-39579	13/07/2021	Mid L. Mahon	201	C8	Low	Bottom		8.2	42.7	30.8	16.9	7.0	0.15	0.1280	1.00	5.0	0.005	12.0	145	1.80	72.6	7.03	9.69
	TW04003159LE2006	2021-39580	13/07/2021	Tivoli	201	C9	Low	Top	6.80	8.0	27.7	19.1	18.0	6.6	0.96	0.1780	1.70	27.0	0.027	8.0	1,178	1.30	70.1	6.64	9.47
	TW04003159LE2006	2021-39581	13/07/2021	Tivoli	201	C9	Low	Bottom		8.1	42.7	30.8	17.6	6.2	0.17	0.2010	1.00	50.0	0.050	11.7	41	2.00	65.2	6.22	9.55
	CW05003150LE8004	2021-39582	13/07/2021	Haulbowline	301	C5	High	Top	15.60	8.3	46.1	33.5	15.6	6.7	0.01	0.0630	0.50	5.0	0.005	10.4	10	1.80	67.0	6.67	9.95
	CW05003150LE8004	2021-39583	13/07/2021	Haulbowline	301	C5	High	Middle		8.3															

Cork City Council D0033-01 31-Dec-21

435 473 525 566 73 564 414 999 250

Table with columns: Report No, Station Code, Sample No, Date, Station Name, Sample Purpose, Station Ref. No., Tide, Sampled Depth, Measured Depth, pH, Conductivity, Salinity, Temp, DO, Total Oxidised Nitrogen, Ammonia, Total Nitrogen, Ortho-Phosphate, Chlorophyll-a, E. Coliforms, BOD, DO (% Saturation), D.O., 100% DO (fresh). Rows include data for stations 21-13791, 21-14304, and 21-44082.

Cork City Council D0033-01 31-Dec-21

435 473 525 566 73 564 414 999 250

Table with columns: Report No, Station Code, Sample No, Date, Station Name, Sample Purpose, Station Ref. No., Tide, Sampled Depth, Measured Depth, pH, Conductivity, Salinity, Temp, DO, Total Oxidised Nitrogen, Ammonia, Total Nitrogen, Ortho-Phosphate, Chlorophyll-a, E. Coliforms, BOD, DO (% Saturation), D.O., 100% DO (fresh). Rows include data for stations 21-15514, 21-16037, and 21-50574.

Station No.	Station Name	SampleCode	Irish Grid Reference		StationCode	DATE Sampled	pH	D.O. - Sat	B.O.D.	Temp.	Ortho-Phosphate (as P)	TON	Total Nitrogen	Ammonia N	Ammonia - NH4	Total Coliform	Faecal Coliform (E.Coli)	S.Solids	Cond.	Analyst	D.O.	100% DO (fresh)
			units	%			mg/l	C			mg/l					mg/l N	mg/l N				mg/l N	mg/l
			Eastng:	Northing:												Bacteria / 100mls	Bacteria / 100mls					
M01	Curragheen Road Bridge	CCRW/21/10001	162,843	69,176	RS19T050890	02/02/2021 00:00	7.2	73.2	1.6	9.5	0.096	0.49	0.54	0.12	0.149			23.6	291	Pat Foley	8.36	11.422
M01	Curragheen Road Bridge	CCRW/21/10002	162,843	69,176	RS19T050890	23/03/2021 00:00	7.6	80.4	0.7	9.4	0.051	1.12	1.23	0.02	0.031	8,212	1,632	5.2	282	Pat Foley	9.21	11.450
M01	Curragheen Road Bridge	CCRW/21/10003	162,843	69,176	RS19T050890	20/04/2021 00:00	7.6	81.9	1.0	10.0	0.033	0.50	0.59	0.00	0.001			2.0	295	Pat Foley	9.24	11.288
M01	Curragheen Road Bridge	CCRW/21/10004	162,843	69,176	RS19T050890	18/05/2021 00:00	7.5	80.5	1.3	11.0	0.068	0.76	0.89	0.05	0.061			4.8	293	Pat Foley	8.88	11.027
M01	Curragheen Road Bridge	CCRW/21/10005	162,843	69,176	RS19T050890	22/06/2021 00:00	7.6	78.5	0.6	11.4	0.053	0.66	0.68	0.04	0.053	6,564	1,058	1.2	291	Pat Foley	8.58	10.926
M01	Curragheen Road Bridge	CCRW/21/10006	162,843	69,176	RS19T050890	14/07/2021 00:00	7.6	68.4	0.7	14.1	0.070	0.51	0.55	0.17	0.221			0.4	335	Pat Foley	7.03	10.283
M01	Curragheen Road Bridge	CCRW/21/10007	162,843	69,176	RS19T050890	17/08/2021 00:00	7.7	132.9	0.7	14.5	0.071	0.66	0.70	0.04	0.045			0.4	351	Pat Foley	13.55	10.194
M01	Curragheen Road Bridge	CCRW/21/10008	162,843	69,176	RS19T050890	14/09/2021 00:00	7.7	74.7	0.8	15.0	0.093	0.33	0.41	0.09	0.121			2.0	343	Pat Foley	7.53	10.084
M01	Curragheen Road Bridge	CCRW/21/10009	162,843	69,176	RS19T050890	09/11/2021 00:00	7.5	76.5	1.2	12.7	0.068	3.78	3.87	0.04	0.047			6.0	313	Pat Foley	8.12	10.608
M01	Curragheen Road Bridge	CCRW/21/10010	162,843	69,176	RS19T050890	14/12/2021 00:00	7.8	77.4	0.6	9.7	0.050	6.72	6.98	0.05	0.060			1.2	325	Pat Foley	8.80	11.368
