Annual Environmental Report

2019

Cork City

D0033-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 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.

New Phosphorus removal process to be installed (improvement identifier D0033-IP:62) Drainage Area Plan (DAP) project for the Cork City agglomeration is ongoing.

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 Total Phosphorus (as P) mg/l

1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

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

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 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
COD-Cr mg/l	261	1700	316.04
Total Phosphorus (as P) mg/l	24	3.7	2.68
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	261	430	119.37
Total Nitrogen mg/l	24	34	19.64
Suspended Solids mg/l	261	490	153.92
Hydraulic Capacity	N/A	283057	122092

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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Total Nitrogen mg/l	10	12	N/A	24	24	24	22.56	Fail
Total Phosphorus (as P) mg/l	2.5	3	N/A	24	6	2	2.07	Fail
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	24	N/A	N/A	14.47	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	24	N/A	N/A	3.49	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	24	N/A	N/A	1.38	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

Cause of Exceedance(s):

No N&P removal treatment step

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 Status
Downstream	CW05003150LE8004	178202, 64723	No	No	No	No	Unassigned
Downstream	RS19B140110	165691, 74463	No	No	No	No	Moderate
Downstream	RS19B140300	166925, 74246	No	No	No	No	Moderate
Downstream	RS19B140800	167422, 73340	No	No	No	No	Unassigned
Downstream	RS19C120110	162863, 71034	No	No	No	No	Unassigned
Downstream	RS19C120740	165003, 71212	No	No	No	No	Unassigned
Downstream	RS19G040190	164344, 69415	No	No	No	No	Unassigned
Downstream	RS19G040300	165278, 69503	No	No	No	No	Unassigned
Downstream	RS19G040490	165697, 70336	No	No	No	No	Unassigned
Downstream	RS19G040700	165401, 70768	No	No	No	No	Unassigned

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Downstream	RS19G090400	168942, 73453	No	No	No	No	Moderate
Downstream	RS19G090800	167868, 73539	No	No	No	No	Moderate
Downstream	RS19G880990	166291, 74796	No	No	No	No	Unassigned
Downstream	RS19K750900	167496, 72342	No	No	No	No	Moderate
Downstream	RS19T050890	162843, 69176	No	No	No	No	Unassigned
Downstream	TW04003159LE2006	170242, 72195	No	No	No	No	Moderate
Downstream	TW05003157LE4005	176559, 69260	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.

The ambient monitoring results does not meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

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

The discharge from the wastewater treatment plant does 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	14317447	3566159	75
SS	6972790	780906	89
cBOD	5407560	504496	91

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.

Carrigrennan (Cork City) WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	359592
DWF to the Treatment Plant (m^3/day)	59359.01
Current Hydraulic Loading - annual max (m^3/day)	283057
Average Hydraulic loading to the Treatment Plant (m^3/day)	122092
Organic Capacity (PE) - As Constructed	413200

Organic Capacity (PE) - Collected Load (peak week)[Note1]	274780
Organic Capacity (PE) - Remaining	138420
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 - 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)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
150	Blocked Sewer	1	149

3.2 REPORTED INCIDENTS SUMMARY

Environmental incidents that arise in an agglomeration are reported on an on-going basis in accordance with our waste water discharge licences. Where an incident occurs and it is reportable under the licence, it is reported to the Environmental Protection Agency through their Environmental Data Exchange Network, or in some instances by telephone. Some incidents which arise in the agglomeration are recorded by Irish Water but may not be reportable under our licence for example where the incident does not have an impact on environmental performance.

A summary of reported incidents is included below.

3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	Inadequate Operational Procedures / Training	1	No	Yes
Uncontrolled release	Network Infrastructure	1	No	Yes

Other	EO caused by power failure	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Spillage	Inadequate Operational Procedures / Training	1	No	Yes
Other	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	EO caused by power failure	1	No	No
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Other	Other	1	No	No
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Other	Plant or equipment maintenance at WWTP	1	No	No
Uncontrolled release	EO caused by pump failure	1	No	Yes

Uncontrolled release	Plant or equipment maintenance at WWTP	1	No	No
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	23
Number of Incidents reported to the EPA via EDEN in 2019	23
Explanation of any discrepancies between the two numbers above	N/A

4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

A summary of the operation of the storm water overflows and their significance where known is included below:

4.1.1 SWO IDENTIFICATION

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
S06	167053.615, 72194.123	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S08	167438, 72568	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S09	167401, 72902	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S11	167498, 73710	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S13	167457.94, 73280.57	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S17	167558, 72135.02	Yes	Low	Meeting	Unknown	Unknown	Not Monitored

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
S18	167666, 72128	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S19	168077.62, 72051.55	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S19	168077.62, 72051.55	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S22	170463.38, 72270.01	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S26	167915.35, 71715.08	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S26	167915.35, 71715.08	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S26	167915.35, 71715.08	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S29	167259.6, 71520.91	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S30	167184.89, 71500.92	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S30	167184.89, 71500.92	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
S31	166415.23, 71477.68	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S33	164346.6, 69422.73	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
S34	171683.3, 69813.62	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
S35	165283, 71154	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S36	165601.71, 70433.52	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S37	165598.18, 70436.47	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S39	166294.86, 69286.45	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S40	168668, 69893	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S41	170018, 69669	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S42	170045.804, 70085.71	Yes	Low	Meeting	Unknown	Unknown	Not Monitored

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
S43	168818, 73442	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S44	171627.11, 71861.04	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
S45	168312.55, 70079.44	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S45	168312.55, 70079.44	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S47	167443, 73019	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S48	176683, 69726	Yes	Low	Meeting	Unknown	Unknown	Monitored
S49	170768, 72079	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	162897.62, 69880.91	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	163148.38, 71116.01	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	163247.33, 69974.27	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	164943.45, 71226.08	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored

TBC	165014.02, 71472.14	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	165200.19, 71158.71	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	165281, 71163	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	165604.52, 70429.82	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	167273, 72119	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	168668, 69893	No	Low	Meeting	Unknown	Unknown	Monitored
TBC	169934.61, 73932.89	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	171683.3, 69813.62	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	172264.48, 72014.62	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	173100, 69468	No	Unknown	Meeting	Unknown	Unknown	Monitored
TBC	173151.1, 70547.09	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	175512, 71475	No	Low	Meeting	Unknown	Unknown	Monitored
TBC	175958, 72970.98	No	Low	Meeting	Unknown	Unknown	Monitored
TBC	177328.83, 73293.75	No	Low	Not Meeting	Unknown	Unknown	Monitored

TBC	TBC	No	Low	Meeting	Unknown	Unknown	Monitored
TBC	TBC	No	Low	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
S02	165720, 71689	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S03	165987, 71722	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
S04	166772.39, 72081.58	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S05	166965.17, 72158.79	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S07	167468.76, 72138.66	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S10	167405.46, 73414.12	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S14	167456, 73163	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S15	167418, 72804	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S19	168077.62, 72051.55	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S20	168764.98, 72117.64	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
S21	169332, 72302	Yes	Low	Meeting	Unknown	Unknown	Not Monitored

S23	170702.96, 72270.95	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
S24	170275, 72110	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S25	168322, 71868	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S25	168322, 71868	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S26	167915.35, 71715.08	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S27	167532.99, 71538.31	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S28	167470, 71546	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S30	167184.89, 71500.92	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S32	165980, 71327	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
S35	165283, 71154	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
S38	165704.75, 69791.31	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
S44	171627.11, 71861.04	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored

S44	171627.11, 71861.04	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SD04	163247.33, 69974.27	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
TBC	162794.43, 70706.66	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	164251.59, 69362.84	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	164491.66, 71228.72	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	164731.07, 69408.34	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	164731.07, 69408.34	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	166610.25, 71491.96	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	167119.37, 71590.94	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	167386, 71575	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	167607.02, 71505.15	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	167915.35, 71715.08	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored

TBC	167915.35, 71715.08	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	168764.98, 72117.64	No	Low	Meeting	Unknown	Unknown	Monitored
TBC	170473, 69691	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	170863, 72054	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	172404, 69758	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	173033, 69515	No	Low	Not Meeting	Unknown	Unknown	Not Monitored
TBC	175339.38676087, 71488.70408698	No	Low	Meeting	Unknown	Unknown	Monitored
TBC	176746, 79736	No	Unknown	Meeting	Unknown	Unknown	Monitored
TBC	TBC	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	N/A
The SWO Assessment included the requirements of relevant of WWDL schedules?	No
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 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
D0033-SIP:01	Cessation of discharge from SD02 (St Patrick's Bridge)	C	22/12/2012	Y	Works Completed		
D0033-SIP:02	Infiltration and inflow programme	C	22/12/2015	Y	Works ongoing		

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
D0033-SIP:03	Improvement in operation of, and reduction in frequency of discharge via, CS071 (S48N and S48S)	C	As Agreed,	N	Works Completed		
D0033-SIP:04	Upgrading of waste water works, as required, to ensure Storm Water Overflows comply with the criteria outlined in DoEHLG.	C	22/12/2015	Y	Works Completed		

A summary of the status of any improvements identified by under Condition 5.2 is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
1. DAP to assess collection network issue underway with expected completion of the DAP by 12/10/2021 2. More stringent ELVs/Sensitive Waters issue review has determined that Phosphorus removal will be provided. IW is also investigating measures required to resolve Sole Pressure with expected completion by 31/03/2020				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

The utilisation of multiple capital maintenance programmes and the outputs of the workshops with the Local Authority Operations Staff held under the programme can be used to satisfy the requirements of Condition 5 regarding network integrity. Improvement works identified by way of these programmes and workshops will be included in the Improvements Summary Table.

5 LICENCE SPECIFIC REPORTS

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides list of the various reports required for this agglomeration and a brief summary of their recommendations.

5.a Licence Specific Reports Summary Table

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
Priority Substances Assessment	Yes	2012	No	
Toxicity of Final Effluent	Yes	2011	No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2012

5.2 TOXICITY OF FINAL EFFLUENT

The Toxicity of Final Effluent Report has been included in the AER 2011

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	ELV amendment
Is there a need to request/advise the EPA of any modification to the existing WWDL with respect to condition 4 changes to monitoring location, frequency etc	No
List reason e.g. changes to monitoring requirements	N/A
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	No

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

Signed: Date: 23/04/2020

This AER has been produced by Irish Water's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of ,

