Annual Environmental Report

2019

Tralee

D0040-01

CONTENTS

7.1 AMBIENT MONITORING SUMMARY

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0040-01, Tralee, 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.

A second sludge Decanter was installed at the Tralee WWTP. This will greatly assist with the operation of the plant and eliminate the issues with a build up of sludge.

1.2 TREATMENT SUMMARY

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

- Tralee WWTP with a Plant Capacity PE of 50333, the treatment type is 3NP - Tertiary N&P removal with UV

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
TPEFF1300D0040SW001	Tralee WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l Total Nitrogen 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 TRALEE WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - TRALEE 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
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	27	214	99.35
COD-Cr mg/l	27	576	273.79
Total Phosphorus (as P) mg/l	26	5.12	2
Total Nitrogen mg/l	27	54.51	19.59
Suspended Solids mg/l	27	343	157.45
Hydraulic Capacity	N/A	13646	10614

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 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 - TPEFF1300D0040SW001

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	27	2	N/A	35.34	Pass
Suspended Solids mg/l	35	87.5	N/A	27	N/A	N/A	9.89	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	27	N/A	N/A	4.59	Pass
Total Nitrogen mg/l	15	18	N/A	27	1	1	7.73	Fail
Total Oxidised Nitrogen (as N) mg/l	15	18	N/A	27	N/A	N/A	6.08	Pass
pH pH units	9	9	N/A	27	N/A	N/A	7.48	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	27	1	1	0.58	Fail
Total Phosphorus (as P) mg/l	2	2.4	N/A	26	N/A	N/A	0.78	Pass
Salinity PSU	N/A	N/A	N/A	4	N/A	N/A	0.32	
E. Coli no./100mls	N/A	N/A	N/A	2	N/A	N/A	25.09	

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)
Faecal coliforms no./100mls	N/A	N/A	N/A	2	N/A	N/A	30.23	
Enterococci (Intestinal) no./100mls	N/A	N/A	N/A	2	N/A	N/A	66.95	
Visual Inspection Descriptive	N/A	N/A	N/A	25	N/A	N/A	N/A	
Alkalinity-total (as CaCO3) mg/l	N/A	N/A	N/A	19	N/A	N/A	137.21	
Conductivity 20 C µS/cm	N/A	N/A	N/A	17	N/A	N/A	1994.01	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	27	N/A	N/A	0.66	

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):

Exceedance in 2 No. COD Samples due to saline Intrusion. Exceedance in ammonia due to equipment breakdown at the WWTP.

Significance of Results:

The WWTP is not compliant with all the ELV,s set in the Wastewater Discharge License.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1300D0040SW001

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
Upstream	E81255 N113045	TW13004117LT1001	No	No	No	Yes	Moderate
Downstream	E79826 N113892	TW13004117LT1002	No	No	No	Yes	Moderate
Downstream	E79796 N113503	TW13004117LT1003	No	No	No	Yes	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 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 - TRALEE WWTP

2.1.4.1 Treatment Efficiency Report - Tralee 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	1081731	172404	84
SS	622077	50095	92
cBOD	392545	22416	94
TP	7977	3852	52
TN	77405	37695	51

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

2.1.4.2 Treatment Capacity Report Summary - Tralee 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.

Tralee WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	19050
DWF to the Treatment Plant (m^3/day)	6350
Current Hydraulic Loading - annual max (m^3/day)	13646

Average Hydraulic loading to the Treatment Plant (m^3/day)	10614
Organic Capacity (PE) - As Constructed	50333
Organic Capacity (PE) - Collected Load (peak week)[Note1]	30884
Organic Capacity (PE) - Remaining	19449
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 - TRALEE 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)
Landfill Leachate (delivered by tanker)	30186	Volume (m3)	0	0.78	No	Yes	No
Domestic /Septic Tank Sludge	2017	Volume (m3)	0	0.05	Yes	Yes	No
Industrial / Commercial Sludge	1986	Volume (m3)	0	0.05	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
497	Blocked Sewer	0	497

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)
Breach of ELV	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	Broken Sewer Pipe	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	No

