Annual Environmental Report

2019

Ballybunion

D0183-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0183-01, Ballybunion, in Kerry in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports where relevant are included as an appendix to the AER.

1.1 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

There was no major capital or operational changes undertaken

1.2 TREATMENT SUMMARY

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

- BALLYBUNNION WWTP with a Plant Capacity PE of 8180, 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
TPEFF1300D0183SW001	BALLYBUNNION WWTP	Treated	Compliant	N/A

1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

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

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 BALLYBUNNION WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - BALLYBUNNION 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	12	601	199.33
Total Nitrogen mg/l	12	65.66	19.54
Total Phosphorus (as P) mg/l	12	7.37	1.97
Suspended Solids mg/l	12	269	84.42
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	270	81.57
Hydraulic Capacity	N/A	11069	2153

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 greater 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 tretament 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 - TPEFF1300D0183SW001

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)
COD-Cr mg/l	125	250	N/A	12	N/A	N/A	21.82	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	2.49	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	20	40	N/A	12	N/A	N/A	1.69	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.4	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	12	N/A	N/A	0.03	Pass
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	1.25	
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	6.16	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	2	N/A	N/A	2.14	
Conductivity 20 C µS/cm	N/A	N/A	N/A	12	N/A	N/A	516.76	

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)
Visual Inspection Descriptive	N/A	N/A	N/A	12	N/A	N/A	N/A	

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):

Not applicable

Significance of Results:

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

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1300D0183SW001

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	85811, 138215	TW13004121CF2006	No	No	No	No	Poor

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 compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

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 - BALLYBUNNION WWTP

2.1.4.1 Treatment Efficiency Report - BALLYBUNNION WWTP

Treatment efficiency is based on the removal of key pollutants from the influent wastewater by the treatment plant. In essence the calculation is based on the balance of load coming into the plant versus the load leaving the plant. The efficiency is presented as a percentage removal rate.

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
TP	2088	1328	36
COD	211776	23179	89
SS	89694	3172	96
TN	20764	6547	68
cBOD	86659	1963	98

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

2.1.4.2 Treatment Capacity Report Summary - BALLYBUNNION 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.

BALLYBUNNION WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	5790
DWF to the Treatment Plant (m^3/day)	1930
Current Hydraulic Loading - annual max (m^3/day)	11069
Average Hydraulic loading to the Treatment Plant (m^3/day)	2153
Organic Capacity (PE) - As Constructed	8180
Organic Capacity (PE) - Collected Load (peak week)[Note1]	5204
Organic Capacity (PE) - Remaining	2976
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 - BALLYBUNNION 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)
Domestic /Septic Tank Sludge	25.45	Volume (m3)	0	0	Yes	Yes	No

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
3	Blocked Sewer	0	3

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	Other	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	1
Number of Incidents reported to the EPA via EDEN in 2019	1
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
SW3	85811, 138215	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	85786, 140918	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	87355, 140711	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW2	86161, 141002	Yes	Medium	Not yet Assessed	Unknown	Unknown	Not Monitored
SW3	85811, 138215	Yes	Low	Meeting	Unknown	Unknown	Monitored
TBC	86187, 138588	No	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
TBC	86508, 139971	No	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	87732, 139512	No	Low	Meeting	Unknown	Unknown	Not Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
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 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
D0183-SIP:01	SW1 - Upgrading of Storm Water Overflows to comply with the criteria outlined in the DoECLG "Procedures and Criteria in relation to Storm Water Overflows, 1995"	C	01/01/2020	No	Not Started		SWO Assessment Programme to assess performance against DoECLG criteri
D0183-SIP:02	SW2 - Upgrading of Storm Water Overflows to comply with the criteria outlined in the DoECLG "Procedures and Criteria in relation to Storm Water Overflows, 1995"	C	01/01/2020	No	Not Started		SWO Assessment Programme to assess performance against DoECLG criteri

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

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
There are no Improvements Programme for this Agglomeration.				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

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

5 LICENCE SPECIFIC REPORTS

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

5.a Licence Specific Reports Summary Table

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
There is no Licence Specific Report Required in this AER Annual Review.				