Katherine Walshe

Acting Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

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)
			Easting:	Northing:			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
M01	Curragheen Road Bridge	CCRW/19/10001	162,843	69,176	RS19T050890	09/01/2019	7.5	74.7	0.4	10.2	0.055	3.29	3.41	0.04	0.052			2.0	293	Pat Foley	8.39	11.235
M01	Curragheen Road Bridge	CCRW/19/10002	162,843	69,176	RS19T050890	27/02/2019	7.5	79.5	0.8	9.9	0.033	4.84	4.87	0.04	0.050			4.4	288	Pat Foley	8.99	11.315
M01	Curragheen Road Bridge	CCRW/19/10003	162,843	69,176	RS19T050890	02/04/2019	7.3	78.8	0.9	7.5	0.036	2.47	2.57	0.02	0.024	**3,444**	**1,542**	0.4	289	Pat Foley	9.45	11.990
M01	Curragheen Road Bridge	CCRW/19/10004	162,843	69,176	RS19T050890	14/05/2019	7.6	77.7	1.9	10.6	0.055	3.50	3.68	0.03	0.042			2.0	295	Pat Foley	8.65	11.130
M01	Curragheen Road Bridge	CCRW/19/10005	162,843	69,176	RS19T050890	11/06/2019	7.4	80.3		11.0		2.26	2.51							Pat Foley	8.86	11.027
M01	Curragheen Road Bridge	CCRW/19/10006	162,843	69,176	RS19T050890																	
M01	Curragheen Road Bridge	CCRW/19/10007	162,843	69,176	RS19T050890																	
M01	Curragheen Road Bridge	CCRW/19/10008	162,843	69,176	RS19T050890																	
M01	Curragheen Road Bridge	CCRW/19/10009	162,843	69,176	RS19T050890																	
M01	Curragheen Road Bridge	CCRW/19/10010	162,843	69,176	RS19T050890																	
M02	Carrigrohane Bridge	CCRW/19/10011	162,863	71,034	RS19C120110	09/01/2019	7.5	77.6	0.7	10.4	0.053	3.71	3.87	0.05	0.061			2.4	349	Pat Foley	8.68	11.182
M02	Carrigrohane Bridge	CCRW/19/10012	162,863	71,034	RS19C120110	27/02/2019	7.5	73.7	1.0	10.1	0.055	3.71	3.84	0.07	0.084			4.0	328	Pat Foley	8.30	11.261
M02	Carrigrohane Bridge	CCRW/19/10013	162,863	71,034	RS19C120110	02/04/2019	7.3	76.7	0.9	8.2	0.033	1.85	2.05	0.03	0.035	**17,168**	**5,705**	1.6	345	Pat Foley	9.04	11.786
M02	Carrigrohane Bridge	CCRW/19/10014	162,863	71,034	RS19C120110	14/05/2019	7.6	87.9	0.8	11.1	0.036	3.19	3.37	0.03	0.039			1.2	345	Pat Foley	9.67	11.002
M02	Carrigrohane Bridge	CCRW/19/10015	162,863	71,034	RS19C120110	11/06/2019	7.5	75.1		11.7		2.16	2.49							Pat Foley	8.15	10.851
M02	Carrigrohane Bridge	CCRW/19/10016	162,863	71,034	RS19C120110																	
M02	Carrigrohane Bridge	CCRW/19/10017	162,863	71,034	RS19C120110																	
M02	Carrigrohane Bridge	CCRW/19/10018	162,863	71,034	RS19C120110																	
M02	Carrigrohane Bridge	CCRW/19/10019	162,863	71,034	RS19C120110																	
M02	Carrigrohane Bridge	CCRW/19/10020	162,863	71,034	RS19C120110																	
M03	County Hall	CCRW/19/10021	165,003	71,212	RS19C120740	09/01/2019	7.5	73.3	0.8	10.2	0.058	2.78	3.03	0.12	0.150			2.0	361	Pat Foley	8.24	11.235
M03	County Hall	CCRW/19/10022	165,003	71,212	RS19C120740	27/02/2019	7.5	73.3	1.1	10.0	0.065	4.43	4.56	0.19	0.250			5.6	344	Pat Foley	8.27	11.288
M03	County Hall	CCRW/19/10023	165,003	71,212	RS19C120740	02/04/2019	7.5	68.6	1.5	8.4	0.033	3.50	3.89	0.11	0.146	**3,913**	**910**	1.2	360	Pat Foley	8.05	11.728
M03	County Hall	CCRW/19/10024	165,003	71,212	RS19C120740	14/05/2019	7.1	64.1	1.0	7.1	0.033	2.88	3.15	0.13	0.170			1.2	364	Pat Foley	7.76	12.109
M03	County Hall	CCRW/19/10025	165,003	71,212	RS19C120740	11/06/2019	7.5	65.1		12.1		1.54	1.93							Pat Foley	7.00	10.753
M03	County Hall	CCRW/19/10026	165,003	71,212	RS19C120740																	
M03	County Hall	CCRW/19/10027	165,003	71,212	RS19C120740																	
M03	County Hall	CCRW/19/10028	165,003	71,212	RS19C120740																	
M03	County Hall	CCRW/19/10029	165,003	71,212	RS19C120740																	
M03	County Hall	CCRW/19/10030	165,003	71,212	RS19C120740																	
M04	Bandon Road	CCRW/19/10031	164,101	68,782	RS19G040140	09/01/2019	6.5	76.3	0.4	11.4	0.035	4.74	4.75	0.02	0.027			2.0	403	Pat Foley	8.34	10.926
M04	Bandon Road	CCRW/19/10032	165,003	71,212	RS19G040140	27/02/2019	6.6	78.4	0.5	10.8	0.026	5.56	5.59	0.02	0.028			3.2	402	Pat Foley	8.69	11.079
M04	Bandon Road	CCRW/19/10033	165,003	71,212	RS19G040140	02/04/2019	6.2	77.1	0.9	9.4	0.031	2.47	2.60	0.01	0.012	**252**	**32**	0.4	422	Pat Foley	8.83	11.450
M04	Bandon Road	CCRW/19/10034	165,003	71,212	RS19G040140	14/05/2019	6.4	72.6	0.3	11.3	0.036	4.53	4.65	0.01	0.008			0.4	418	Pat Foley	7.95	10.951
M04	Bandon Road	CCRW/19/10035	165,003	71,212	RS19G040140	11/06/2019	6.2	78.2		11.6		4.32	4.39							Pat Foley	8.51	10.876
M04	Bandon Road	CCRW/19/10036	165,003	71,212	RS19G040140																	
M04	Bandon Road	CCRW/19/10037	165,003	71,212	RS19G040140																	
M04	Bandon Road	CCRW/19/10038	165,003	71,212	RS19G040140																	
M04	Bandon Road	CCRW/19/10039	165,003	71,212	RS19G040140																	
M04	Bandon Road	CCRW/19/10040	165,003	71,212	RS19G040140																	
M05	Woodhaven Estate	CCRW/19/10041	164,344	69,415	RS19G040190	09/01/2019	7.3	68.7	0.7	11.0	0.045	3.29	3.41	0.08	0.100			2.4	402	Pat Foley	7.58	11.027
M05	Woodhaven Estate	CCRW/19/10042	164,344	69,415	RS19G040190	27/02/2019	7.2	71.9	1.2	10.4	0.050	4.01	4.04	0.16	0.210			5.6	407	Pat Foley	8.04	11.182
M05	Woodhaven Estate	CCRW/19/10043	164,344	69,415	RS19G040190	02/04/2019	6.9	73.4	1.4	9.2	0.056	3.09	3.19	0.12	0.157	**15,531**	**1,100**	1.2	392	Pat Foley	8.45	11.505
M05	Woodhaven Estate	CCRW/19/10044	164,344	69,415	RS19G040190	14/05/2019	7.2	74.2	0.8	11.3	0.042	3.19	3.22	0.05	0.070			2.4	390	Pat Foley	8.13	10.951
M05	Woodhaven Estate	CCRW/19/10045	164,344	69,415	RS19G040190	11/06/2019	7.0	70.3		12.5		1.85	1.97							Pat Foley	7.49	10.656
M05	Woodhaven Estate	CCRW/19/10046	164,344	69,415	RS19G040190																	
M05	Woodhaven Estate	CCRW/19/10047	164,344	69,415	RS19G040190																	
M05	Woodhaven Estate	CCRW/19/10048	164,344	69,415	RS19G040190																	
M05	Woodhaven Estate	CCRW/19/10049	164,344	69,415	RS19G040190																	
M05	Woodhaven Estate	CCRW/19/10050	164,344	69,415	RS19G040190																	

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)
			Easting:	Northing:			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
M06	Sandbrook Estate	CCRW/19/10051	165,278	69,503	RS19G040300	09/01/2019	7.7	46.5	4.2	11.0	0.220	2.06	3.84	1.38	1.770			2.8	446	Pat Foley	5.13	11.027
M06	Sandbrook Estate	CCRW/19/10052	164,344	69,415	RS19G040300	27/02/2019	7.5	57.9	1.9	10.5	0.055	2.88	3.13	0.19	0.240			8.8	462	Pat Foley	6.46	11.156
M06	Sandbrook Estate	CCRW/19/10053	164,344	69,415	RS19G040300	02/04/2019	7.7	54.5	2.1	8.7	0.073	3.09	4.01	0.36	0.464	**61,310**	**5,040**	6.4	442	Pat Foley	6.35	11.644
M06	Sandbrook Estate	CCRW/19/10054	164,344	69,415	RS19G040300	14/05/2019	7.8	45.7	1.6	11.7	0.080	3.19	3.57	0.29	0.373			2.0	445	Pat Foley	4.96	10.851
M06	Sandbrook Estate	CCRW/19/10055	164,344	69,415	RS19G040300	11/06/2019	7.7	44.8		12.6		1.34	1.89							Pat Foley	4.76	10.632
M06	Sandbrook Estate	CCRW/19/10056	164,344	69,415	RS19G040300																	
M06	Sandbrook Estate	CCRW/19/10057	164,344	69,415	RS19G040300																	
M06	Sandbrook Estate	CCRW/19/10058	164,344	69,415	RS19G040300																	
M06	Sandbrook Estate	CCRW/19/10059	164,344	69,415	RS19G040300																	
M06	Sandbrook Estate	CCRW/19/10060	164,344	69,415	RS19G040300																	
M07	Clashduv Road	CCRW/19/10061	165,697	70,336	RS19G040490	09/01/2019	7.7	33.0	3.8	11.0	0.145	1.96	3.38	1.42	1.830			1.8	468	Pat Foley	3.64	11.027
M07	Clashduv Road	CCRW/19/10062	165,697	70,336	RS19G040490	27/02/2019	7.5	50.7	1.9	10.6	0.070	2.99	3.83	0.19	0.250			11.6	478	Pat Foley	5.64	11.130
M07	Clashduv Road	CCRW/19/10063	165,697	70,336	RS19G040490	02/04/2019	7.6	51.5	1.5	8.9	0.068	2.16	3.01	0.27	0.345	**19,365**	**1,590**	6.0	467	Pat Foley	5.97	11.588
M07	Clashduv Road	CCRW/19/10064	165,697	70,336	RS19G040490	14/05/2019	7.8	44.5	1.5	12.3	0.075	1.34	1.69	0.14	0.184			4.0	464	Pat Foley	4.76	10.704
M07	Clashduv Road	CCRW/19/10065	165,697	70,336	RS19G040490	11/06/2019	7.7	36.2		13.0		1.13	1.60							Pat Foley	3.81	10.537
M07	Clashduv Road	CCRW/19/10066	165,697	70,336	RS19G040490																	
M07	Clashduv Road	CCRW/19/10067	165,697	70,336	RS19G040490																	
M07	Clashduv Road	CCRW/19/10068	165,697	70,336	RS19G040490																	
M07	Clashduv Road	CCRW/19/10069	165,697	70,336	RS19G040490																	
M07	Clashduv Road	CCRW/19/10070	165,697	70,336	RS19G040490																	
M08	Glasheen Bridge	CCRW/19/10071	165,401	70,768	RS19G040700	09/01/2019	7.5	40.2	5.6	10.9	0.161	1.44	3.02	1.41	1.810			2.8	471	Pat Foley	4.44	11.053
M08	Glasheen Bridge	CCRW/19/10072	165,401	70,768	RS19G040700	27/02/2019	7.5	57.6	1.4	10.5	0.056	3.81	3.97	0.17	0.220			5.2	478	Pat Foley	6.43	11.156
M08	Glasheen Bridge	CCRW/19/10073	165,401	70,768	RS19G040700	02/04/2019	7.6	58.6	1.8	8.6	0.066	2.06	2.85	0.21	0.274	**16,220**	**1,103**	7.2	465	Pat Foley	6.84	11.672
M08	Glasheen Bridge	CCRW/19/10074	165,401	70,768	RS19G040700	14/05/2019	7.7	55.4	4.0	12.0	0.085	2.47	2.77	0.10	0.129			5.6	464	Pat Foley	5.97	10.777
M08	Glasheen Bridge	CCRW/19/10075	165,401	70,768	RS19G040700	11/06/2019	4.7	41.6		13.0		0.82	1.27							Pat Foley	4.38	10.537
M08	Glasheen Bridge	CCRW/19/10076	165,401	70,768	RS19G040700																	
M08	Glasheen Bridge	CCRW/19/10077	165,401	70,768	RS19G040700																	
M08	Glasheen Bridge	CCRW/19/10078	165,401	70,768	RS19G040700																	
M08	Glasheen Bridge	CCRW/19/10079	165,401	70,768	RS19G040700																	
M08	Glasheen Bridge	CCRW/19/10080	165,401	70,768	RS19G040700																	
M09	Blackstone Bridge	CCRW/19/10081	165,691	74,463	RS19B140110	08/01/2019 00:00	7.7	74.4	1.0	10	0.052	2.78	2.99	0.05	0.060			4.0	311	Liz O'Leary	8.4	11.288
M09	Blackstone Bridge	CCRW/19/10082	165,691	74,463	RS19B140110	05/02/2019 00:00	7.6	75.6	2.9	9.5	0.128	3.40	4.07	0.16	0.210			18.0	292	Liz O'Leary	8.63	11.422
M09	Blackstone Bridge	CCRW/19/10083	165,691	74,463	RS19B140110	06/03/2019 00:00	7.6	92.9	1.0	9.6	0.080	2.78	3.34	0.04	0.050			9.0	271	Liz O'Leary	10.59	11.395
M09	Blackstone Bridge	CCRW/19/10084	165,691	74,463	RS19B140110	02/04/2019 00:00	7.4	90.3	2.3	8.7	0.033	4.01	4.30	0.03	0.040	**3,746**	**303**	6.0	306	Liz O'Leary	10.51	11.644
M09	Blackstone Bridge	CCRW/19/10085	165,691	74,463	RS19B140110	08/05/2019 00:00	7.5	71.2	1.5	10.4	0.050	1.44	2.13	0.05	0.070			8.0	261	Liz O'Leary	7.96	11.182
M09	Blackstone Bridge	CCRW/19/10086	165,691	74,463	RS19B140110	05/06/2019 00:00	7.7	74.2	2.2	12.5	0.045	2.37	2.81	0.02	0.020			6.0	314	Liz O'Leary	7.91	10.656
M09	Blackstone Bridge	CCRW/19/10087	165,691	74,463	RS19B140110	11/07/2019 00:00	7.0	83.1	6.1	16.8	0.107	2.78	3.56	0.03	0.040			39.0	311	Liz O'Leary	8.07	9.705
M09	Blackstone Bridge	CCRW/19/10088	165,691	74,463	RS19B140110	27/11/2019 00:00	7.5	67.6	1.0	9.7	0.078	3.19	3.79	0.03	0.040			4.0	287	Liz O'Leary	7.69	11.368
M09	Blackstone Bridge	CCRW/19/10089	165,691	74,463	RS19B140110																	
M09	Blackstone Bridge	CCRW/19/10090	165,691	74,463	RS19B140110																	
M10	Kilnap	CCRW/19/10091	166,291	74,796	RS19G880990	08/01/2019 00:00	8.0	78.0	1.0	9.8	0.077	2.99	3.14	0.04	0.050			3.0	279	Liz O'Leary	8.85	11.341
M10	Kilnap	CCRW/19/10092	166,291	74,796	RS19G880990	05/02/2019 00:00	7.8	83.2	2.8	9.5	0.125	3.91	4.65	0.16	0.210			18.0	249	Liz O'Leary	9.5	11.422
M10	Kilnap	CCRW/19/10093	166,291	74,796	RS19G880990	06/03/2018 00:00	7.7	96.3	1.9	9.1	0.092	2.57	3.32	0.06	0.080			16.0	232	Liz O'Leary	11.1	11.532
M10	Kilnap	CCRW/19/10094	166,291	74,796	RS19G880990	02/04/2019 00:00	7.6	85.5	1.2	7.6	0.053	4.01	4.34	0.03	0.040	**3,743**	**1,413**	5.0	279	Liz O'Leary	10.22	11.960
M10	Kilnap	CCRW/19/10095	166,291	74,796	RS19G880990	08/05/2019 00:00	7.7	75.0	8.3	10.2	0.244	3.29	6.81	1.32	1.700			14.0	273	Liz O'Leary	8.43	11.235
M10	Kilnap	CCRW/19/10096	166,291	74,796	RS19G880990	05/06/2019 00:00	7.7	74.2	1.1	12.5	0.085	2.78	3.30	0.02	0.020			2.0	274	Liz O'Leary	7.91	10.656
M10	Kilnap	CCRW/19/10097	166,291	74,796	RS19G880990	11/07/2019 00:00	7.6	88.0	1.1	16.2	0.128	4.01	4.40	0.02	0.020			2.0	248	Liz O'Leary	8.65	9.829
M10	Kilnap	CCRW/19/10098	166,291	74,796	RS19G880990	27/11/2019 00:00	7.7	80.1	1.4	9.8	0.077	2.57	3.21	0.03	0.040			9.0	253	Liz O'Leary	9.08	11.341
M10	Kilnap	CCRW/19/10099	166,291	74,796	RS19G880990																	
M10	Kilnap	CCRW/19/10100	166,291	74,796	RS19G880990																	