M02	Carrigrohane Bridge	CCRW/21/10011	162,863	71,034	RS19C120110	02/02/2021 00:00	7.3	71.5	1.5	9.3	0.076	0.46	0.52	0.11	0.137			13.2	300	Pat Foley	8.21	11.477
M02	Carrigrohane Bridge	CCRW/21/10012	162,863	71,034	RS19C120110	23/03/2021 00:00	7.5	80.3	0.5	9.6	0.048	0.97	1.13	0.05	0.070	12,210	9,683	2.8	336	Pat Foley	9.15	11.395
M02	Carrigrohane Bridge	CCRW/21/10013	162,863	71,034	RS19C120110	20/04/2021 00:00	7.6	76.8	1.1	10.4	0.030	0.09	0.16	0.05	0.067			1.2	362	Pat Foley	8.59	11.182
M02	Carrigrohane Bridge	CCRW/21/10014	162,863	71,034	RS19C120110	18/05/2021 00:00	7.5	79.4	2.5	11.6	0.110	0.92	1.06	0.12	0.160			7.6	307	Pat Foley	8.64	10.876
M02	Carrigrohane Bridge	CCRW/21/10015	162,863	71,034	RS19C120110	22/06/2021 00:00	7.6	74.1	0.5	12.3	0.048	0.91	0.95	0.04	0.047	10,880	1,120	1.2	356	Pat Foley	7.93	10.704
M02	Carrigrohane Bridge	CCRW/21/10016	162,863	71,034	RS19C120110	14/07/2021 00:00	7.6	65.7	0.5	14.4	0.051	0.26	0.34	0.15	0.193			0.4	432	Pat Foley	6.71	10.216
M02	Carrigrohane Bridge	CCRW/21/10017	162,863	71,034	RS19C120110	17/08/2021 00:00	7.6	126.5	0.7	14.6	0.051	0.07	0.10	0.04	0.057			1.2	458	Pat Foley	12.87	10.172
M02	Carrigrohane Bridge	CCRW/21/10018	162,863	71,034	RS19C120110	14/09/2021 00:00	7.7	67.3	0.9	14.6	0.080	0.46	0.54	0.07	0.087			1.6	394	Pat Foley	6.85	10.172
M02	Carrigrohane Bridge	CCRW/21/10019	162,863	71,034	RS19C120110	09/11/2021 00:00	7.5	83.3	1.0	12.7	0.060	3.22	3.53	0.03	0.036			2.4	347	Pat Foley	8.84	10.608
M02	Carrigrohane Bridge	CCRW/21/10020	162,863	71,034	RS19C120110	14/12/2021 00:00	7.7	74.2	0.9	9.6	0.055	5.60	6.01	0.05	0.060			2.8	366	Pat Foley	8.46	11.395
M03	County Hall	CCRW/21/10021	165,003	71,212	RS19C120740	02/02/2021 00:00	7.4	67.9	1.6	9.2	0.096	0.33	0.41	0.11	0.142			3.6	294	Pat Foley	7.81	11.505
M03	County Hall	CCRW/21/10022	165,003	71,212	RS19C120740	23/03/2021 00:00	7.6	70.9	0.7	9.8	0.045	1.06	1.22	0.19	0.247	1,323	395	2.0	357	Pat Foley	8.04	11.341
M03	County Hall	CCRW/21/10023	165,003	71,212	RS19C120740	20/04/2021 00:00	7.6	65.9	1.3	10.4	0.026	0.37	0.41	0.14	0.178			2.8	379	Pat Foley	7.37	11.182
M03	County Hall	CCRW/21/10024	165,003	71,212	RS19C120740	18/05/2021 00:00	7.7	69.8	3.0	11.1	0.095	0.79	0.98	0.20	0.251			10.0	306	Pat Foley	7.68	11.002
M03	County Hall	CCRW/21/10025	165,003	71,212	RS19C120740	22/06/2021 00:00	7.7	71.3	0.6	12.4	0.048	0.68	0.75	0.24	0.304	8,704	2,142	0.8	376	Pat Foley	7.61	10.680
M03	County Hall	CCRW/21/10026	165,003	71,212	RS19C120740	14/07/2021 00:00	7.7	54.5	0.8	14.5	0.051	0.43	0.52	0.54	0.699			1.2	460	Pat Foley	5.56	10.194
M03	County Hall	CCRW/21/10027	165,003	71,212	RS19C120740	17/08/2021 00:00	7.6	72.9	1.2	14.2	0.040	0.46	0.55	0.54	0.690			2.0	486	Pat Foley	7.48	10.261
M03	County Hall	CCRW/21/10028	165,003	71,212	RS19C120740	14/09/2021 00:00	7.7	54.7	1.2	14.6	0.071	0.33	0.42	0.35	0.448			2.4	381	Pat Foley	5.56	10.172
M03	County Hall	CCRW/21/10029	165,003	71,212	RS19C120740	09/11/2021 00:00	7.6	70.7	1.2	12.7	0.073	3.36	3.64	0.22	0.278			1.6	364	Pat Foley	7.50	10.608
M03	County Hall	CCRW/21/10030	165,003	71,212	RS19C120740	14/12/2021 00:00	7.8	70.6	0.8	9.6	0.053	6.86	7.28	0.21	0.270			2.0	387	Pat Foley	8.04	11.395
M04	Bandon Road	CCRW/21/10031	164,101	68,782	RS19G040140	02/02/2021 00:00	6.9	72.6	1.3	10.2	0.100	0.30	0.33	0.20	0.260			21.2	366	Pat Foley	8.16	11.235
M04	Bandon Road	CCRW/21/10032	165,003	71,212	RS19G040140	23/03/2021 00:00	6.9	81.5	0.4	10.4	0.036	1.38	1.44	0.04	0.051	410	71	2.0	396	Pat Foley	9.11	11.182
M04	Bandon Road	CCRW/21/10033	165,003	71,212	RS19G040140	20/04/2021 00:00	6.9	73.9	0.7	10.5	0.033	1.10	1.13	0.00	0.001			1.2	438	Pat Foley	8.25	11.156