6 CERTIFICATION AND SIGN OFF

6.1 SUMMARY OF AER CONTENTS

Parameter	Answer
Does the AER include an Executive Summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for consideration of a Technical Amendment / Review of the licence?	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?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	Yes

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

Signed: Date: 26/04/2020

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

WaterbodyN	WaterbodyCode	Waterbodytyp	MonitoringStationCode	MonitoringStationName	SampleDate	SampleMetho	ParameterName	ParameterUnit	Result	TextResult	LimitOfDetection
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	Ammonia-Total (as N)	mg/l	0.017		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	Ammonia-Total (as N)	mg/l	0.014		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	Ammonia-Total (as N)	mg/l	0.098		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	Ammonia-Total (as N)	mg/l	0.1		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	Ammonia-Total (as N)	mg/l	0.047		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	Ammonia-Total (as N)	mg/l	0.078		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	Ammonia-Total (as N)	mg/l	0.023		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	Chlorophyll	µg/l	3.6		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	Chlorophyll	µg/l	4.4		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	Chlorophyll	µg/l		<2	1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	Chlorophyll	µg/l	2.7		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	Chlorophyll	µg/l	53		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	Chlorophyll	µg/l	3.7		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	Chlorophyll	µg/l	10		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	Depth	m	0.3		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	Depth	m	1.3		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	Depth	m	1.3		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	Depth	m	0.6		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	Depth	m	0.3		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	Depth	m	0.1		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	Depth	m	0.1		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	Dissolved Oxygen	% Saturation	100		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	Dissolved Oxygen	% Saturation	101		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	Dissolved Oxygen	% Saturation	125		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	Dissolved Oxygen	% Saturation	123		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	Dissolved Oxygen	% Saturation	127		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	Dissolved Oxygen	% Saturation	86		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	Dissolved Oxygen	% Saturation	93		1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	ortho-Phosphate (as P)	mg/l	0.017		0.005
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	ortho-Phosphate (as P)	mg/l	0.017		0.005
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	ortho-Phosphate (as P)	mg/l		<0.005	0.005
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	ortho-Phosphate (as P)	mg/l		<0.005	0.005
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	ortho-Phosphate (as P)	mg/l	0.0077		0.005
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	ortho-Phosphate (as P)	mg/l	0.033		0.005
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	ortho-Phosphate (as P)	mg/l	0.0093		0.005
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	pH	pH units	8		2
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	pH	pH units	8		2
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	pH	pH units	8.3		2
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	pH	pH units	8.3		2
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	pH	pH units	8.4		2
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	pH	pH units	7.5		2
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	pH	pH units	8.1		2
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	Salinity	PSU	28.4		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	Salinity	PSU	28.6		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	Salinity	PSU	34.4		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	Salinity	PSU	34.4		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	Salinity	PSU		nm	0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	Salinity	PSU	12.6		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	Salinity	PSU	30.9		0.1

WaterbodyN	WaterbodyCode	Waterbodytyp	MonitoringStationCode	MonitoringStationName	SampleDate	SampleMetho	ParameterName	ParameterUnit	Result	TextResult	LimitOfDetection
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	Salinity(Lab)	0/oo	28.7		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	Salinity(Lab)	0/oo	30.1		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	Salinity(Lab)	0/oo	34.3		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	Salinity(Lab)	0/oo	34.3		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	Salinity(Lab)	0/oo	13.2		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	Salinity(Lab)	0/oo	12.6		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	Salinity(Lab)	0/oo	32.3		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	Silica (as SiO2)	mg/l	0.7		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	Silica (as SiO2)	mg/l	0.64		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	Silica (as SiO2)	mg/l	0.29		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	Silica (as SiO2)	mg/l		<0.1	0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	Silica (as SiO2)	mg/l	0.43		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	Silica (as SiO2)	mg/l	2		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	Silica (as SiO2)	mg/l	0.16		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	StationDepth	m	1.5		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	StationDepth	m	1.5		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	StationDepth	m	2.1		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	StationDepth	m	2.1		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	StationDepth	m	1		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	StationDepth	m	2.5		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	StationDepth	m	1		0.1
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	Temperature	°C	8.4		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	Temperature	°C	8.5		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	Temperature	°C	11.8		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	Temperature	°C	11.9		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	Temperature	°C	14.8		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	Temperature	°C	15.7		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	Temperature	°C	16.9		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	Total Oxidised Nitrogen	mg/l	0.33		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	Total Oxidised Nitrogen	mg/l	0.36		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	Total Oxidised Nitrogen	mg/l		<0.01	0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	Total Oxidised Nitrogen	mg/l		<0.01	0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	Total Oxidised Nitrogen	mg/l	0.12		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	Total Oxidised Nitrogen	mg/l	0.4		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	Total Oxidised Nitrogen	mg/l	0.035		0.01
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Surface	Transparency	m		vob	
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	12/02/2019 09:44	TRaC Bottom	Transparency	m		vob	
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Bottom	Transparency	m		vob	
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	14/05/2019 16:06	TRaC Surface	Transparency	m		vob	
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	25/06/2019 08:10	TRaC Depth Co	Transparency	m	0.5		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 10:28	TRaC Surface	Transparency	m	1		
Cashen	IE_SH_060_0100	Transitional	TW13004121CF2006	CF190 - Moneycashen	13/08/2019 17:24	TRaC Surface R	Transparency	m		vob	