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)
			Easting:	Northing:			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
M11	Fitz's Boreen	CCRW/19/10101	166,925	74,246	RS19B140300	08/01/2019 00:00	8.0	82.3	1.0	10	0.085	3.40	3.53	0.06	0.080			4.0	295	Liz O'Leary	9.29	11.288
M11	Fitz's Boreen	CCRW/19/10102	166,925	74,246	RS19B140300	05/02/2019 00:00	7.8	85.2	2.7	9.6	0.128	4.12	4.73	0.14	0.180			19.0	270	Liz O'Leary	9.71	11.395
M11	Fitz's Boreen	CCRW/19/10103	166,925	74,246	RS19B140300	06/03/2019 00:00	7.6	92.4	1.2	9.3	0.088	2.57	3.27	0.07	0.090			11.0	249	Liz O'Leary	10.61	11.477
M11	Fitz's Boreen	CCRW/19/10104	166,925	74,246	RS19B140300	02/04/2019 00:00	7.7	83.0	2.4	7.8	0.040	2.99	3.35	0.05	0.060	**30,083**	**8,138**	2.4	296	Liz O'Leary	9.88	11.902
M11	Fitz's Boreen	CCRW/19/10105	166,925	74,246	RS19B140300	08/05/2019 00:00	7.3	73.2	6.6	10.4	0.179	3.19	5.84	1.09	1.400			13.0	273	Liz O'Leary	8.18	11.182
M11	Fitz's Boreen	CCRW/19/10106	166,925	74,246	RS19B140300	05/06/2019 00:00	7.3	75.9	1.1	11.7	0.077	2.47	2.96	0.03	0.040			3.0	290	Liz O'Leary	8.24	10.851
M11	Fitz's Boreen	CCRW/19/10107	166,925	74,246	RS19B140300	11/07/2019 00:00	7.8	78.3	1.2	16.9	0.103	5.66	6.04	0.09	0.110			2.0	313	Liz O'Leary	7.58	9.685
M11	Fitz's Boreen	CCRW/19/10108	166,925	74,246	RS19B140300	27/11/2019 00:00	7.7	69.2	1.0	9.9	0.122	2.78	3.44	0.04	0.050			5.0	267	Liz O'Leary	7.83	11.315
M11	Fitz's Boreen	CCRW/19/10109	166,925	74,246	RS19B140300																	
M11	Fitz's Boreen	CCRW/19/10110	166,925	74,246	RS19B140300																	
M12	Blackpool	CCRW/19/10111	167,422	73,340	RS19B140800	08/01/2019 00:00	7.8	82.0	1.0	9.8	0.078	4.22	4.47	0.04	0.050			3.2	308	Liz O'Leary	9.3	11.341
M12	Blackpool	CCRW/19/10112	167,422	73,340	RS19B140800	05/02/2019 00:00	7.7	87.6	2.0	9.1	0.105	4.32	4.73	0.08	0.100			13.0	280	Liz O'Leary	10.1	11.532
M12	Blackpool	CCRW/19/10113	167,422	73,340	RS19B140800	06/03/2019 00:00	7.6	82.3	1.3	9.1	0.098	3.19	3.91	0.05	0.070			12.0	257	Liz O'Leary	9.49	11.532
M12	Blackpool	CCRW/19/10114	167,422	73,340	RS19B140800	02/04/2019 00:00	7.2	81.0	1.7	7.8	0.047	3.40	3.73	0.04	0.050	**141,360**	**6,680**	2.4	305	Liz O'Leary	9.64	11.902
M12	Blackpool	CCRW/19/10115	167,422	73,340	RS19B140800	08/05/2019 00:00	7.3	73.1	7.1	10.4	0.142	4.22	6.72	0.93	1.200			14.0	272	Liz O'Leary	8.17	11.182
M12	Blackpool	CCRW/19/10116	167,422	73,340	RS19B140800	05/06/2019 00:00	7.2	74.7	1.1	11.7	0.083	1.54	2.01	0.03	0.040			2.4	305	Liz O'Leary	8.11	10.851
M12	Blackpool	CCRW/19/10117	167,422	73,340	RS19B140800	11/07/2019 00:00	7.8	68.6	1.1	16.0	0.088	3.40	2.73	0.02	0.020			1.2	327	Liz O'Leary	6.77	9.870
M12	Blackpool	CCRW/19/10118	167,422	73,340	RS19B140800	27/11/2019 00:00	7.9	78.9	1.2	9.8	0.274	3.60	4.27	0.03	0.040			4.0	271	Liz O'Leary	8.95	11.341
M12	Blackpool	CCRW/19/10119	167,422	73,340	RS19B140800																	
M12	Blackpool	CCRW/19/10120	167,422	73,340	RS19B140800																	
M13	Glen Rec. Park	CCRW/19/10121	168,942	73,453	RS19G090400	08/01/2019 00:00	7.8	73.0	1.8	9.9	0.125	3.81	4.24	0.23	0.300			3.0	327	Liz O'Leary	8.26	11.315
M13	Glen Rec. Park	CCRW/19/10122	168,942	73,453	RS19G090400	05/02/2019 00:00	7.6	75.7	2.7	9.2	0.159	2.47	3.17	0.11	0.140			24.0	307	Liz O'Leary	8.71	11.505
M13	Glen Rec. Park	CCRW/19/10123	168,942	73,453	RS19G090400	06/03/2019 00:00	7.3	87.9	4.3	8.8	0.137	2.16	4.10	0.56	0.714			13.0	283	Liz O'Leary	10.21	11.616
M13	Glen Rec. Park	CCRW/19/10124	168,942	73,453	RS19G090400	02/04/2019 00:00	7.2	72.7	3.6	8.4	0.169	3.60	5.24	0.86	1.100	**387,300**	**38,505**	4.0	337	Liz O'Leary	8.53	11.728
M13	Glen Rec. Park	CCRW/19/10125	168,942	73,453	RS19G090400	08/05/2019 00:00	7.3	78.1	2.1	10.2	0.115	1.54	2.58	0.16	0.210			9.2	257	Liz O'Leary	8.77	11.235
M13	Glen Rec. Park	CCRW/19/10126	168,942	73,453	RS19G090400	05/06/2019 00:00	7.6	75.3	1.5	12.0	0.083	2.57	3.01	0.09	0.120			2.4	325	Liz O'Leary	8.12	10.777
M13	Glen Rec. Park	CCRW/19/10127	168,942	73,453	RS19G090400	11/07/2019 00:00	7.6	50.0	3.6	15.3	0.222	2.16	3.95	1.24	1.600			3.0	359	Liz O'Leary	5.01	10.019
M13	Glen Rec. Park	CCRW/19/10128	168,942	73,453	RS19G090400	27/11/2019 00:00	7.8	69.9	1.1	7.8	0.120	2.78	3.53	0.10	0.130			4.0	288	Liz O'Leary	8.32	11.902
M13	Glen Rec. Park	CCRW/19/10129	168,942	73,453	RS19G090400																	
M13	Glen Rec. Park	CCRW/19/10130	168,942	73,453	RS19G090400																	
M14	Spring Lane	CCRW/19/10131	167,868	73,539	RS19G090800	08/01/2019 00:00	7.5	73.3	1.6	9.9	0.092	2.78	3.09	0.07	0.090			3.0	331	Liz O'Leary	8.29	11.315
M14	Spring Lane	CCRW/19/10132	167,868	73,539	RS19G090800	05/02/2019 00:00	7.4	88.6	2.5	9.4	0.135	2.99	3.43	0.09	0.110			21.0	312	Liz O'Leary	10.15	11.450
M14	Spring Lane	CCRW/19/10133	167,868	73,539	RS19G090800	06/03/2019 00:00	7.0	83.8	5.0	9	0.137	2.37	3.79	0.51	0.650			11.0	283	Liz O'Leary	9.69	11.560
M14	Spring Lane	CCRW/19/10134	167,868	73,539	RS19G090800	02/04/2019 00:00	7.7	82.9	4.0	7.8	0.090	3.19	3.88	0.16	0.200	**248,900**	**10,880**	8.0	375	Liz O'Leary	9.87	11.902
M14	Spring Lane	CCRW/19/10135	167,868	73,539	RS19G090800	08/05/2019 00:00	7.0	83.1	1.5	10.4	0.102	1.75	2.39	0.05	0.070			5.2	238	Liz O'Leary	9.29	11.182
M14	Spring Lane	CCRW/19/10136	167,868	73,539	RS19G090800	05/06/2019 00:00	7.5	75.9	1.4	11.8	0.092	1.03	1.53	0.05	0.070			2.4	323	Liz O'Leary	8.22	10.826
M14	Spring Lane	CCRW/19/10137	167,868	73,539	RS19G090800																	
M14	Spring Lane	CCRW/19/10138	167,868	73,539	RS19G090800																	
M14	Spring Lane	CCRW/19/10139	167,868	73,539	RS19G090800																	
M14	Spring Lane	CCRW/19/10140	167,868	73,539	RS19G090800																	
M15	Leitrim St.	CCRW/19/10141	167,496	72,342	RS19K750900	08/01/2019 00:00	7.5	75.2	4.0	10.1	0.142	2.99	3.54	0.26	0.330			5.0	324	Liz O'Leary	8.47	11.261
M15	Leitrim St.	CCRW/19/10142	167,496	72,342	RS19K750900	05/02/2019 00:00	6.7	80.3	5.4	9.4	0.170	5.15	5.79	0.19	0.240			43.0	292	Liz O'Leary	9.19	11.450
M15	Leitrim St.	CCRW/19/10143	167,496	72,342	RS19K750900	06/03/2019 00:00	7.6	89.5	1.7	9	0.107	4.01	4.70	0.06	0.080			14.0	257	Liz O'Leary	10.35	11.560
M15	Leitrim St.	CCRW/19/10144	167,496	72,342	RS19K750900	02/04/2019 00:00	6.9	74.6	4.4	7.6	0.103	4.63	5.25	0.14	0.180	**483,920**	**77,010**	7.0	332	Liz O'Leary	8.92	11.960
M15	Leitrim St.	CCRW/19/10145	167,496	72,342	RS19K750900	08/05/2019 00:00	6.8	71.9	5.2	10.2	0.132	2.16	3.63	0.43	0.550			11.2	268	Liz O'Leary	8.08	11.235
M15	Leitrim St.	CCRW/19/10146	167,496	72,342	RS19K750900	05/06/2019 00:00	7.6	75.3	2.6	12.0	0.110	2.47	3.14	0.09	0.120			3.0	325	Liz O'Leary	8.12	10.777
M15	Leitrim St.	CCRW/19/10147	167,496	72,342	RS19K750900	11/07/2019 00:00	7.2	34.9	4.7	15.9	0.187	3.19	4.18	0.19	0.240			4.0	1235	Liz O'Leary	3.45	9.891
M15	Leitrim St.	CCRW/19/10148	167,496	72,342	RS19K750900	27/11/2019 00:00	7.6	74.0	1.1	9.8	0.090	4.01	4.68	0.05	0.070			6.0	279	Liz O'Leary	8.39	11.341
M15	Leitrim St.	CCRW/19/10149	167,496	72,342	RS19K750900																	
M15	Leitrim St.	CCRW/19/10150	167,496	72,342	RS19K750900																	