M04	Bandon Road	CCRW/21/10034	165,003	71,212	RS19G040140	18/05/2021 00:00	6.7	81.7	0.7	11.4	0.056	0.99	1.03	0.04	0.052			2.0	429	Pat Foley	8.93	10.926
M04	Bandon Road	CCRW/21/10035	165,003	71,212	RS19G040140	22/06/2021 00:00	6.7	79.4	0.5	11.7	0.058	0.72	0.76	0.06	0.080	4,082	1,455	0.4	425	Pat Foley	8.62	10.851
M04	Bandon Road	CCRW/21/10036	165,003	71,212	RS19G040140	14/07/2021 00:00	7.1	72.9	0.3	13.6	0.046	0.63	0.70	0.16	0.209			0.4	494	Pat Foley	7.58	10.397
M04	Bandon Road	CCRW/21/10037	165,003	71,212	RS19G040140	17/08/2021 00:00	7.1	80.4	0.6	14.5	0.065	0.91	0.93	0.02	0.031			0.8	510	Pat Foley	8.20	10.194
M04	Bandon Road	CCRW/21/10038	165,003	71,212	RS19G040140	14/09/2021 00:00	6.9	69.9	0.3	14.3	0.051	0.70	0.72	0.06	0.071			1.2	499	Pat Foley	7.16	10.238
M04	Bandon Road	CCRW/21/10039	165,003	71,212	RS19G040140	09/11/2021 00:00	7.0	74.1	0.5	13.3	0.046	5.01	5.43	0.04	0.049			2.0	428	Pat Foley	7.76	10.466
M04	Bandon Road	CCRW/21/10040	165,003	71,212	RS19G040140	14/12/2021 00:00	7.6	87.3	0.4	10.6	0.046	7.56	7.91	0.05	0.060			0.4	451	Pat Foley	9.72	11.130
M05	Woodhaven Estate	CCRW/21/10041	164,344	69,415	RS19G040190	02/02/2021 00:00	7.1	71.9	2.5	9.7	0.100	0.39	0.44	0.17	0.220			63.2	398	Pat Foley	8.17	11.368
M05	Woodhaven Estate	CCRW/21/10042	164,344	69,415	RS19G040190	23/03/2021 00:00	7.2	77.8	0.8	10.3	0.066	1.31	1.42	0.20	0.252	19,863	4,352	3.2	429	Pat Foley	8.72	11.209
M05	Woodhaven Estate	CCRW/21/10043	164,344	69,415	RS19G040190	20/04/2021 00:00	7.2	75.6	1.8	10.6	0.046	0.79	0.83	0.03	0.043			10.0	448	Pat Foley	8.41	11.130
M05	Woodhaven Estate	CCRW/21/10044	164,344	69,415	RS19G040190	18/05/2021 00:00	7.3	68.6	1.7	12.4	0.085	0.72	0.81	0.17	0.213			3.6	460	Pat Foley	7.33	10.680
M05	Woodhaven Estate	CCRW/21/10045	164,344	69,415	RS19G040190	22/06/2021 00:00	7.2	70.4	1.4	12.1	0.098	1.18	1.23	0.06	0.073	24,196	1,529	12.4	442	Pat Foley	7.57	10.753
M05	Woodhaven Estate	CCRW/21/10046	164,344	69,415	RS19G040190	14/07/2021 00:00	7.3	67.5	1.0	14.1	0.126	0.43	0.47	0.24	0.311			3.6	507	Pat Foley	6.94	10.283



Station No.	Station Name	SampleCode	Irish Grid Reference		StationCode	DATE Sampled	pH	D.O. - Sat	B.O.D.	Temp.	Ortho-Phosphate (as P)	TON	Total Nitrogen	Ammonia N	Ammonia - NH4	Total Coliform	Faecal Coliform (E.Coli)	S.Solids	Cond.	Analyst	D.O.	100% DO (fresh)
			pH units	%			mg/l	C	mg/l	mg/l N	mg/l N		mg/l N	mg/l	Bacteria / 100mls	Bacteria / 100mls	mg/l	uS/cm	mg/l		mg/l	
			Eastings:	Northing:																		
M06	Sandbrook Estate	CCRW/21/10051	165,278	69,503	RS19G040300	02/02/2021 00:00	7.6	68.1	2.2	9.7	0.081	0.42	0.51	0.19	0.246			14.0	371	Pat Foley	7.74	11.368
M06	Sandbrook Estate	CCRW/21/10052	164,344	69,415	RS19G040300	23/03/2021 00:00	7.7	52.3	0.6	10.3	0.063	1.45	1.56	0.20	0.253	6,455	1,870	3.9	489	Pat Foley	5.86	11.209
M06	Sandbrook Estate	CCRW/21/10053	164,344	69,415	RS19G040300	20/04/2021 00:00	7.7	50.2	1.2	10.7	0.051	0.28	0.40	0.12	0.157			4.8	493	Pat Foley	5.57	11.104
M06	Sandbrook Estate	CCRW/21/10054	164,344	69,415	RS19G040300	18/05/2021 00:00	7.7	42.8	1.1	12.0	0.078	0.59	0.69	0.20	0.255			4.0	471	Pat Foley	4.61	10.777
M06	Sandbrook Estate	CCRW/21/10055	164,344	69,415	RS19G040300	22/06/2021 00:00	7.9	65.2	1.3	14.3	0.028	0.53	0.60	0.06	0.083	7,925	545	4.8	240	Pat Foley	6.68	10.238
M06	Sandbrook Estate	CCRW/21/10056	164,344	69,415	RS19G040300	14/07/2021 00:00	7.7	37.8	1.3	14.4	0.101	0.20	0.28	0.49	0.631			4.0	553	Pat Foley	3.86	10.216
M06	Sandbrook Estate	CCRW/21/10057	164,344	69,415	RS19G040300	17/08/2021 00:00	7.7	54.4	1.4	14.9	0.103	0.12	0.21	0.36	0.458			4.0	558	Pat Foley	5.50	10.106