Uncontrolled release	EO caused by pump failure	1	No	Yes
Spillage	Adverse Weather	1	No	Yes
Uncontrolled release	EO caused by power failure	1	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	6
Number of Incidents reported to the EPA via EDEN in 2019	6
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
SW002	80323.466, 113892.488	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW003	84955.725, 115881.691	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW005	84502.857, 115395.819	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW006	83931.835, 114684.77	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW007	84078.156, 113568.743	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW009	82996.049, 113738.344	Yes	Low	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
SW011	81395.911, 113107.068	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW012	80323.466, 113892.488	Yes	Low	Meeting	Unknown	Unknown	Monitored
TBC	83170.849, 113686.247	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	83211.199, 115238.888	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	83265.761, 113861.677	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	83291.091, 114652.325	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	83419.882, 114445.441	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	83431.57, 113590.2	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	83456.135, 114418.831	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	83617.099, 114220.624	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	83747.926, 113698.742	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	83884.763, 114618.576	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	84037.95, 114834.069	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	84502.857, 115395.819	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	84568.158, 113317.53	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
SW004	84259.36, 115115.413	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW008	84108.553, 113553.917	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW010	81558.769, 113113.075	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	82573.275, 115388.632	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	82734.029, 113813.204	No	Unknown	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	83195.902, 114796.246	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	83301.004, 113612.866	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	83343.004, 115341.851	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	83420.927, 114337.859	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	83483.743, 114614.183	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	83506.423, 115350.259	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	83659.437, 114387.326	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	83852.404, 115348.36	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	83864.17, 114603.344	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	84096.439, 113562.212	No	Unknown	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	84128.224, 116067.501	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	84230.852, 113505.025	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	84502.857, 115395.819	No	Unknown	Meeting	Unknown	Unknown	Not Monitored
TBC	84530.561, 114311.371	No	Unknown	Not Meeting	Unknown	Unknown	Not Monitored
TBC	84733.89, 113229.3	No	Unknown	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
D0040-SIP:01	Upgrade all stormwaters overflow to comply with criteria outlined in the DoECLG document "Procedures and criteria in relation to stormwater overflows" (1995)	C	31/12/2015	Yes	At Planning Stage		Drainage Area Plan Investigation Study to be 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
D0040-IP:61	A second sludge Decanter was installed at the Tralee WWTP	Incident Reduction	Completed	

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	2014	No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2014

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: 22/04/2020

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

			Receiving Waters Designation (Yes/No)					Mean (mg/l)	
Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code	Bathing Water	Drinking Water	FWPM	Shellfish	Current WFD Status	cBOD	o-Phosphate (as P)
Upstream Monitoring Point	E81255 N113045	TW13004117LT1001					Good	1.980	No Data
Downstream Monitoring Point	E79826 N113892	TW13004117LT1002	No	No	No	No	Good	1.510	No Data
Difference								-0.470	
EQS								4.000	0.040
% of EQS								-11.750%	

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code	Bathing Water	Drinking Water	FWPM	Shellfish	Current WFD Status	cBOD	o-Phosphate (as P)
Upstream Monitoring Point	E81255 N113045	TW13004117LT1001					Good	1.980	No Data
Downstream Monitoring Point	E79796 N113503	TW13004117LT1003	No	No	No	No	Good	1.660	No Data
Difference								-0.320	
EQS								4.000	0.040
% of EQS								-8.000%	