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										435		473	525	250	566	73	564	414			999
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	Ammonia	Total Nitrogen	Ortho-Phosphate	Chlorophyll-a	E. Coliforms	BOD
									m	pH unit	mS/cm @ 20°C	PSU	°C	mg/l O2	mg/l N	mg/l N	mg/l N	µg/l P	µg/l	MPN/100mls	mg/l O2
19-01051	CW05003150LE8004	3609	02/11/19	Haulbowline	301	C5	Low	Top	14.10	7.8	27.3	19.0	8.9	10.8	1.47	0.0973	1.40	31.0	2.9	563	0.50
	CW05003150LE8004	3610	02/11/19	Haulbowline	301	C5	Low	Middle		7.9	38.0	26.9	8.9	10.4	1.04	0.0853	0.90	30.0	1.0	538	0.50
	CW05003150LE8004	3611	02/11/19	Haulbowline	301	C5	Low	Bottom		7.9	42.6	31.0	9.2	11.0	0.76	0.0489	0.50	26.0	4.0	428	0.50
	TW05003157LE4005	3612	02/11/19	End L. Mahon	201	C6	Low	Top	8.80	7.8	16.3	10.9	9.1	11.1	2.37	0.0856	2.30	30.0	2.7	388	0.50
	TW05003157LE4005	3613	02/11/19	End L. Mahon	201	C6	Low	Middle		7.9	28.5	19.9	10.9	8.7	1.48	0.1140	1.60	39.0	2.9	605	0.50
	TW05003157LE4005	3614	02/11/19	End L. Mahon	201	C6	Low	Bottom		7.9	36.5	25.9	8.6	10.8	1.09	0.1780	1.10	26.0	4.3	763	0.50
	TW04003159LE2005	3615	02/11/19	Blackrock Castle	201	C7	Low	Top	4.10	7.8	7.7	4.9	9.1	11.5	2.84	0.0595	2.70	26.0	2.4	754	0.50
	TW04003159LE2005	3616	02/11/19	Blackrock Castle	201	C7	Low	Middle		7.9	38.4	27.4	9.0	10.4	0.91	0.1170	1.30	32.0	4.5	624	0.50
	TW04003159LE2005	3617	02/11/19	Blackrock Castle	201	C7	Low	Bottom		7.9	34.4	24.3	9.0	10.4	0.81	0.0977	1.70	32.0	4.3	798	1.10
	TW05003157LE4004	3618	02/11/19	Mid L. Mahon	201	C8	Low	Top	8.40	7.8	16.1	10.8	9.3	11.1	0.82	0.0934	2.30	34.0	2.7	384	0.50
	TW05003157LE4004	3619	02/11/19	Mid L. Mahon	201	C8	Low	Middle		7.9	35.9	25.5	9.0	10.4	1.10	0.1590	1.20	37.0	2.4	1,112	0.50
	TW05003157LE4004	3620	02/11/19	Mid L. Mahon	201	C8	Low	Bottom		7.9	40.1	28.8	9.1	10.7	0.66	0.1010	0.90	32.0	3.5	1,178	0.50
	TW04003159LE2006	3621	02/11/19	Tivoli	201	C9	Low	Top	6.80	7.7	3.6	2.1	10.0	11.4	3.10	0.0513	3.10	24.0	1.0	1,274	0.50
	TW04003159LE2006	3622	02/11/19	Tivoli	201	C9	Low	Bottom		7.9	40.2	28.8	9.7	10.3	0.64	0.0839	0.80	31.0	3.7	520	0.50
	CW05003150LE8004	3623	02/11/19	Haulbowline	301	C5	High	Top	15.60	7.9	35.7	25.2	10.1	9.9	1.10	0.0753	1.10	30.0	1.0	187	0.50
	CW05003150LE8004	3624	02/11/19	Haulbowline	301	C5	High	Middle		7.9	40.0	28.8	8.5	10.4	0.81	0.0490	0.80	25.0	2.1	161	0.50
	CW05003150LE8004	3625	02/11/19	Haulbowline	301	C5	High	Bottom		8.0	42.8	31.0	8.2	10.2	0.56	0.0175	0.60	24.0	1.0	31	0.50
	TW05003157LE4005	3626	02/11/19	End L. Mahon	201	C6	High	Top	11.80	7.9	31.5	22.0	7.3	10.8	1.44	0.1030	1.50	32.0	1.0	504	0.50
	TW05003157LE4005	3627	02/11/19	End L. Mahon	201	C6	High	Middle		8.0	43.3	31.3	7.6	10.6	0.56	0.3480	0.50	25.0	2.7	160	0.50
	TW05003157LE4005	3628	02/11/19	End L. Mahon	201	C6	High	Bottom		8.0	44.6	32.3	8.0	11.4	0.43	0.0175	0.25	23.0	1.0	63	0.50
	TW04003159LE2005	3629	02/11/19	Blackrock Castle	201	C7	High	Top	10.20	7.8	20.1	13.7	7.3	11.2	2.33	0.0905	2.00	28.0	1.0	187	0.50
	TW04003159LE2005	3630	02/11/19	Blackrock Castle	201	C7	High	Middle		7.9	40.2	28.8	7.6	10.5	0.98	0.1280	0.80	35.0	1.0	908	0.50
	TW04003159LE2005	3631	02/11/19	Blackrock Castle	201	C7	High	Bottom		7.9	41.4	29.8	7.8	11.1	0.63	0.0925	0.70	33.0	2.9	554	0.50
	TW05003157LE4004	3632	02/11/19	Mid L. Mahon	201	C8	High	Top	11.40	7.9	17.9	12.1	7.5	11.6	2.28	0.0915	2.40	32.0	1.0	331	0.50
	TW05003157LE4004	3633	02/11/19	Mid L. Mahon	201	C8	High	Middle		7.9	40.3	28.8	7.6	10.6	0.72	0.0668	0.80	28.0	2.1	350	0.50
	TW05003157LE4004	3634	02/11/19	Mid L. Mahon	201	C8	High	Bottom		8.0	42.1	30.3	7.9	11.7	0.53	0.0695	0.60	30.0	3.5	384	0.50
	TW04003159LE2006	3635	02/11/19	Tivoli	201	C9	High	Top	9.20	7.8	3.8	2.2	7.2	12.1	3.17	0.0391	3.10	21.0	1.0	160	0.50
	TW04003159LE2006	3636	02/11/19	Tivoli	201	C9	High	Bottom		7.9	41.8	30.2	7.5	11.3	1.03	0.0869	0.60	29.0	2.1	187	0.50
19-01499	CW05003150LE8004	5168	26/03/19	Haulbowline	301	C5	Low	Top	14.10	7.9	38.9	27.7	12.7	9.3	0.95	0.1050	1.20	39.0	1.0	565	0.50
	CW05003150LE8004	5169	26/03/19	Haulbowline	301	C5	Low	Middle		7.9	40.0	28.3	12.2	9.3	0.90	0.0940	1.10	24.0	1.0	855	0.50
	CW05003150LE8004	5170	26/03/19	Haulbowline	301	C5	Low	Bottom		8.0	45.0	32.0	12.0	9.5	0.51	0.0175	0.70	21.0	1.0	279	0.50
	TW05003157LE4005	5171	26/03/19	End L. Mahon	201	C6	Low	Top	8.80	7.9	32.6	22.3	14.0	9.5	1.46	0.1300	1.70	30.0	1.0	450	0.50
	TW05003157LE4005	5172	26/03/19	End L. Mahon	201	C6	Low	Middle		7.9	34.9	24.5	13.2	9.3	1.15	0.1410	1.50	35.0	1.0	1,014	0.50
	TW05003157LE4005	5173	26/03/19	End L. Mahon	201	C6	Low	Bottom		7.9	38.0	26.8	12.7	9.3	1.12	0.1540	1.30	31.0	1.0	933	0.50
	TW04003159LE2005	5174	26/03/19	Blackrock Castle	201	C7	Low	Top	4.10	7.7	13.6	8.9	16.2	9.5	3.10	0.0770	3.40	24.0	1.0	583	0.50
	TW04003159LE2005	5175	26/03/19	Blackrock Castle	201	C7	Low	Middle		7.9	36.6	25.7	14.1	8.9	1.08	0.1470	1.40	32.0	1.0	1,354	0.50
	TW04003159LE2005	5176	26/03/19	Blackrock Castle	201	C7	Low	Bottom		7.9	38.7	27.5	13.5	9.1	1.08	0.1430	1.20	32.0	1.0	557	0.50
	TW05003157LE4004	5177	26/03/19	Mid L. Mahon	201	C8	Low	Top	8.40	7.9	33.2	23.1	14.6	9.6	1.48	0.1420	1.70	33.0	1.0	650	0.50
	TW05003157LE4004	5178	26/03/19	Mid L. Mahon	201	C8	Low	Middle		7.9	35.8	25.1	13.7	9.2	1.02	0.1430	1.50	31.0	1.0	1,043	0.50
	TW05003157LE4004	5179	26/03/19	Mid L. Mahon	201	C8	Low	Bottom		7.9	38.9	27.6	12.8	9.2	0.88	0.1720	1.20	32.0	1.0	1,450	0.50
	TW04003159LE2006	5180	26/03/19	Tivoli	201	C9	Low	Top	6.80	7.7	13.7	9.0	19.4	8.5	3.60	0.0990	3.40	24.0	1.0	4,611	0.50
	TW04003159LE2006	5181	26/03/19	Tivoli	201	C9	Low	Bottom		7.9	37.8	26.7	16.5	8.5	0.97	0.0175	1.30	35.0	1.0	528	0.50
	CW05003150LE8004	5182	26/03/19	Haulbowline	301	C5	High	Top	15.60	7.9	38.7	27.5	12.9	9.3	0.94	0.1440	1.30	27.0	1.0	323	0.50
	CW05003150LE8004	5183	26/03/19	Haulbowline	301	C5	High	Middle		8.0	45.0	32.1	11.7	9.5	0.47	0.0175	0.70	18.0	1.0	120	1.50
	CW05003150LE8004	5184	26/03/19	Haulbowline	301	C5	High	Bottom		7.9	46.1	33.3	11.2	9.7	0.32	0.0175	0.60	16.0	1.0	75	0.50
	TW05003157LE4005	5185	26/03/19	End L. Mahon	201	C6	High	Top	11.80	7.9	36.2	25.5	15.2	8.4	1.19	0.1060	1.40	26.0	1.0	637	0.50
	TW05003157LE4005	5186	26/03/19	End L. Mahon	201	C6	High	Middle		8.0	42.7	30.6	12.7	9.0	0.75	0.0500	0.90	25.0	1.0	617	0.50
	TW05003157LE4005	5187	26/03/19	End L. Mahon	201	C6	High	Bottom		8.0	44.0	31.8	11.8	9.5	0.52	0.0175	0.70	21.0	1.0	109	0.50
	TW04003159LE2005	5188	26/03/19	Blackrock Castle	201	C7	High	Top	10.20	7.7	18.1	12.1	12.8	9.8	2.08	0.1300	2.40	24.0	1.0	670	0.50
	TW04003159LE2005	5189	26/03/19	Blackrock Castle	201	C7	High	Middle		7.9	39.5	28.0	11.8	9.3	0.97	0.1840	1.30	36.0	1.0	743	0.50
	TW04003159LE2005	5190	26/03/19	Blackrock Castle	201	C7	High	Bottom		7.9	38.4	27.1	11.2	9.4	0.89	0.1490	1.30	34.0	1.0	171	0.50
	TW05003157LE4004	5191	26/03/19	Mid L. Mahon	201	C8	High	Top	11.40	7.9	23.2	15.7	13.2	9.4	1.99	0.1050	2.30	26.0	1.0	521	0.50
	TW05003157LE4004	5192	26/03/19	Mid L. Mahon	201	C8	High	Middle		7.9	40.6	29.0	12.0	9.3	0.86	0.0860	1.10	27.0	1.0	364	0.50
	TW05003157LE4004	5193	26/03/19	Mid L. Mahon	201	C8	High	Bottom		8.0	40.9	29.3	11.4	9.4	0.64	0.0940	1.00	26.0	1.0	256	0.50
	TW04003159LE2006	5194	26/03/19	Tivoli	201	C9	High	Top	9.20	7.8	95.3	6.1	13.9	9.7	2.62	0.0640	3.30	22.0	1.0	743	0.50
	TW04003159LE2006	5195	26/03/19	Tivoli	201	C9	High	Bottom		7.9	38.7	27.5	12.2	9.8	0.94	0.1430	1.30	39.0	1.0	309	0.50