M06	Sandbrook Estate	CCRW/21/10058	164,344	69,415	RS19G040300	14/09/2021 00:00	7.7	33.9	1.1	7.7	0.091	0.43	0.54	0.27	0.341			8.8	509	Pat Foley	4.04	11.931
M06	Sandbrook Estate	CCRW/21/10059	164,344	69,415	RS19G040300	09/11/2021 00:00	7.6	107.0	1.9	13.4	0.086	5.18	5.29	0.13	0.163			8.8	502	Pat Foley	11.17	10.443
M06	Sandbrook Estate	CCRW/21/10060	164,344	69,415	RS19G040300	14/12/2021 00:00	7.8	66.1	1.0	9.8	0.081	7.87	8.32	0.20	0.260			4.0	548	Pat Foley	7.50	11.341
M07	Clashdub Road	CCRW/21/10061	165,697	70,336	RS19G040490	02/02/2021 00:00	7.6	56.8	1.4	9.6	0.053	0.26	0.34	0.17	0.222			12.0	439	Pat Foley	6.47	11.395
M07	Clashdub Road	CCRW/21/10062	165,697	70,336	RS19G040490	23/03/2021 00:00	7.7	51.6	1.2	10.6	0.060	1.95	2.08	0.20	0.256	10,715	1,725	4.8	500	Pat Foley	5.74	11.130
M07	Clashdub Road	CCRW/21/10063	165,697	70,336	RS19G040490	20/04/2021 00:00	7.6	42.3	2.0	11.0	0.088	0.24	0.38	0.12	0.151			19.6	474	Pat Foley	4.67	11.027
M07	Clashdub Road	CCRW/21/10064	165,697	70,336	RS19G040490	18/05/2021 00:00	7.7	40.0	1.7	12.9	0.096	0.82	0.95	0.19	0.238			7.2	439	Pat Foley	4.22	10.560
M07	Clashdub Road	CCRW/21/10065	165,697	70,336	RS19G040490	22/06/2021 00:00	7.7	46.7	0.8	13.5	0.068	0.59	0.66	0.14	0.176	28,970	1,045	2.0	427	Pat Foley	4.87	10.420
M07	Clashdub Road	CCRW/21/10066	165,697	70,336	RS19G040490	14/07/2021 00:00	7.7	26.9	1.1	14.8	0.106	0.03	0.10	0.54	0.695			3.2	551	Pat Foley	2.72	10.128
M07	Clashdub Road	CCRW/21/10067	165,697	70,336	RS19G040490	17/08/2021 00:00	7.7	64.0	1.7	15.0	0.173	0.18	0.28	0.37	0.471			1.6	545	Pat Foley	6.45	10.084
M07	Clashdub Road	CCRW/21/10068	165,697	70,336	RS19G040490	14/09/2021 00:00	7.7	28.7	1.0	15.5	0.103	0.12	0.21	0.32	0.411			4.4	495	Pat Foley	2.86	9.976
M07	Clashdub Road	CCRW/21/10069	165,697	70,336	RS19G040490	09/11/2021 00:00	7.6	42.5	1.5	13.4	0.100	4.23	4.68	0.16	0.204			9.6	524	Pat Foley	4.44	10.443
M07	Clashdub Road	CCRW/21/10070	165,697	70,336	RS19G040490	14/12/2021 00:00	7.7	70.4	1.2	9.7	0.065	4.83	5.22	0.13	0.170			4.4	500	Pat Foley	8.00	11.368
M08	Glasheen Bridge	CCRW/21/10071	165,401	70,768	RS19G040700	02/02/2021 00:00	7.4	58.4	1.6	9.8	0.075	0.39	0.45	0.15	0.197			10.0	484	Pat Foley	6.62	11.341
M08	Glasheen Bridge	CCRW/21/10072	165,401	70,768	RS19G040700	23/03/2021 00:00	7.6	61.3	1.4	10.3	0.090	1.77	1.90	0.18	0.237	3,970	675	22.4	495	Pat Foley	6.87	11.209
M08	Glasheen Bridge	CCRW/21/10073	165,401	70,768	RS19G040700	20/04/2021 00:00	7.6	53.1	2.1	11.0	0.096	0.11	0.31	0.13	0.161			26.0	459	Pat Foley	5.86	11.027
M08	Glasheen Bridge	CCRW/21/10074	165,401	70,768	RS19G040700	18/05/2021 00:00	7.7	48.1	2.1	12.0	0.103	0.50	0.61	0.20	0.251			5.6	395	Pat Foley	5.18	10.777
M08	Glasheen Bridge	CCRW/21/10075	165,401	70,768	RS19G040700	22/06/2021 00:00	7.7	55.1	0.9	13.2	0.080	0.58	0.65	0.19	0.250	24,420	4,195	6.0	395	Pat Foley	5.78	10.490
M08	Glasheen Bridge	CCRW/21/10076	165,401	70,768	RS19G040700	14/07/2021 00:00	6.6	41.7	1.2	15.0	0.105	0.20	0.30	0.49	0.627			2.8	549	Pat Foley	4.21	10.084
M08	Glasheen Bridge	CCRW/21/10077	165,401	70,768	RS19G040700	18/05/2021 00:00	7.7	67.3	1.2	15.3	0.111	0.07	0.13	0.26	0.340			2.0	541	Pat Foley	6.74	10.019
M08	Glasheen Bridge	CCRW/21/10078	165,401	70,768	RS19G040700	14/09/2021 00:00	7.6	44.9	1.2	15.7	0.111	0.96	1.04	0.23	0.294			3.6	479	Pat Foley	4.46	9.934
M08	Glasheen Bridge	CCRW/21/10079	165,401	70,768	RS19G040700	09/11/2021 00:00	7.5	55.3	1.3	13.4	0.076	3.05	3.58	0.14	0.178			6.4	500	Pat Foley	5.77	10.443
M08	Glasheen Bridge	CCRW/21/10080	165,401	70,768	RS19G040700	14/12/2021 00:00	7.4	67.6	1.3	9.7	0.055	4.72	5.14	0.07	0.090			2.8	546	Pat Foley	7.69	11.368