Station Name	Name of Receiving Water	Sampling Point Description	EDEN Code	Monitoring Location Easting/Northing	Upstream/ Downstream	Sampling Method	Sample Date	Sample ID No.	Visual Inspection	pH	BOD (mg/l)	Total P (mg/l)	Total N (mg/l)	NH3-N (Saline)	TON (mg/l)	Faecal Coli (mpn/100ml)	E. coli (mpn/100ml)	Enterococci (mpn/100ml)	Temperature (degree C)	Dissolved Oxygen % Saturation	Conductivity µS/cm	Salinity
Tralee WWTP Ambient Monitoring	Lee Estuary	Near to Blennerville windmill	TW13004117LT1001	E81255 N113045	N/A	GRAB	20/03/2019	4927 (19-0149)	Cloudy	7.9	1.4	0.17	1.2	0.06	0.54	3076	2489	>201	12	99.8		
Tralee WWTP Ambient Monitoring	Lee Estuary	Before outfall pipe (Fenit side)	TW13004117LT1002	E79826 N113892	N/A	GRAB	20/03/2019	4928 (19-01429)	Slightly cloudy	7.9	1.8	0.15	9.6	<0.0350	0.33	697	620	134	12.6	103		
Tralee WWTP Ambient Monitoring	Lee Estuary	After outfall pipe (Tralee Side)	TW13004117LT1003	E79796 N113503	N/A	GRAB	20/03/2019	4929 (19-01429)	Slightly cloudy	7.9	1.5	0.24	0.9	<0.0350	0.25	443	288	197	11.8	101		
Tralee WWTP Ambient Monitoring	Lee Estuary	Near to Blennerville windmill	TW13004117LT1001	E81255 N113045	N/A	GRAB	18/04/2019	6066 (19-01745)	clear	8	2.5	<0.04	0.8	<0.035	0.11	241	275	52	14.5	105.9		
Tralee WWTP Ambient Monitoring	Lee Estuary	Before outfall pipe (Fenit side)	TW13004117LT1002	E79826 N113892	N/A	GRAB	18/04/2019	6066 (19-01745)	clear	8.1	2.1	0.05	2.3	<0.035	0.06	20	30	10	14.5	102.5		
Tralee WWTP Ambient Monitoring	Lee Estuary	After outfall pipe (Tralee Side)	TW13004117LT1003	E79796 N113503	N/A	GRAB	18/04/2019	6066 (19-01745)	clear	8.1	2.7	<0.04	0.5	<0.035	0.04	20	10	<1	14.5	105.3		
Tralee WWTP Ambient Monitoring	Lee Estuary	Near to Blennerville windmill	TW13004117LT1001	E81255 N113045	N/A	GRAB	04/06/2019	7479 (19-02196)	clear	8.0	2	0.17	0.7	<0.035	<0.02				15.8	101.4		
Tralee WWTP Ambient Monitoring	Lee Estuary	Before outfall pipe (Fenit side)	TW13004117LT1002	E79826 N113892	N/A	GRAB	04/06/2019	7480 (19-02196)	clear	8.1	1.7	0.04	<0.5	<0.035	<0.02				16.1	102.9		
Tralee WWTP Ambient Monitoring	Lee Estuary	After outfall pipe (Tralee Side)	TW13004117LT1003	E79796 N113503	N/A	GRAB	04/06/2019	7481 (19-02196)	clear	8.1	1.6	0.08	0.6	<0.035	<0.02				15.8	104.2		
Tralee WWTP Ambient Monitoring	Lee Estuary	Near to Blennerville windmill	TW13004117LT1001	E81255 N113045	N/A	GRAB	17/06/2019	8022 (19-02396)	clear	8.1	1.9	0.15	0.7	<0.035	0.05				17.3	103.9		
Tralee WWTP Ambient Monitoring	Lee Estuary	Before outfall pipe (Fenit side)	TW13004117LT1002	E79826 N113892	N/A	GRAB	17/06/2019	8023 (19-02396)	clear	8.1	1.5	0.08	<0.5	<0.035	<0.02				17.4	103.1		
Tralee WWTP Ambient Monitoring	Lee Estuary	After outfall pipe (Tralee Side)	TW13004117LT1003	E79796 N113503	N/A	GRAB	17/06/2019	8024 (19-02396)	clear	8.1	1.2	<0.04	<0.5	<0.035	<0.02				17.5	102.6		
Tralee WWTP Ambient Monitoring	Lee Estuary	Near to Blennerville windmill	TW13004117LT1001	E81255 N113045	N/A	GRAB	03/07/2019	8591 (19-02598)	clear	8.2	2.9	0.12	0.6	<0.035	<0.02				16.7	97.3		
Tralee WWTP Ambient Monitoring	Lee Estuary	Before outfall pipe (Fenit side)	TW13004117LT1002	E79826 N113892	N/A	GRAB	03/07/2019	8592 (19-02598)	clear	8.2	1.1	<0.04	<0.5	<0.035	<0.02				16.5	96.2		