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										435		473	525	250	566	73	564	414			999
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	Ammonia	Total Nitrogen	Ortho-Phosphate	Chlorophyll-a	E. Coliforms	BOD
									m	pH unit	mS/cm @ 20°C	PSU	°C	mg/l O2	mg/l N	mg/l N	mg/l N	µg/l P	µg/l	MPN/100mls	mg/l O2
19-01763	CW05003150LE8004	6127	24/04/19	Haulbowline	301	C5	Low	Top	14.10	8.0	34.5	24.7	13.8	8.6	0.89	0.1000	1.20	13.0	1.0	882	0.50
	CW05003150LE8004	6128	24/04/19	Haulbowline	301	C5	Low	Middle		8.1	37.2	26.2	13.9	8.8	0.72	0.0790	1.10	10.0	3.5	657	0.50
	CW05003150LE8004	6129	24/04/19	Haulbowline	301	C5	Low	Bottom		8.1	39.6	0.5	13.4	9.0	0.56	0.0500	0.90	5.0	2.7	583	0.50
	TW05003157LE4005	6130	24/04/19	End L. Mahon	201	C6	Low	Top	8.80	8.1	27.1	18.9	12.3	9.1	1.38	0.1060	1.70	14.0	3.7	554	0.50
	TW05003157LE4005	6131	24/04/19	End L. Mahon	201	C6	Low	Middle		8.0	30.5	21.4	13.6	9.1	1.20	0.0990	1.50	14.0	2.9	798	1.40
	TW05003157LE4005	6132	24/04/19	End L. Mahon	201	C6	Low	Bottom		8.1	33.2	22.7	12.1	9.1	0.98	0.1070	1.50	14.0	2.4	988	0.50
	TW04003159LE2005	6133	24/04/19	Blackrock Castle	201	C7	Low	Top	4.10	7.8	5.1	2.7	12.8	9.9	3.06	0.1060	3.30	51.0	1.0	7,701	0.50
	TW04003159LE2005	6134	24/04/19	Blackrock Castle	201	C7	Low	Middle		7.9	30.8	21.4	12.6	9.2	1.11	0.1960	1.60	25.0	3.2	624	0.50
	TW04003159LE2005	6135	24/04/19	Blackrock Castle	201	C7	Low	Bottom		8.0	34.4	23.7	12.7	9.2	0.92	0.1500	1.40	19.0	2.1	1,164	0.50
	TW05003157LE4004	6136	24/04/19	Mid L. Mahon	201	C8	Low	Top	8.40	8.0	15.3	10.4	14.0	9.5	2.25	0.0790	2.60	18.0	3.5	1,450	0.50
	TW05003157LE4004	6137	24/04/19	Mid L. Mahon	201	C8	Low	Middle		8.0	29.4	20.9	13.4	9.1	1.23	0.1300	1.90	17.0	2.0	1,043	0.50
	TW05003157LE4004	6138	24/04/19	Mid L. Mahon	201	C8	Low	Bottom		8.0	37.6	26.0	12.9	9.1	0.71	0.1200	1.40	16.0	1.0	1,050	0.50
	TW04003159LE2006	6139	24/04/19	Tivoli	201	C9	Low	Top	6.80	7.7	3.1	1.8	14.5	9.5	4.80	0.0510	4.30	21.0	1.0	5,794	0.50
	TW04003159LE2006	6140	24/04/19	Tivoli	201	C9	Low	Bottom		8.0	36.0	25.3	13.5	9.0	0.82	0.1600	1.40	18.0	4.5	538	0.50
	CW05003150LE8004	6141	24/04/19	Haulbowline	301	C5	High	Top	15.60	8.1	40.4	28.9	15.1	8.4	0.52	0.0400	1.00	5.0	4.5	170	0.50
	CW05003150LE8004	6142	24/04/19	Haulbowline	301	C5	High	Middle		8.1	41.7	30.1	13.0	9.1	0.45	0.0400	0.80	5.0	3.5	63	0.50
	CW05003150LE8004	6143	24/04/19	Haulbowline	301	C5	High	Bottom		8.1	43.3	31.3	12.0	9.4	0.33	0.0175	0.70	5.0	4.0	52	0.50
	TW05003157LE4005	6144	24/04/19	End L. Mahon	201	C6	High	Top	11.80	8.1	35.9	25.5	12.3	9.1	0.88	0.0950	1.30	12.0	3.5	1,793	0.50
	TW05003157LE4005	6145	24/04/19	End L. Mahon	201	C6	High	Middle		8.1	39.3	28.2	12.2	9.0	0.52	0.0500	1.10	5.0	1.0	309	0.50
	TW05003157LE4005	6146	24/04/19	End L. Mahon	201	C6	High	Bottom		8.1	42.1	30.4	12.1	9.5	0.41	0.0175	0.80	5.0	10.7	63	0.50
	TW04003159LE2005	6147	24/04/19	Blackrock Castle	201	C7	High	Top	10.20	7.8	9.2	5.9	12.8	9.9	2.92	0.0600	3.40	15.0	2.7	1,291	0.50
	TW04003159LE2005	6148	24/04/19	Blackrock Castle	201	C7	High	Middle		8.0	31.1	21.7	12.6	9.2	0.86	0.1600	1.60	22.0	3.7	2,755	0.50
	TW04003159LE2005	6149	24/04/19	Blackrock Castle	201	C7	High	Bottom		8.1	33.1	23.3	12.5	9.2	1.09	0.1200	1.50	15.0	1.0	1,112	0.50
	TW05003157LE4004	6150	24/04/19	Mid L. Mahon	201	C8	High	Top	11.40	8.1	32.7	23.2	12.5	9.4	1.01	0.1100	1.50	15.0	2.9	794	0.50
	TW05003157LE4004	6151	24/04/19	Mid L. Mahon	201	C8	High	Middle		8.1	39.3	28.1	12.3	9.1	0.58	0.9600	1.20	12.0	10.9	1,268	0.50
	TW05003157LE4004	6152	24/04/19	Mid L. Mahon	201	C8	High	Bottom		8.1	39.1	28.1	12.3	9.1	0.50	0.0700	1.10	5.0	3.5	305	0.50
	TW04003159LE2006	6153	24/04/19	Tivoli	201	C9	High	Top	9.20	7.8	9.5	2.7	13.4	10.0	2.92	0.1000	3.50	42.0	1.0	9,208	0.50
	TW04003159LE2006	6154	24/04/19	Tivoli	201	C9	High	Bottom		8.0	34.7	24.7	12.8	9.5	0.87	0.1700	1.50	21.0	1.0	602	0.50
19-02136	CW05003150LE8004	7291	29/05/19	Haulbowline	301	C5	Low	Top	14.10	8.1	44.8	32.7	20.5	9.0	0.20	0.1000	0.56	14.0	5.9	496	2.20
	CW05003150LE8004	7292	29/05/19	Haulbowline	301	C5	Low	Middle		8.1	45.3	33.2	17.8	8.0	0.16	0.1000	0.53	16.0	1.0	420	1.90
	CW05003150LE8004	7293	29/05/19	Haulbowline	301	C5	Low	Bottom		8.1	45.6	33.2	15.2	8.8	0.13	0.0600	0.25	11.0	1.0	256	1.80
	TW05003157LE4005	7294	29/05/19	End L. Mahon	201	C6	Low	Top	8.80	8.2	35.1	25.0	15.3	8.5	0.96	0.1200	1.30	21.0	1.0	529	1.40
	TW05003157LE4005	7295	29/05/19	End L. Mahon	201	C6	Low	Middle		8.2	43.2	31.2	14.9	8.6	0.30	0.1300	0.78	20.0	5.3	820	2.90
	TW05003157LE4005	7296	29/05/19	End L. Mahon	201	C6	Low	Bottom		8.2	44.4	32.2	14.7	8.9	0.21	0.1100	0.76	19.0	7.2	1,092	1.90
	TW04003159LE2005	7297	29/05/19	Blackrock Castle	201	C7	Low	Top	4.10	8.1	27.6	19.0	16.1	9.5	1.18	0.1500	1.72	24.0	3.7	3,130	1.90
	TW04003159LE2005	7298	29/05/19	Blackrock Castle	201	C7	Low	Middle		8.1	44.7	32.4	15.4	8.5	0.24	2.0000	0.70	10.0	7.5	0	32.40
	TW04003159LE2005	7299	29/05/19	Blackrock Castle	201	C7	Low	Bottom		8.2	43.8	31.8	15.0	8.4	0.18	0.1300	0.65	22.0	6.1	262	2.60
	TW05003157LE4004	7300	29/05/19	Mid L. Mahon	201	C8	Low	Top	8.40	8.2	39.5	28.3	15.2	8.4	0.69	0.1000	0.90	17.0	5.9	422	2.10
	TW05003157LE4004	7301	29/05/19	Mid L. Mahon	201	C8	Low	Middle		8.1	44.8	32.7	14.8	8.4	0.25	0.1200	0.58	15.0	1.0	108	1.80
	TW05003157LE4004	7302	29/05/19	Mid L. Mahon	201	C8	Low	Bottom		8.2	44.1	32.1	14.4	8.7	0.16	0.1300	0.62	20.0	1.0	199	2.20
	TW04003159LE2006	7303	29/05/19	Tivoli	201	C9	Low	Top	6.80	8.0	24.5	16.6	15.8	8.6	1.82	0.2000	1.96	46.0	3.7	4,786	1.70
	TW04003159LE2006	7304	29/05/19	Tivoli	201	C9	Low	Bottom		8.1	44.6	32.2	15.3	8.3	0.18	0.1600	0.67	33.0	6.1	761	1.70
	CW05003150LE8004	7305	29/05/19	Haulbowline	301	C5	High	Top	15.60	8.1	45.5	33.0	16.1	8.1	0.11	0.0360	0.25	5.0	5.9	121	1.50
	CW05003150LE8004	7306	29/05/19	Haulbowline	301	C5	High	Middle		8.1	46.2	33.7	14.7	8.5	0.08	0.0175	0.25	5.0	3.7	199	1.10
	CW05003150LE8004	7307	29/05/19	Haulbowline	301	C5	High	Bottom		8.1	46.7	34.2	15.0	8.6	0.04	0.0175	0.25	5.0	1.0	31	1.20
	TW05003157LE4005	7308	29/05/19	End L. Mahon	201	C6	High	Top	11.80	8.2	44.1	32.0	16.0	8.2	0.23	0.0600	0.61	5.0	19.2	355	1.70
	TW05003157LE4005	7309	29/05/19	End L. Mahon	201	C6	High	Middle		8.1	45.3	32.9	15.4	8.2	0.15	0.0500	0.55	13.0	4.3	399	1.80
	TW05003157LE4005	7310	29/05/19	End L. Mahon	201	C6	High	Bottom		8.1	45.7	33.2	14.9	8.3	0.09	0.0390	0.25	5.0	6.1	20	1.20
	TW04003159LE2005	7311	29/05/19	Blackrock Castle	201	C7	High	Top	10.20	8.1	37.0	26.4	17.7	8.2	0.64	0.0900	1.05	14.0	5.9	723	2.10
	TW04003159LE2005	7312	29/05/19	Blackrock Castle	201	C7	High	Middle		8.1	44.5	32.1	16.7	8.0	0.49	0.1100	0.67	19.0	5.3	2,909	1.70
	TW04003159LE2005	7313	29/05/19	Blackrock Castle	201	C7	High	Bottom		8.1	44.7	32.5	15.9	8.2	0.25	0.1400	0.64	23.0	4.5	754	1.60
	TW05003157LE4004	7314	29/05/19	Mid L. Mahon	201	C8	High	Top	11.40	8.2	42.3	30.5	16.6	8.2	0.38	0.0800	0.70	11.0	4.0	990	2.00
	TW05003157LE4004	7315	29/05/19	Mid L. Mahon	201	C8	High	Middle		8.1	44.3	32.0	15.9	8.2	0.24	0.0900	0.60	15.0	4.3	1,785	1.80
	TW05003157LE4004	7316	29/05/19	Mid L. Mahon	201	C8	High	Bottom		8.1	45.1	33.2	15.1	8.2	0.12	0.0800	0.52	15.0	1.0	789	1.80
	TW04003159LE2006	7317	29/05/19	Tivoli	201	C9	High	Top	9.20	8.1	34.2	24.2	15.8	8.6	1.04	0.1200	1.31	19.0	6.1	987	1.70
	TW04003159LE2006	7318	29/05/19	Tivoli	201	C9	High	Bottom		8.1	44.7	32.7	15.7	8.3	0.17	0.1300	0.61	23.0	2.7	131	1.70