M09	Blackstone Bridge	CCRW/21/10081	165,691	74,463	RS19B140110	19/01/2021 00:00	7.6	104.5	1.3	10.4	0.065	0.25	0.29	0.06	0.080			7.0	348	Liz O'Leary	11.69	11.182
M09	Blackstone Bridge	CCRW/21/10082	165,691	74,463	RS19B140110	22/02/2021 00:00	7.5	75.4		8.3	0.052	0.45	0.50	0.05	0.070			5.0	269	Liz O'Leary	8.87	11.757
M09	Blackstone Bridge	CCRW/21/10083	165,691	74,463	RS19B140110	18/03/2021 00:00	7.7	76.8	1.5	10.4	0.052	1.91	2.07	0.03	0.040			7.0	302	Liz O'Leary	8.59	11.182
M09	Blackstone Bridge	CCRW/21/10084	165,691	74,463	RS19B140110	13/04/2021 00:00	7.8	79.7	4.3	8.8	0.043	1.09	1.19	0.05	0.060	1,163	75	16.0	312	Liz O'Leary	9.26	11.616
M09	Blackstone Bridge	CCRW/21/10085	165,691	74,463	RS19B140110	04/05/2021 00:00	8.0	85.5	2.1	10.6	0.045	0.89	0.99	0.02	0.030			11.0	315	Liz O'Leary	9.52	11.130
M09	Blackstone Bridge	CCRW/21/10086	165,691	74,463	RS19B140110	15/06/2021 00:00	7.7	81.9	1.7	13.8	0.028	0.80	0.90	0.03	0.040	4,973	103	7.0	306	Liz O'Leary	8.48	10.351
M09	Blackstone Bridge	CCRW/21/10087	165,691	74,463	RS19B140110	06/07/2021 00:00	7.7	70.8	1.4	13.5	0.033	0.76	0.85	0.02	0.030			7.0	339	Liz O'Leary	7.38	10.420
M09	Blackstone Bridge	CCRW/21/10088	165,691	74,463	RS19B140110	16/08/2021 00:00	7.1	66.8	1.2	14.4	0.043	0.36	0.44	0.05	0.060			10.0	344	Liz O'Leary	6.82	10.216
M09	Blackstone Bridge	CCRW/21/10089	165,691	74,463	RS19B140110	14/09/2021 00:00	7.2	79.0	2.0	14.3	0.060	0.42	0.54	0.07	0.090			9.0	366	Liz O'Leary	8.09	10.238
M09	Blackstone Bridge	CCRW/21/10090	165,691	74,463	RS19B140110	12/10/2021 00:00	7.3	59.5	3.0	10.6	0.037	2.37	2.58	0.05	0.060			9.0	398	Liz O'Leary	6.62	11.130
M10	Kilnap	CCRW/21/10091	166,291	74,796	RS19G880990	19/01/2021 00:00	7.7	112.8	2.8	10.3	0.088	0.32	0.39	0.05	0.060			11.0	299	Liz O'Leary	12.64	11.209
M10	Kilnap	CCRW/21/10092	166,291	74,796	RS19G880990	22/02/2021 00:00	7.5	80.5		8.2	0.057	0.76	0.83	0.05	0.060			6.0	251	Liz O'Leary	9.49	11.786
M10	Kilnap	CCRW/21/10093	166,291	74,796	RS19G880990	18/03/2021 00:00	7.7	83.9	1.9	9.8	0.063	0.51	0.68	0.03	0.040			6.0	269	Liz O'Leary	9.51	11.341
M10	Kilnap	CCRW/21/10094	166,291	74,796	RS19G880990	13/04/2020 00:00	8.2	75.8	1.0	8.2	0.043	0.99	1.12	0.05	0.060	2,046	241	2.0	282	Liz O'Leary	8.93	11.786
M10	Kilnap	CCRW/21/10095	166,291	74,796	RS19G880990	04/05/2021 00:00	8.3	75.7	1.7	10.4	0.052	0.59	0.68	0.02	0.030			6.0	285	Liz O'Leary	8.46	11.182
M10	Kilnap	CCRW/21/10096	166,291	74,796	RS19G880990	15/06/2021 00:00	8.2	79.0	2.4	13.4	0.062	1.05	1.18	0.03	0.040	4,308	463	9.0	282	Liz O'Leary	8.25	10.443
M10	Kilnap	CCRW/21/10097	166,291	74,796	RS19G880990	06/07/2021 00:00	8.2	76.9	2.3	13.4	0.100	0.95	1.06	0.02	0.020			6.0	320	Liz O'Leary	8.03	10.443
M10	Kilnap	CCRW/21/10098	166,291	74,796	RS19G880990	16/08/2021 00:00	7.8	86.2	1.3	15.1	0.126	0.42	0.50	0.04	0.050			6.0	331	Liz O'Leary	8.67	10.062
M10	Kilnap	CCRW/21/10099	166,291	74,796	RS19G880990	14/09/2021 00:00	7.7	107.5	2.6	14.9	0.184	0.38	0.52	0.06	0.080			6.0	323	Liz O'Leary	10.86	10.106
M10	Kilnap	CCRW/21/10100	166,291	74,796	RS19G880990	12/10/2021 00:00	7.8	72.6	1.3	10	0.097	1.68	1.99	0.05	0.070			13.0	324	Liz O'Leary	8.2	11.288

Station No.	Station Name	SampleCode	Irish Grid Reference		StationCode	DATE Sampled	pH	D.O. - Sat	B.O.D.	Temp.	Ortho-Phosphat e (as P)	TON	Total Nitrogen	Ammonia N	Ammonia - NH4	Total Coliform	Faecal Coliform (E.Coli)	S.Solids	Cond.	Analyst	D.O.	100% DO (fresh)
			units	%			mg/l	C			mg/l					mg/l N	mg/l N				mg/l N	mg/l
			Eastng:	Northing:												Bacteria / 100mls	Bacteria / 100mls					
M11	Fitz's Boreen	CCRW/21/10101	166,925	74,246	RS19B140300	19/01/2021 00:00	7.7	82.8	1.1	9.6	0.077	0.34	0.37	0.05	0.070			7.0	328	Liz O'Leary	9.43	11.395