Tralee WWTP Ambient Monitoring	Lee Estuary	After outfall pipe (Tralee Side)	TW13004117LT1003	E79796 N113503	N/A	GRAB	03/07/2019	8593 (19-02598)	clear	8.2	1.1	<0.04	<0.5	<0.035	<0.02				16.8	95.03		
Tralee WWTP Ambient Monitoring	Lee Estuary	Near to Blennerville windmill	TW13004117LT1001	E81255 N113045	N/A	GRAB	01/08/2019	9782 (19-03051)	clear	8.2	2.2	0.09	0.85	0.49	<0.20				20.6	117.7		29.7
Tralee WWTP Ambient Monitoring	Lee Estuary	Before outfall pipe (Fenit side)	TW13004117LT1002	E79826 N113892	N/A	GRAB	01/08/2019	9783 (19-03051)	clear	8.2	1.1	0.08	<0.5	0.51	<0.2				20.9	115		32.3
Tralee WWTP Ambient Monitoring	Lee Estuary	After outfall pipe (Tralee Side)	TW13004117LT1003	E79796 N113503	N/A	GRAB	01/08/2019	9784 (19-03051)	clear	8.2	1.1	0.07	<0.5	0.5	<0.2				19.4	108		32.8
Tralee WWTP Ambient Monitoring	Lee Estuary	Near to Blennerville windmill	TW13004117LT1001	E81255 N113045	N/A	GRAB	26/09/2019	12138(19-03922)	Slightly brown	7.9	2	0.14	2.94	0.11	0.08	15531	1439	146	14.9	102.30		
Tralee WWTP Ambient Monitoring	Lee Estuary	Before outfall pipe (Fenit side)	TW13004117LT1002	E79826 N113892	N/A	GRAB	26/09/2019	12139(19-03922)	Slightly brown	7.9	2.4	0.25	2.94	0.11	0.09	14136	985	122	15.1	101		
Tralee WWTP Ambient Monitoring	Lee Estuary	After outfall pipe (Tralee Side)	TW13004117LT1003	E79796 N113503	N/A	GRAB	26/09/2019	12140(19-03922)	Slightly brown	8.0	2.3	0.17	2.79	0.11	0.09	5794	1076	145	15	100.5		
Tralee WWTP Ambient Monitoring	Lee Estuary	Near to Blennerville windmill	TW13004117LT1001	E81255 N113045	N/A	GRAB	29/10/2019	13357(19-04356)	Slightly cloudy	7.9	1.2	0.14	1.74	0.039	0.2				9.85	96.48		
Tralee WWTP Ambient Monitoring	Lee Estuary	Before outfall pipe (Fenit side)	TW13004117LT1002	E79826 N113892	N/A	GRAB	29/10/2019	13358(19-04356)	Clear	8.0	<1.0	0.05	2.22	<0.035	0.13				10.9	95.5		
Tralee WWTP Ambient Monitoring	Lee Estuary	After outfall pipe (Tralee Side)	TW13004117LT1003	E79796 N113503	N/A	GRAB	29/10/2019	13359(19-04356)	Clear	8.0	<1.0	0.05	2.26	<0.035	0.15				10.9	98.03		
Tralee WWTP Ambient Monitoring	Lee Estuary	Near to Blennerville windmill	TW13004117LT1001	E81255 N113045	N/A	GRAB	27/11/2019	14741(19-04804)	Clear	7.8	1.8	30.5	1.04	0.11	0.35	3873	2851	591	10.8	101.6		
Tralee WWTP Ambient Monitoring	Lee Estuary	Before outfall pipe (Fenit side)	TW13004117LT1002	E79826 N113892	N/A	GRAB	27/11/2019	14742(19-04804)	Clear	7.9	<1.0	0.25	0.73	0.068	0.26	1374	1160	364	11.6	102.1		
Tralee WWTP Ambient Monitoring	Lee Estuary	After outfall pipe (Tralee Side)	TW13004117LT1003	E79796 N113503	N/A	GRAB	27/11/2019	14743(19-04804)	Slightly brown	7.8	1.8	0.33	1.49	0.355	0.82	>24196	>24196	4611	11.2	100.1		
Tralee WWTP Ambient Monitoring	Lee Estuary	Near to Blennerville windmill	TW13004117LT1001	E81255 N113045	N/A	GRAB	13/12/2019	15481(19-05071)	Brown	7.8	1.9	0.26	1.32	0.137	0.6				9.8	99.1		
Tralee WWTP Ambient Monitoring	Lee Estuary	Before outfall pipe (Fenit side)	TW13004117LT1002	E79826 N113892	N/A	GRAB	13/12/2019	15482(19-05071)	Brown	7.9	1.4	0.04	1.26	0.045	0.31				9.9	98.4		
Tralee WWTP Ambient Monitoring	Lee Estuary	After outfall pipe (Tralee Side)	TW13004117LT1003	E79796 N113503	N/A	GRAB	13/12/2019	15483(19-05071)	Brown	7.9	2.3	0.04	1.14	0.051	0.31				10	98.8		