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									435		473	525	250	566	73	564	414		999
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	Ammonia	Total Nitrogen	Ortho-Phosphate	Chlorophyll-a	E. Coliforms	BOD
									m	pH unit	mS/cm @ 20°C	PSU	°C	mg/l O2	mg/l N	mg/l N	mg/l N	µg/l P	µg/l	MPN/100mls	mg/l O2
19-02507	CW05003150LE8004	8318	24/06/19	Haulbowline	301	C5	Low	Top	14.10	8.2	42.6	31.1	20.5	8.3	0.14	0.0700	0.80	5.0	22.2	336	4.50
	CW05003150LE8004	8319	24/06/19	Haulbowline	301	C5	Low	Middle		8.2	43.8	31.4	18.5	8.8	0.11	0.0600	0.70	5.0	21.4	213	3.10
	CW05003150LE8004	8320	24/06/19	Haulbowline	301	C5	Low	Bottom		8.1	45.3	33.3	17.3	8.9	0.07	0.0500	0.25	5.0	17.4	288	1.20
	TW05003157LE4005	8321	24/06/19	End L. Mahon	201	C6	Low	Top	8.80	8.3	31.5	22.1	20.7	8.6	0.60	0.1100	1.40	10.0	17.9	1,860	3.00
	TW05003157LE4005	8322	24/06/19	End L. Mahon	201	C6	Low	Middle		8.3	40.3	29.2	19.3	8.9	0.22	0.0700	0.90	5.0	18.4	776	3.50
	TW05003157LE4005	8323	24/06/19	End L. Mahon	201	C6	Low	Bottom		8.2	41.8	30.4	18.3	9.0	0.16	0.0800	0.70	5.0	16.3	883	2.60
	TW04003159LE2005	8324	24/06/19	Blackrock Castle	201	C7	Low	Top	4.10	7.7	7.8	5.0	20.1	8.8	2.59	0.1500	2.50	41.0	3.2	6,488	0.50
	TW04003159LE2005	8325	24/06/19	Blackrock Castle	201	C7	Low	Middle		8.2	40.8	29.5	18.9	8.4	0.18	0.0900	0.90	12.0	13.6	932	2.80
	TW04003159LE2005	8326	24/06/19	Blackrock Castle	201	C7	Low	Bottom		8.2	42.6	30.8	17.7	8.4	0.19	0.1000	0.70	19.0	9.1	638	1.80
	TW05003157LE4004	8327	24/06/19	Mid L. Mahon	201	C8	Low	Top	8.40	8.3	32.6	23.1	21.2	8.3	0.62	0.0800	1.00	5.0	21.6	2,143	3.00
	TW05003157LE4004	8328	24/06/19	Mid L. Mahon	201	C8	Low	Middle		8.2	41.1	29.9	19.5	8.5	0.22	0.0800	0.80	11.0	25.4	1,850	2.70
	TW05003157LE4004	8329	24/06/19	Mid L. Mahon	201	C8	Low	Bottom		8.2	43.5	31.8	18.1	8.6	0.10	0.1000	0.80	17.0	13.9	529	1.40
	TW04003159LE2006	8330	24/06/19	Tivoli	201	C9	Low	Top	6.80	7.7	6.9	4.6	19.9	8.8	1.37	0.1600	2.80	15.0	2.7	12,997	1.30
	TW04003159LE2006	8331	24/06/19	Tivoli	201	C9	Low	Bottom		8.1	42.3	30.7	18.5	8.2	0.20	0.1400	0.80	25.0	1.0	620	2.90
	CW05003150LE8004	8332	24/06/19	Haulbowline	301	C5	High	Top	15.60	8.3	43.7	31.8	20.6	7.7	0.06	0.1100	0.90	5.0	1.0	31	4.40
	CW05003150LE8004	8333	24/06/19	Haulbowline	301	C5	High	Middle		8.2	45.8	33.8	18.1	8.5	0.01	0.0600	0.50	5.0	1.0	5	2.90
	CW05003150LE8004	8334	24/06/19	Haulbowline	301	C5	High	Bottom		8.1	46.0	34.1	18.1	8.6	0.01	0.0800	0.50	5.0	2.9	5	1.90
	TW05003157LE4005	8335	24/06/19	End L. Mahon	201	C6	High	Top	11.80	8.3	40.7	29.5	23.2	7.6	0.19	0.1700	1.00	11.0	5.9	75	4.60
	TW05003157LE4005	8336	24/06/19	End L. Mahon	201	C6	High	Middle		8.2	44.9	33.0	20.0	7.8	0.03	0.0700	0.60	11.0	1.0	10	1.60
	TW05003157LE4005	8337	24/06/19	End L. Mahon	201	C6	High	Bottom		8.1	45.4	33.3	18.0	8.4	0.03	0.0500	0.50	5.0	1.0	63	1.40
	TW04003159LE2005	8338	24/06/19	Blackrock Castle	201	C7	High	Top	10.20	7.6	0.9	5.8	18.9	8.5	1.71	0.2400	2.70	29.0	1.0	19,863	0.50
	TW04003159LE2005	8339	24/06/19	Blackrock Castle	201	C7	High	Middle		8.3	40.8	29.7	17.5	8.4	0.20	0.1400	0.90	5.0	4.0	695	4.80
	TW04003159LE2005	8340	24/06/19	Blackrock Castle	201	C7	High	Bottom		8.2	40.9	29.4	16.7	8.5	0.19	0.1300	0.80	5.0	3.5	305	3.90
	TW05003157LE4004	8341	24/06/19	Mid L. Mahon	201	C8	High	Top	11.40	8.1	21.6	14.8	20.0	8.2	1.10	0.1600	0.70	19.0	1.0	7,270	1.20
	TW05003157LE4004	8342	24/06/19	Mid L. Mahon	201	C8	High	Middle		8.2	43.5	31.6	18.1	8.2	0.12	0.1100	1.70	5.0	13.3	31	3.20
	TW05003157LE4004	8343	24/06/19	Mid L. Mahon	201	C8	High	Bottom		8.2	44.4	32.4	18.3	8.2	0.06	0.8600	0.60	10.0	7.2	120	2.00
	TW04003159LE2006	8344	24/06/19	Tivoli	201	C9	High	Top	9.20	7.7	12.3	8.1	17.7	8.8	2.19	0.1900	2.80	40.0	3.5	11,199	1.70
	TW04003159LE2006	8345	24/06/19	Tivoli	201	C9	High	Bottom		8.2	42.1	30.5	16.9	8.6	0.18	0.1100	0.80	22.0	3.2	41	1.80
19-02952	CW05003150LE8004	9468	23/07/19	Haulbowline	301	C5	Low	Top	14.10	8.4	44.8	32.5	19.3	7.9	0.01	0.0175	1.08	5.0	92.9	288	3.30
	CW05003150LE8004	9469	23/07/19	Haulbowline	301	C5	Low	Middle		8.3	45.5	33.0	18.3	7.7	0.01	0.0175	0.58	5.0	35.2	246	4.00
	CW05003150LE8004	9470	23/07/19	Haulbowline	301	C5	Low	Bottom		8.2	46.0	33.4	18.2	8.1	0.01	0.0175	0.25	5.0	13.6	109	2.90
	TW05003157LE4005	9471	23/07/19	End L. Mahon	201	C6	Low	Top	8.80	8.4	43.2	31.2	19.6	7.9	0.03	0.0175	0.88	18.0	58.2	1,086	7.20
	TW05003157LE4005	9472	23/07/19	End L. Mahon	201	C6	Low	Middle		8.4	43.5	31.4	19.3	7.8	0.02	0.0400	0.73	5.0	29.9	816	5.30
	TW05003157LE4005	9473	23/07/19	End L. Mahon	201	C6	Low	Bottom		8.4	43.6	31.5	19.0	8.0	0.01	0.0175	0.84	5.0	13.4	620	4.00
	TW04003159LE2005	9474	23/07/19	Blackrock Castle	201	C7	Low	Top	4.10	8.5	27.0	18.5	19.8	8.7	1.20	0.0175	1.76	11.0	60.9	2,851	1.40
	TW04003159LE2005	9475	23/07/19	Blackrock Castle	201	C7	Low	Middle		8.3	43.1	31.1	19.3	7.3	0.06	0.0520	0.63	11.0	3.7	97	2.10
	TW04003159LE2005	9476	23/07/19	Blackrock Castle	201	C7	Low	Bottom		8.3	41.6	29.9	19.0	7.3	0.05	0.0730	0.73	13.0	3.5	216	3.10
	TW05003157LE4004	9477	23/07/19	Mid L. Mahon	201	C8	Low	Top	8.40	8.4	42.0	30.2	20.1	7.5	0.09	0.0175	0.95	5.0	34.2	148	4.50
	TW05003157LE4004	9478	23/07/19	Mid L. Mahon	201	C8	Low	Middle		8.4	43.5	31.4	20.0	7.8	0.02	0.0175	0.85	5.0	17.4	187	4.30
	TW05003157LE4004	9479	23/07/19	Mid L. Mahon	201	C8	Low	Bottom		8.3	44.2	32.0	19.3	7.6	0.01	0.0175	0.65	5.0	1.0	305	1.90
	TW04003159LE2006	9480	23/07/19	Tivoli	201	C9	Low	Top	6.80	8.2	15.7	10.3	20.8	7.8	1.80	0.1500	2.43	22.0	10.1	4,106	4.50
	TW04003159LE2006	9481	23/07/19	Tivoli	201	C9	Low	Bottom		8.2	43.5	31.4	19.8	7.1	0.12	0.3050	1.70	27.0	1.0	134	1.80
	CW05003150LE8004	9482	23/07/19	Haulbowline	301	C5	High	Top	15.60	8.4	46.4	33.8	17.9	7.6	0.01	0.0175	0.58	5.0	34.4	63	6.70
	CW05003150LE8004	9483	23/07/19	Haulbowline	301	C5	High	Middle		8.3	45.1	32.7	17.6	7.6	0.01	0.0175	0.73	5.0	22.7	52	5.40
	CW05003150LE8004	9484	23/07/19	Haulbowline	301	C5	High	Bottom		8.3	46.5	33.8	17.0	8.5	0.01	0.0175	0.54	5.0	18.4	98	4.70
	TW05003157LE4005	9485	23/07/19	End L. Mahon	201	C6	High	Top	11.80	8.5	45.2	32.8	17.7	7.6	0.01	0.0175	0.76	5.0	53.7	121	8.10
	TW05003157LE4005	9486	23/07/19	End L. Mahon	201	C6	High	Middle		8.4	45.6	33.1	17.4	7.7	0.01	0.0175	0.81	10.0	29.4	31	5.40
	TW05003157LE4005	9487	23/07/19	End L. Mahon	201	C6	High	Bottom		8.3	45.9	33.4	17.1	8.2	0.01	0.0175	0.54	5.0	25.4	75	4.70
	TW04003159LE2005	9488	23/07/19	Blackrock Castle	201	C7	High	Top	10.20	8.5	31.7	22.1	18.7	7.9	0.50	0.0175	1.62	11.0	110.0	86	7.90
	TW04003159LE2005	9489	23/07/19	Blackrock Castle	201	C7	High	Middle		8.4	43.4	31.3	18.5	7.6	0.05	0.0400	0.68	5.0	10.4	181	3.30
	TW04003159LE2005	9490	23/07/19	Blackrock Castle	201	C7	High	Bottom		8.4	43.3	31.3	18.3	7.7	0.03	0.0500	0.89	5.0	5.1	199	3.20
	TW05003157LE4004	9491	23/07/19	Mid L. Mahon	201	C8	High	Top	11.40	8.6	44.5	32.2	17.9	7.9	0.01	0.0175	1.01	5.0	69.7	148	2.80
	TW05003157LE4004	9492	23/07/19	Mid L. Mahon	201	C8	High	Middle		8.4	45.1	32.7	17.8	7.8	0.01	0.0175	0.82	5.0	35.0	187	6.00
	TW05003157LE4004	9493	23/07/19	Mid L. Mahon	201	C8	High	Bottom		8.4	45.3	32.9	17.6	8.1	0.01	0.0175	0.64	5.0	27.8	121	5.00
	TW04003159LE2006	9494	23/07/19	Tivoli	201	C9	High	Top	9.20	8.5	23.5	15.9	18.9	8.1	1.20	0.0500	1.92	12.0	55.5	2,481	4.00
	TW04003159LE2006	9495	23/07/19	Tivoli	201	C9	High	Bottom		8.3	43.4	31.3	18.6	7.9	0.05	0.0900	0.61	18.0	1.0	5	2.00