M11	Fitz's Boreen	CCRW/21/10102	166,925	74,246	RS19B140300	22/02/2021 00:00	7.4	78.7		8.2	0.058	0.50	0.56	0.06	0.080			5.0	262	Liz O'Leary	9.28	11.786
M11	Fitz's Boreen	CCRW/21/10103	166,925	74,246	RS19B140300	18/03/2021 00:00	7.6	84.3	1.2	10.1	0.060	1.34	1.52	0.04	0.050			3.0	285	Liz O'Leary	9.49	11.261
M11	Fitz's Boreen	CCRW/21/10104	166,925	74,246	RS19B140300	13/04/2021 00:00	8.1	87.4	1.1	8.3	0.045	1.10	1.17	0.06	0.080	5,898	300	3.0	295	Liz O'Leary	10.28	11.757
M11	Fitz's Boreen	CCRW/21/10105	166,925	74,246	RS19B140300	04/05/2021 00:00	8.1	83.7	1.9	10.6	0.062	0.80	0.92	0.19	0.240			2.0	304	Liz O'Leary	9.32	11.130
M11	Fitz's Boreen	CCRW/21/10106	166,925	74,246	RS19B140300	15/06/2021 00:00	8.1	83.4	1.0	14	0.053	0.78	0.85	0.03	0.040	8,620	540	4.4	294	Liz O'Leary	8.6	10.306
M11	Fitz's Boreen	CCRW/21/10107	166,925	74,246	RS19B140300	06/07/2021 00:00	7.9	72.7	1.4	13.7	0.068	0.66	0.79	0.03	0.040			4.0	333	Liz O'Leary	7.54	10.374
M11	Fitz's Boreen	CCRW/21/10108	166,925	74,246	RS19B140300	16/08/2021 00:00	7.6	81.8	1.0	14.9	0.092	0.62	0.69	0.02	0.030			2.0	348	Liz O'Leary	8.27	10.106
M11	Fitz's Boreen	CCRW/21/10109	166,925	74,246	RS19B140300	14/09/2021 00:00	7.5	101.4	1.2	14.9	0.142	0.18	0.32	0.15	0.190			2.4	336	Liz O'Leary	10.25	10.106
M11	Fitz's Boreen	CCRW/21/10110	166,925	74,246	RS19B140300	12/10/2021 00:00	7.7	72.9	1.0	10.6	0.087	1.69	1.90	0.08	0.100			4.0	352	Liz O'Leary	8.11	11.130
M12	Blackpool	CCRW/21/10111	167,422	73,340	RS19B140800	19/01/2021 00:00	7.5	73.5	2.8	9.6	0.100	0.39	0.47	0.05	0.060			23.0	341	Liz O'Leary	8.38	11.395
M12	Blackpool	CCRW/21/10112	167,422	73,340	RS19B140800	22/02/2021 00:00	7.2	102.9		18	0.063	0.46	0.53	0.04	0.050			4.0	266	Liz O'Leary	9.74	9.467
M12	Blackpool	CCRW/21/10113	167,422	73,340	RS19B140800	18/03/2021 00:00	7.6	75.1	1.3	9.8	0.058	1.43	1.59	0.02	0.030			2.0	291	Liz O'Leary	8.52	11.341
M12	Blackpool	CCRW/21/10114	167,422	73,340	RS19B140800	13/04/2021 00:00	8.0	82.1	1.3	8.9	0.042	1.09	1.19	0.04	0.050	8,080	3,515	3.0	307	Liz O'Leary	9.51	11.588
M12	Blackpool	CCRW/21/10115	167,422	73,340	RS19B140800	04/05/2021 00:00	8.0	77.8	1.5	9.6	0.053	0.64	0.73	0.03	0.040			4.0	317	Liz O'Leary	8.86	11.395
M12	Blackpool	CCRW/21/10116	167,422	73,340	RS19B140800	15/06/2021 00:00	8.1	84.7	1.0	13.6	0.050	0.78	0.85	0.02	0.030	10,715	315	5.2	305	Liz O'Leary	8.81	10.397
M12	Blackpool	CCRW/21/10117	167,422	73,340	RS19B140800	06/07/2021 00:00	7.8	71.6	1.7	13.2	0.067	0.66	0.75	0.02	0.030			2.0	348	Liz O'Leary	7.51	10.490
M12	Blackpool	CCRW/21/10118	167,422	73,340	RS19B140800	16/08/2021 00:00	7.4	76.1	1.0	14.9	0.082	0.84	0.91	0.03	0.040			4.0	369	Liz O'Leary	7.69	10.106
M12	Blackpool	CCRW/21/10119	167,422	73,340	RS19B140800	14/09/2021 00:00	7.3	102.3	1.5	15.3	0.128	0.32	0.46	0.05	0.070			3.0	348	Liz O'Leary	10.25	10.019
M12	Blackpool	CCRW/21/10120	167,422	73,340	RS19B140800	12/10/2021 00:00	7.6	77.6	1.0	10.5	0.077	2.18	2.43	0.05	0.060			2.0	366	Liz O'Leary	8.66	11.156
M13	Glen Rec. Park	CCRW/21/10121	168,942	73,453	RS19G090400	19/01/2021 00:00	7.4	77.4	5.7	9.2	0.159	0.17	0.25	0.15	0.190			42.0	405	Liz O'Leary	8.91	11.505
M13	Glen Rec. Park	CCRW/21/10122	168,942	73,453	RS19G090400	22/02/2021 00:00	7.2	76.4		8.1	0.075	0.50	0.57	0.09	0.120			6.0	280	Liz O'Leary	9.03	11.814
M13	Glen Rec. Park	CCRW/21/10123	168,942	73,453	RS19G090400	18/03/2021 00:00	7.5	74.6	1.2	9.9	0.077	1.18	1.31	0.06	0.080			4.0	312	Liz O'Leary	8.44	11.315
M13	Glen Rec. Park	CCRW/21/10124	168,942	73,453	RS19G090400	13/04/2021 00:00	8.0	74.4	2.5	7.8	0.118	0.84	0.94	0.14	0.180	23,055	4,795	25.0	337	Liz O'Leary	8.85	11.902