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										435		473	525	250	566	73	564	414			999
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	Ammonia	Total Nitrogen	Ortho-Phosphate	Chlorophyll-a	E. Coliforms	BOD
									m	pH unit	mS/cm @ 20°C	PSU	°C	mg/l O2	mg/l N	mg/l N	mg/l N	µg/l P	µg/l	MPN/100mls	mg/l O2
19-03333	CW05003150LE8004	10450	19/08/19	Haulbowline	301	C5	Low	Top	14.10	8.2	42.1	30.3	16.2	8.7	0.11	0.0175	0.61	5.0	33.6	201	2.90
	CW05003150LE8004	10451	19/08/19	Haulbowline	301	C5	Low	Middle		8.2	43.2	31.2	16.0	9.0	0.07	0.0175	0.63	5.0	28.3	201	2.20
	CW05003150LE8004	10452	19/08/19	Haulbowline	301	C5	Low	Bottom		8.2	44.2	32.0	9.3	15.8	0.06	0.0175	0.25	10.0	7.7	185	1.50
	TW05003157LE4005	10453	19/08/19	End L. Mahon	201	C6	Low	Top	8.80	8.2	40.3	28.8	16.0	88.9	0.17	0.0175	0.65	5.0	33.6	201	2.90
	TW05003157LE4005	10454	19/08/19	End L. Mahon	201	C6	Low	Middle		8.2	41.2	29.6	16.2	8.6	0.15	0.0175	0.69	5.0	28.0	201	2.00
	TW05003157LE4005	10455	19/08/19	End L. Mahon	201	C6	Low	Bottom		8.2	41.6	29.9	16.3	9.2	0.13	0.0175	0.53	5.0	24.3	201	1.90
	TW04003159LE2005	10456	19/08/19	Blackrock Castle	201	C7	Low	Top	4.10	8.1	29.7	20.6	20.3	7.9	0.75	0.0175	1.11	5.0	22.7	201	1.70
	TW04003159LE2005	10457	19/08/19	Blackrock Castle	201	C7	Low	Middle		8.2	40.7	29.2	18.1	8.1	0.19	0.0175	0.71	5.0	25.1	201	1.80
	TW04003159LE2005	10458	19/08/19	Blackrock Castle	201	C7	Low	Bottom		8.2	41.6	29.9	17.1	8.3	0.15	0.0175	0.61	5.0	20.3	201	1.90
	TW05003157LE4004	10459	19/08/19	Mid L. Mahon	201	C8	Low	Top	8.40	8.2	37.7	26.8	17.2	9.0	0.32	0.0175	0.75	5.0	32.8	201	2.40
	TW05003157LE4004	10460	19/08/19	Mid L. Mahon	201	C8	Low	Middle		8.2	40.3	28.8	16.6	8.6	0.19	0.0175	0.70	5.0	26.4	201	2.10
	TW05003157LE4004	10461	19/08/19	Mid L. Mahon	201	C8	Low	Bottom		8.2	42.0	30.2	16.4	8.7	0.14	0.0175	0.56	5.0	20.3	201	1.40
	TW04003159LE2006	10462	19/08/19	Tivoli	201	C9	Low	Top	6.80	8.1	19.9	13.3	18.2	8.2	1.23	0.0740	0.70	25.0	9.6	201	0.50
	TW04003159LE2006	10463	19/08/19	Tivoli	201	C9	Low	Bottom		8.1	41.1	29.5	17.5	7.8	0.16	0.0610	1.64	5.0	17.1	201	1.70
	CW05003150LE8004	10464	19/08/19	Haulbowline	301	C5	High	Top	15.60	8.2	44.8	32.5	16.6	8.0	0.01	0.0175	0.25	5.0	18.7	41	2.50
	CW05003150LE8004	10465	19/08/19	Haulbowline	301	C5	High	Middle		8.1	45.7	33.2	15.2	8.6	0.01	0.0175	0.25	5.0	15.2	41	1.80
	CW05003150LE8004	10466	19/08/19	Haulbowline	301	C5	High	Bottom		8.2	45.8	33.3	14.1	8.3	0.04	0.0175	0.25	5.0	9.6	20	1.20
	TW05003157LE4005	10467	19/08/19	End L. Mahon	201	C6	High	Top	11.80	8.3	42.1	30.3	17.9	7.9	0.02	0.0175	0.25	5.0	36.0	98	3.30
	TW05003157LE4005	10468	19/08/19	End L. Mahon	201	C6	High	Middle		8.2	43.6	31.5	16.4	8.1	0.01	0.0175	0.61	5.0	21.1	185	2.30
	TW05003157LE4005	10469	19/08/19	End L. Mahon	201	C6	High	Bottom		8.2	44.6	32.3	15.9	9.0	0.01	0.0175	0.53	5.0	18.4	109	1.50
	TW04003159LE2005	10470	19/08/19	Blackrock Castle	201	C7	High	Top	10.20	8.3	36.9	26.2	18.2	7.9	0.31	0.0175	0.84	5.0	33.6	201	3.30
	TW04003159LE2005	10471	19/08/19	Blackrock Castle	201	C7	High	Middle		8.2	42.1	30.6	17.0	8.2	0.08	0.0175	0.62	5.0	15.0	171	2.50
	TW04003159LE2005	10472	19/08/19	Blackrock Castle	201	C7	High	Bottom		8.2	42.9	30.9	16.1	8.6	0.07	0.0175	0.58	5.0	23.8	31	1.60
	TW05003157LE4004	10473	19/08/19	Mid L. Mahon	201	C8	High	Top	11.40	8.3	41.8	30.0	18.5	7.8	0.03	0.0175	0.59	5.0	36.8	185	3.40
	TW05003157LE4004	10474	19/08/19	Mid L. Mahon	201	C8	High	Middle		8.3	42.9	30.9	17.3	8.0	0.01	0.0175	0.67	5.0	24.6	97	3.10
	TW05003157LE4004	10475	19/08/19	Mid L. Mahon	201	C8	High	Bottom		8.2	43.8	31.7	16.6	8.4	0.01	0.0175	0.53	5.0	21.9	41	1.90
	TW04003159LE2006	10476	19/08/19	Tivoli	201	C9	High	Top	9.20	8.2	29.9	20.7	19.5	7.7	0.70	0.0175	1.18	5.0	26.2	201	2.40
	TW04003159LE2006	10477	19/08/19	Tivoli	201	C9	High	Bottom		8.2	42.3	30.4	16.7	9.2	0.10	0.0175	0.65	5.0	4.8	201	2.40
19-03790	CW05003150LE8004	11701	18/09/19	Haulbowline	301	C5	Low	Top	14.10	8.1	43.8	31.7	18.7	8.1	0.12	0.0175	0.60	10.0	5.9	754	1.60
	CW05003150LE8004	11702	18/09/19	Haulbowline	301	C5	Low	Middle		8.1	44.6	32.3	18.1	8.2	0.09	0.0440	0.61	11.0	6.4	1,725	1.30
	CW05003150LE8004	11703	18/09/19	Haulbowline	301	C5	Low	Bottom		8.1	45.0	32.6	17.4	8.5	0.05	0.0360	0.53	12.0	1.0	1,780	1.10
	TW05003157LE4005	11704	18/09/19	End L. Mahon	201	C6	Low	Top	8.80	8.1	42.1	30.3	18.4	8.2	0.21	0.0175	0.75	11.0	10.9	644	2.10
	TW05003157LE4005	11705	18/09/19	End L. Mahon	201	C6	Low	Middle		8.1	42.6	30.7	18.0	8.2	0.16	0.0460	0.93	12.0	13.6	1,780	1.60
	TW05003157LE4005	11706	18/09/19	End L. Mahon	201	C6	Low	Bottom		8.1	43.1	31.1	17.5	8.6	0.16	0.0560	1.15	14.0	11.7	987	1.30
	TW04003159LE2005	11707	18/09/19	Blackrock Castle	201	C7	Low	Top	4.10	8.0	32.8	23.0	19.7	7.9	0.83	0.0400	1.11	18.0	6.9	3,448	2.00
	TW04003159LE2005	11708	18/09/19	Blackrock Castle	201	C7	Low	Middle		8.1	42.1	30.3	18.7	7.9	0.19	0.0960	0.95	15.0	18.4	932	1.80
	TW04003159LE2005	11709	18/09/19	Blackrock Castle	201	C7	Low	Bottom		8.1	42.6	932.0	18.1	8.0	0.17	0.1060	0.75	19.0	10.7	932	1.70
	TW05003157LE4004	11710	18/09/19	Mid L. Mahon	201	C8	Low	Top	8.40	8.1	41.7	932.0	26.1	8.1	0.23	0.0175	0.96	13.0	14.4	1,178	2.20
	TW05003157LE4004	11711	18/09/19	Mid L. Mahon	201	C8	Low	Middle		8.1	42.0	30.2	18.7	8.1	0.20	0.0460	0.77	12.0	18.4	677	2.10
	TW05003157LE4004	11712	18/09/19	Mid L. Mahon	201	C8	Low	Bottom		8.1	43.5	31.4	17.9	8.3	0.13	0.0480	0.83	16.0	8.5	1,396	1.40
	TW04003159LE2006	11713	18/09/19	Tivoli	201	C9	Low	Top	6.80	7.8	12.4	7.9	21.7	8.1	1.40	0.1060	1.99	27.0	13.4	11,199	1.30
	TW04003159LE2006	11714	18/09/19	Tivoli	201	C9	Low	Bottom		8.0	42.2	30.4	20.2	7.3	0.16	0.0920	0.87	23.0	1.0	181	1.40
	CW05003150LE8004	11715	18/09/19	Haulbowline	301	C5	High	Top	15.60	8.1	46.5	33.8	16.1	7.9	0.04	0.0175	0.53	10.0	1.0	52	1.40
	CW05003150LE8004	11716	18/09/19	Haulbowline	301	C5	High	Middle		8.1	46.8	34.1	14.9	8.7	0.01	0.0175	0.25	5.0	2.4	61	1.00
	CW05003150LE8004	11717	18/09/19	Haulbowline	301	C5	High	Bottom		8.1	46.8	34.1	14.7	9.4	0.01	0.0175	0.25	5.0	1.0	10	1.00
	TW05003157LE4005	11718	18/09/19	End L. Mahon	201	C6	High	Top	11.80	8.1	45.2	32.8	13.2	8.8	0.07	0.0175	0.65	12.0	1.0	288	1.60
	TW05003157LE4005	11719	18/09/19	End L. Mahon	201	C6	High	Middle		8.1	45.7	33.2	12.9	8.8	0.03	0.0500	0.56	10.0	1.0	243	1.50
	TW05003157LE4005	11720	18/09/19	End L. Mahon	201	C6	High	Bottom		8.1	45.8	33.3	12.4	9.2	0.05	0.0175	0.51	5.0	1.0	171	1.20
	TW04003159LE2005	11721	18/09/19	Blackrock Castle	201	C7	High	Top	10.20	8.1	43.0	31.0	13.7	8.8	0.36	0.0620	0.85	14.0	9.1	1,500	2.30
	TW04003159LE2005	11722	18/09/19	Blackrock Castle	201	C7	High	Middle		8.1	43.1	31.1	14.5	8.7	0.19	0.1020	0.75	21.0	1.0	2,613	1.90
	TW04003159LE2005	11723	18/09/19	Blackrock Castle	201	C7	High	Bottom		8.2	43.7	31.6	14.7	9.2	0.15	0.1180	29.18	15.0	8.3	1,585	2.20
	TW05003157LE4004	11724	18/09/19	Mid L. Mahon	201	C8	High	Top	11.40	8.1	44.7	32.4	13.5	8.8	0.12	0.0900	0.64	11.0	22.1	738	2.10
	TW05003157LE4004	11725	18/09/19	Mid L. Mahon	201	C8	High	Middle		8.1	44.8	32.5	13.6	8.8	0.09	0.0410	0.62	13.0	5.9	156	1.90
	TW05003157LE4004	11726	18/09/19	Mid L. Mahon	201	C8	High	Bottom		7.9	22.7	15.3	13.0	9.3	0.08	0.0420	0.87	11.0	2.1	299	1.60
	TW04003159LE2006	11727	18/09/19	Tivoli	201	C9	High	Top	9.20	8.1	42.6	30.7	13.9	8.9	0.79	0.0960	1.64	23.0	4.0	15,531	1.20
	TW04003159LE2006	11728	18/09/19	Tivoli	201	C9	High	Bottom		6.7	56.9	42.0	14.8	9.2	0.16	0.0800	0.89	15.0	22.7	28,495	2.30

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									435		473	525	250	566	73	564	414		999
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	Ammonia	Total Nitrogen	Ortho-Phosphate	Chlorophyll-a	E. Coliforms	BOD
									m	pH unit	mS/cm @ 20°C	PSU	°C	mg/l O2	mg/l N	mg/l N	mg/l N	µg/l P	µg/l	MPN/100mls	mg/l O2
19-04293	CW05003150LE8004	13147	24/10/19	Haulbowline	301	C5	Low	Top	14.10	7.9	32.3	22.6	13.8	98.5	1.05	0.1610	3.70	36.0	1.0	1,291	0.50
	CW05003150LE8004	13148	24/10/19	Haulbowline	301	C5	Low	Middle		7.9	39.5	28.2	13.0	8.8	0.56	0.1240	2.94	34.0	5.6	1,674	0.50
	CW05003150LE8004	13149	24/10/19	Haulbowline	301	C5	Low	Bottom		8.0	42.9	30.9	12.1	8.6	0.53	0.1160	2.48	33.0	5.6	1,172	0.50
	TW05003157LE4005	13150	24/10/19	End L. Mahon	201	C6	Low	Top	8.80	7.8	15.2	9.9	10.6	10.4	2.70	0.1510	4.83	41.0	1.0	9,208	0.50
	TW05003157LE4005	13151	24/10/19	End L. Mahon	201	C6	Low	Middle		7.9	37.2	26.4	10.6	10.8	0.69	0.2590	2.76	45.0	1.0	3,873	0.50
	TW05003157LE4005	13152	24/10/19	End L. Mahon	201	C6	Low	Bottom		7.9	39.2	28.0	9.6	97.0	0.55	0.1960	2.89	46.0	1.0	1,607	0.50
	TW04003159LE2005	13153	24/10/19	Blackrock Castle	201	C7	Low	Top	4.10	7.6	9.8	6.2	10.4	10.2	3.75	0.0980	5.42	40.0	1.0	1,860	0.50
	TW04003159LE2005	13154	24/10/19	Blackrock Castle	201	C7	Low	Middle		7.9	41.9	30.1	10.9	8.7	0.43	0.1860	1.01	49.0	1.0	465	0.50
	TW04003159LE2005	13155	24/10/19	Blackrock Castle	201	C7	Low	Bottom		7.9	42.2	30.4	11.6	8.5	0.48	0.1860	1.08	48.0	1.0	1,039	0.50
	TW05003157LE4004	13156	24/10/19	Mid L. Mahon	201	C8	Low	Top	8.40	7.8	15.3	10.0	10.0	10.0	4.60	0.1210	5.65	42.0	2.7	2,723	0.50
	TW05003157LE4004	13157	24/10/19	Mid L. Mahon	201	C8	Low	Middle		7.9	42.4	30.5	10.5	8.8	0.66	0.1900	1.02	45.0	1.0	9,208	0.50
	TW05003157LE4004	13158	24/10/19	Mid L. Mahon	201	C8	Low	Bottom		7.9	42.2	30.4	11.1	8.6	0.58	0.2580	1.08	49.0	1.0	3,448	0.50
	TW04003159LE2006	13159	24/10/19	Tivoli	201	C9	Low	Top	6.80	7.7	6.7	4.1	9.8	10.4	4.25	0.0760	3.97	42.0	1.0	2,098	0.50
	TW04003159LE2006	13160	24/10/19	Tivoli	201	C9	Low	Bottom		7.9	42.1	30.3	9.8	10.0	0.40	0.1930	1.02	43.0	1.0	650	0.50
	CW05003150LE8004	13161	24/10/19	Haulbowline	301	C5	High	Top	15.60	8.0	39.5	28.2	13.4	8.4	0.80	0.1070	2.74	32.0	2.1	908	0.50
	CW05003150LE8004	13162	24/10/19	Haulbowline	301	C5	High	Middle		8.0	43.4	31.3	13.2	8.4	0.34	0.0430	2.60	26.0	1.0	146	0.50
	CW05003150LE8004	13163	24/10/19	Haulbowline	301	C5	High	Bottom		8.0	44.7	32.4	13.3	8.3	0.26	0.0175	2.46	24.0	1.0	197	0.50
	TW05003157LE4005	13164	24/10/19	End L. Mahon	201	C6	High	Top	11.80	7.9	35.8	25.3	13.2	8.7	0.98	0.1560	2.85	38.0	1.0	1,354	0.50
	TW05003157LE4005	13165	24/10/19	End L. Mahon	201	C6	High	Middle		8.0	40.9	29.3	13.2	8.6	0.40	0.0750	2.44	31.0	1.0	933	0.50
	TW05003157LE4005	13166	24/10/19	End L. Mahon	201	C6	High	Bottom		8.0	43.9	31.7	13.3	8.5	0.34	0.0530	2.33	28.0	1.0	602	0.50
	TW04003159LE2005	13167	24/10/19	Blackrock Castle	201	C7	High	Top	10.20	7.8	20.5	13.7	15.1	9.3	1.86	0.1820	4.58	41.0	2.4	4,360	0.50
	TW04003159LE2005	13168	24/10/19	Blackrock Castle	201	C7	High	Middle		7.9	38.0	27.0	14.7	8.6	0.53	0.2780	2.70	48.0	1.0	2,098	0.50
	TW04003159LE2005	13169	24/10/19	Blackrock Castle	201	C7	High	Bottom		7.9	37.5	26.6	14.4	8.5	0.67	0.2570	2.99	51.0	1.0	2,723	0.50
	TW05003157LE4004	13170	24/10/19	Mid L. Mahon	201	C8	High	Top	11.40	7.9	32.3	22.6	14.3	8.6	1.58	0.1620	2.93	39.0	2.1	1,058	0.50
	TW05003157LE4004	13171	24/10/19	Mid L. Mahon	201	C8	High	Middle		8.0	40.9	29.3	13.9	8.5	0.53	0.1130	2.72	37.0	1.0	2,924	0.50
	TW05003157LE4004	13172	24/10/19	Mid L. Mahon	201	C8	High	Bottom		8.0	42.6	30.7	12.7	8.5	0.50	0.0940	2.71	34.0	1.0	1,178	0.50
	TW04003159LE2006	13173	24/10/19	Tivoli	201	C9	High	Top	9.20	7.8	7.1	4.3	14.8	9.9	6.68	0.1090	6.15	43.0	1.0	5,794	0.50
	TW04003159LE2006	13174	24/10/19	Tivoli	201	C9	High	Bottom		7.9	41.3	28.8	14.6	8.7	0.53	0.1740	2.80	43.0	1.0	691	0.50
19-04636	CW05003150LE8004	14259	18/11/19	Haulbowline	301	C5	Low	Top	14.10	7.9	37.2	26.4	9.2	9.5	0.99	0.1350	1.27	5.0	3.2	1,019	1.00
	CW05003150LE8004	14260	18/11/19	Haulbowline	301	C5	Low	Middle		7.9	40.3	28.8	9.3	9.5	0.63	0.1130	0.91	5.0	1.0	933	1.00
	CW05003150LE8004	14261	18/11/19	Haulbowline	301	C5	Low	Bottom		8.0	45.7	33.2	9.8	8.9	0.29	0.0390	0.57	5.0	1.0	161	0.50
	TW05003157LE4005	14262	18/11/19	End L. Mahon	201	C6	Low	Top	8.80	7.9	25.1	17.1	9.7	9.5	1.65	0.1700	2.09	5.0	1.0	554	0.50
	TW05003157LE4005	14263	18/11/19	End L. Mahon	201	C6	Low	Middle		7.9	35.3	24.9	9.6	9.5	1.02	0.1850	1.34	5.0	1.0	1,467	1.00
	TW05003157LE4005	14264	18/11/19	End L. Mahon	201	C6	Low	Bottom		7.9	39.8	28.4	9.8	9.9	0.72	0.1520	1.04	5.0	1.0	1,046	0.50
	TW04003159LE2005	14265	18/11/19	Blackrock Castle	201	C7	Low	Top	4.10	7.7	11.6	7.4	9.0	10.3	2.95	0.0930	3.06	5.0	3.2	1,439	0.50
	TW04003159LE2005	14266	18/11/19	Blackrock Castle	201	C7	Low	Middle		7.9	37.9	26.9	9.3	9.3	0.76	0.1950	1.15	5.0	1.0	331	0.50
	TW04003159LE2005	14267	18/11/19	Blackrock Castle	201	C7	Low	Bottom		7.9	40.6	29.1	9.6	10.1	0.66	0.1790	0.98	5.0	1.0	1,223	1.00
	TW05003157LE4004	14268	18/11/19	Mid L. Mahon	201	C8	Low	Top	8.40	7.8	15.6	10.2	9.0	10.1	3.08	0.1040	3.25	5.0	1.0	789	0.50
	TW05003157LE4004	14269	18/11/19	Mid L. Mahon	201	C8	Low	Middle		7.9	34.9	24.6	9.1	9.5	0.78	0.1910	1.34	5.0	1.0	771	0.50
	TW05003157LE4004	14270	18/11/19	Mid L. Mahon	201	C8	Low	Bottom		8.0	42.2	30.4	9.4	9.9	0.55	0.1340	0.84	5.0	1.0	1,497	0.50
	TW04003159LE2006	14271	18/11/19	Tivoli	201	C9	Low	Top	6.80	7.8	6.3	3.8	9.2	11.5	2.73	0.0750	2.83	5.0	1.0	1,789	0.50
	TW04003159LE2006	14272	18/11/19	Tivoli	201	C9	Low	Bottom		7.9	39.2	28.0	9.3	9.6	0.68	0.2590	1.06	5.0	3.2	823	0.50
	CW05003150LE8004	14273	18/11/19	Haulbowline	301	C5	High	Top	15.60	8.0	39.1	27.9	10.6	9.0	0.76	0.0980	0.99	5.0	1.0	465	0.50
	CW05003150LE8004	14274	18/11/19	Haulbowline	301	C5	High	Middle		8.0	44.7	32.4	9.9	9.4	0.35	0.0450	0.63	5.0	1.0	146	0.50
	CW05003150LE8004	14275	18/11/19	Haulbowline	301	C5	High	Bottom		8.0	45.7	33.2	9.7	10.6	0.28	0.0370	0.55	5.0	1.0	187	0.50
	TW05003157LE4005	14276	18/11/19	End L. Mahon	201	C6	High	Top	11.80	7.9	31.9	22.3	9.3	9.1	1.32	0.1530	1.55	5.0	1.0	836	0.50
	TW05003157LE4005	14277	18/11/19	End L. Mahon	201	C6	High	Middle		8.0	41.5	29.8	9.2	9.4	0.47	0.0680	0.92	5.0	1.0	504	0.50
	TW05003157LE4005	14278	18/11/19	End L. Mahon	201	C6	High	Bottom		8.0	44.7	32.4	8.9	9.9	0.36	0.0420	0.62	5.0	2.1	187	0.50
	TW04003159LE2005	14279	18/11/19	Blackrock Castle	201	C7	High	Top	10.20	7.7	17.5	11.5	9.6	9.8	2.16	0.1200	2.36	5.0	2.4	504	1.00
	TW04003159LE2005	14280	18/11/19	Blackrock Castle	201	C7	High	Middle		7.9	39.7	28.4	9.3	9.4	0.69	0.2330	1.06	5.0	2.4	1,597	1.00
	TW04003159LE2005	14281	18/11/19	Blackrock Castle	201	C7	High	Bottom		7.9	40.6	29.1	9.1	10.2	0.78	0.2170	0.95	5.0	2.1	1,515	0.50
	TW05003157LE4004	14282	18/11/19	Mid L. Mahon	201	C8	High	Top	11.40	7.9	25.6	17.5	8.3	9.7	1.76	0.1450	1.90	5.0	1.0	960	0.50
	TW05003157LE4004	14283	18/11/19	Mid L. Mahon	201	C8	High	Middle		8.0	41.6	30.1	8.5	9.3	0.54	0.1120	0.83	5.0	1.0	1,421	0.50
	TW05003157LE4004	14284	18/11/19	Mid L. Mahon	201	C8	High	Bottom		8.0	43.5	31.4	7.3	11.1	0.44	0.0770	0.70	5.0	1.0	1,281	0.50
	TW04003159LE2006	14285	18/11/19	Tivoli	201	C9	High	Top	9.20	7.8	13.5	8.7	9.6	9.8	2.77	0.1270	2.84	5.0	1.0	683	0.50
	TW04003159LE2006	14286	18/11/19	Tivoli	201	C9	High	Bottom		7.9	39.6	28.3	9.6	9.8	0.70	0.2100	1.06	5.0	1.0	1,106	0.50