M13	Glen Rec. Park	CCRW/21/10125	168,942	73,453	RS19G090400	04/05/2021 00:00	8.0	73.6	1.0	9.8	0.075	0.79	0.86	0.12	0.150			3.0	340	Liz O'Leary	8.35	11.341
M13	Glen Rec. Park	CCRW/21/10126	168,942	73,453	RS19G090400	15/06/2021 00:00	7.9	78.0	1.4	13.2	0.092	0.87	0.97	0.05	0.070	99,315	17,240	4.4	332	Liz O'Leary	8.18	10.490
M13	Glen Rec. Park	CCRW/21/10127	168,942	73,453	RS19G090400	06/07/2021 00:00	7.8	68.0	3.2	13.3	0.112	0.32	0.45	0.05	0.060			10.4	361	Liz O'Leary	7.12	10.466
M13	Glen Rec. Park	CCRW/21/10128	168,942	73,453	RS19G090400	16/08/2021 00:00	7.5	75.7	1.0	14.4	0.097	0.28	0.34	0.04	0.050			2.4	385	Liz O'Leary	7.73	10.216
M13	Glen Rec. Park	CCRW/21/10129	168,942	73,453	RS19G090400	14/09/2021 00:00	7.4	83.4	9.0	15.3	0.646	0.21	1.09	5.91	7.600			9.0	417	Liz O'Leary	8.36	10.019
M13	Glen Rec. Park	CCRW/21/10130	168,942	73,453	RS19G090400	12/10/2021 00:00	7.5	73.6	1.9	10.9	0.195	2.04	2.30	0.46	0.590			5.0	389	Liz O'Leary	8.14	11.053
M14	Spring Lane	CCRW/21/10131	167,868	73,539	RS19G090800	19/01/2021 00:00	7.4	79.9	2.0	9.5	0.132	0.45	0.51	0.07	0.090			27.0	435	Liz O'Leary	9.13	11.422
M14	Spring Lane	CCRW/21/10132	167,868	73,539	RS19G090800	22/02/2021 00:00	7.6	78.6		8.7	0.085	0.65	0.73	0.08	0.100			6.4	285	Liz O'Leary	9.15	11.644
M14	Spring Lane	CCRW/21/10133	167,868	73,539	RS19G090800	18/03/2021 00:00	7.3	76.1	1.5	9.6	0.077	1.00	1.15	0.05	0.060			4.0	321	Liz O'Leary	8.67	11.395
M14	Spring Lane	CCRW/21/10134	167,868	73,539	RS19G090800	13/04/2021 00:00	8.1	74.6	1.0	7	0.073	1.24	1.40	0.09	0.110	18,175	853	3.0	345	Liz O'Leary	9.05	12.139
M14	Spring Lane	CCRW/21/10135	167,868	73,539	RS19G090800	04/05/2021 00:00	8.1	72.3	1.7	9.4	0.103	0.80	0.87	0.05	0.060			5.0	344	Liz O'Leary	8.28	11.450
M14	Spring Lane	CCRW/21/10136	167,868	73,539	RS19G090800	15/06/2021 00:00	8.1	100.8	1.0	14.8	0.098	0.97	1.04	0.04	0.050	49,658	4,795	3.2	337	Liz O'Leary	10.21	10.128
M14	Spring Lane	CCRW/21/10137	167,868	73,539	RS19G090800	06/07/2021 00:00	8.0	68.0	3.4	13.3	0.108	0.47	0.57	0.02	0.030			11.0	400	Liz O'Leary	7.12	10.466
M14	Spring Lane	CCRW/21/10138	167,868	73,539	RS19G090800	16/08/2021 00:00	7.5	80.2	1.0	14.9	0.113	0.14	0.21	0.03	0.040			1.0	383	Liz O'Leary	8.1	10.106
M14	Spring Lane	CCRW/21/10139	167,868	73,539	RS19G090800	14/09/2021 00:00	8.4	106.0	2.4	15.9	0.232	0.10	0.46	1.71	2.200			4.0	364	Liz O'Leary	10.48	9.891
M14	Spring Lane	CCRW/21/10140	167,868	73,539	RS19G090800	12/10/2021 00:00	7.9	69.6	1.0	11.4	0.177	1.97	2.14	0.06	0.080			5.0	390	Liz O'Leary	7.6	10.926
M15	Leitrim St.	CCRW/21/10141	167,496	72,342	RS19K750900	19/01/2021 00:00	7.1	73.5	1.4	9.6	0.087	0.47	0.50	0.06	0.080			3.2	353	Liz O'Leary	8.37	11.395
M15	Leitrim St.	CCRW/21/10142	167,496	72,342	RS19K750900	22/02/2021 00:00	6.8	87.1		8	0.087	0.99	1.07	0.04	0.050			5.0	268	Liz O'Leary	10.32	11.843
M15	Leitrim St.	CCRW/21/10143	167,496	72,342	RS19K750900	18/03/2021 00:00	7.4	73.7	5.0	9.9	0.082	1.71	1.86	0.03	0.040			4.0	300	Liz O'Leary	8.34	11.315
M15	Leitrim St.	CCRW/21/10144	167,496	72,342	RS19K750900	13/04/2021 00:00	7.7	70.8	2.9	9.1	0.219	1.05	1.19	0.03	0.040	38,730	6,440	2.0	2760	Liz O'Leary	8.16	11.532
M15	Leitrim St.	CCRW/21/10145	167,496	72,342	RS19K750900	04/05/2021 00:00	7.7	48.6	2.3	10.7	0.152	0.70	0.83	0.26	0.340			4.0	1059	Liz O'Leary	5.4	11.104
M15	Leitrim St.	CCRW/21/10146	167,496	72,342	RS19K750900	15/06/2021 00:00	7.8	64.7	1.4	13.9	0.092	1.03	1.13	0.02	0.030	36,540	4,870	4.0	327	Liz O'Leary	6.68	10.329
M15	Leitrim St.	CCRW/21/10147	167,496	72,342	RS19K750900	06/07/2021 00:00	7.6	47.8	2.1	13.4	0.160	0.53	0.64	0.02	0.030	64,985	8,615	2.0	1474	Liz O'Leary	4.99	10.443
M15	Leitrim St.	CCRW/21/10148	167,496	72,342	RS19K750900	16/08/2021 00:00	7.6	77.4	1.0	15	0.100	0.39	0.47	0.03	0.040	52,310	7,415	2.0	1,271	Liz O'Leary	7.8	10.084
M15	Leitrim St.	CCRW/21/10149	167,496	72,342	RS19K750900	14/09/2021 00:00	7.5	103.2	1.4	15.2	0.175	0.28	0.41	0.19	0.240			3.0	371	Liz O'Leary	10.36	10.041
M15	Leitrim St.	CCRW/21/10150	167,496	72,342	RS19K750900	12/10/2021 00:00	7.6	73.8	5.3	11.2	0.107	1.88	2.20	0.05	0.060			5.0	390	Liz O'Leary	8.1	10.976

Ambient River Monitoring 2021			WFD					Curraheen River					Glasheen Stream					Bride River				Glen River		Kiln River
SI 272 of 2009								Curraghen Road Bridge	Carrigrohane Bridge	County Hall	Bandon Road	Woodhaven Estate	Sandbrook Estate	Clashduv Road	Glasheen Bridge	Blackstone Bridge	Kilnap	Fitz's Boreen	Blackpool	Rec Park	Spring Lane	Leitrim Street		
Licence	Parameter	Threshold	High	Good	Moderate	Poor	Bad	M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14	M15		
10 /yr	Samples Taken		Number of Samples					10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
pH	pH - Max	9.0						7.8	7.7	7.8	7.6	7.6	7.9	7.7	7.7	8.0	8.3	8.1	8.1	8.0	8.4	7.8		
	pH - Min	6.0						7.2	7.3	7.4	6.7	7.1	7.6	7.6	6.6	7.1	7.5	7.4	7.2	7.2	7.3	6.8		
DO	DO % Sat. - 5%ile Lower	80						70.5	66.4	54.6	71.1	62.6	35.6	27.7	43.2	62.8	74.0	72.8	72.5	70.5	68.7	48.2		
	DO % Sat - 95%ile Upper	120						109.9	107.1	72.2	84.8	76.8	89.5	67.5	67.5	96.0	110.4	95.1	102.6	81.0	103.6	96.0		
BOD	BOD - Annual Mean	1.5 (Good)	<1.4	1.4-2.0	2.0-4.0	4.0-5.0	>5.0	0.91	1.0	1.3	0.6	1.38	1.31	1.36	1.42	2.1	1.9	1.2	1.5	3.0	1.7	2.5		
	BOD - 95%ile	2.6 (Good)						1.5	2.1	2.4	1.0	2.2	2.1	1.9	2.1	3.8	2.7	1.7	2.4	7.7	3.0	5.2		
Temp.	Temp. - Max	Not > 1.5C rise mixing zone						15.0	14.6	14.6	14.5	15.4	14.9	15.5	15.7	14.4	15.1	14.9	18.0	15.3	15.9	15.2		
	Temp. - Min		9.4	9.3	9.2	10.2	9.7	7.7	9.6	9.7	8.3	8.2	8.2	8.9	7.8	7.0	8.0							
Orthophosphate (as P)	MRP-P - Annual Mean	0.035 (Good)	<0.02	0.02-0.05	0.05-0.1	0.1-0.2	0.2-0.4	0.065	0.061	0.060	0.054	0.087	0.076	0.091	0.090	0.046	0.087	0.074	0.072	0.165	0.120	0.126		
	MRP-P - 95%ile	0.075 (Good)						0.095	0.097	0.096	0.084	0.127	0.102	0.143	0.111	0.063	0.158	0.120	0.115	0.443	0.207	0.199		
TON (as N)	TON - N (Annual Mean)							1.6	1.3	1.5	1.9	1.7	1.7	1.3	1.2	0.9	0.8	0.8	0.9	0.7	0.8	0.9		
	TON - N 95%ile							5.4	4.5	5.3	6.4	5.9	6.7	4.6	4.0	2.2	1.4	1.5	1.8	1.7	1.6	1.8		
	Nitrate - N (Annual Mean)		<0.8	0.8-2.0	2.0-3.6	3.6-5.6	5.6-11.3																	
Total Nitrogen (as N)	Total N - N (Annual Mean)							1.6	1.4	1.6	2.0	1.8	1.8	1.5	1.4	1.0	0.9	0.9	1.0	0.9	0.9	1.0		
	Total N - N 95%ile							5.6	4.9	5.6	6.8	6.0	7.0	5.0	4.4	2.4	1.6	1.7	2.1	1.9	1.8	2.0		
Ammonia	Ammonia N (Annual Mean)	0.065 (Good)	<0.04	0.04-0.1	0.1-0.2	0.2-0.4	>0.4	0.061	0.071	0.273	0.067	0.131	0.221	0.233	0.204	0.044	0.040	0.072	0.036	0.707	0.219	0.074		
	Ammonia-N - 95%ile	0.14 (Good)						0.147	0.139	0.541	0.184	0.253	0.430	0.462	0.387	0.067	0.059	0.169	0.051	3.458	0.980	0.229		
S.Solids	S.Solids - Annual Mean	< or = 25						4.7	3.4	2.8	3.2	10.5	6.1	6.9	8.8	8.8	7.1	3.7	5.2	11.1	7.0	3.4		
	S.Solids - 95%ile	< or = 25						15.7	10.7	7.1	12.6	40.3	11.7	16.2	24.4	13.8	12.1	6.1	15.0	34.4	19.8	5.0		
Total Coliform (1 test/yr)			Bathing < or = 5,000				7,388	11,545	5,013	2,246	22,030	7,190	19,843	14,195	3,068	3,177	7,259	9,398	61,185	33,917	48,141			
Faecal Coliform (E.Coli) (1 test/yr)			A3 <or =100,000				1,345	5,401	1,269	763	2,941	1,208	1,385	2,435	89	352	420	1,915	11,018	2,824	6,835			
Conductivity	Conductivity - Annual Mean		A1 <or =1,000				312	366	379	444	467	473	489	484	330	297	314	326	356	360	857			
	Conductivity - 95%ile		Tidal				347	446	474	505	517	556	548	548	384	328	350	368	412	419	2,181			