Annual Environmental Report

2019

Fenit

D0284-01

CONTENTS

7 APPENDIX

7.1 AMBIENT MONITORING SUMMARY

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0284-01, Fenit, 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.

1.2 TREATMENT SUMMARY

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

- Fenit WWTP with a Plant Capacity PE of 500, the treatment type is 1 - Primary 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
TPEFF1300D0284SW001	Fenit WWTP	Treated	Non-Compliant	BOD, 5 days with Inhibition (Carbonaceous BOD) 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 FENIT WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - FENIT WWTP

A summary of influent monitoring for the treatment plant is presented below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

Parameters	Number of Samples	Annual Max	Annual Mean
Total Phosphorus (as P) mg/l	6	6.2	3.06
Suspended Solids mg/l	6	352	102.36
Total Nitrogen mg/l	6	50	23.24
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	164	68.95
COD-Cr mg/l	6	454	211.26
Hydraulic Capacity	N/A	925	444

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 greater 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’.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF1300D0284SW001

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)
Suspended Solids mg/l	N/A	N/A	50	6	N/A	N/A	29.23	Pass
Enterococci (Intestinal) no./100mls	N/A	N/A	N/A	5	N/A	N/A	N/A	
Salinity PSU	N/A	N/A	N/A	1	N/A	N/A	1.4	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	5	N/A	N/A	0.05	
E. Coli no./100mls	N/A	N/A	N/A	5	N/A	N/A	N/A	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	N/A	N/A	20	6	N/A	N/A	44.45	Fail
COD-Cr mg/l	N/A	N/A	N/A	6	N/A	N/A	104.77	
Visual Inspection Descriptive	N/A	N/A	N/A	6	N/A	N/A	N/A	
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	5	N/A	N/A	20.15	

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 Phosphorus (as P) mg/l	N/A	N/A	N/A	6	N/A	N/A	1.89	
Faecal coliforms no./100mls	N/A	N/A	N/A	5	N/A	N/A	N/A	
pH pH units	N/A	N/A	N/A	6	N/A	N/A	7.4	
Total Nitrogen mg/l	N/A	N/A	N/A	6	N/A	N/A	19.64	

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):

WWTP operating above capacity causing an exceedance in BOD.

Significance of Results:

The WWTP is not compliant with the ELVs set in the WWDL.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1300D0284SW001

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
There is no Ambient data included in the AER.							

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 - FENIT WWTP

2.1.4.1 Treatment Efficiency Report - Fenit 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)
SS	16595	4739	71
TN	3767	3185	15
cBOD	11179	7207	36

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
COD	34250	16986	50
TP	496	306	38

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

2.1.4.2 Treatment Capacity Report Summary - Fenit 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.

Fenit WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	339
DWF to the Treatment Plant (m^3/day)	113
Current Hydraulic Loading - annual max (m^3/day)	925
Average Hydraulic loading to the Treatment Plant (m^3/day)	444
Organic Capacity (PE) - As Constructed	500
Organic Capacity (PE) - Collected Load (peak week)[Note1]	771
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

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 - FENIT 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
There were no relevant environmental complaints in 2019.			

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)
Specified % Reduction Value not achieved	WWTP operating above capacity	1	Yes	No

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
SW002	73025, 116411	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	73922.69, 115782.38	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	73922, 115789	No	Low	Not yet Assessed	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?	N/A
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes

SWO Summary	
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
D0284-SIP:01	Subject to Condition 5.6 and 5.7, provide secondary treatment and UV disinfection, or other appropriate disinfection, of the discharge.	C	22/12/2015	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis
D0284-SIP:02	Unless secondary treatment is required under Condition 5.6 and 5.7, provide sufficient capacity at the current WWTP to accommodate the hydraulic	C	22/12/2015	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with

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
	and organic load from the Fenit agglomeration.						the licence condition on a prioritised basis

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
Priority Substances Assessment	Yes	2016	No	
Shellfish Impact Assessment	Yes		No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2016

5.2 SHELLFISH IMPACT ASSESSMENT

The Shellfish Impact Assessment Report has been included in the AER

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

Waterbody Code - IE_SH_040_0000	Waterbody Type - Coastal	Monitoring Station Code - CW13004114OT1001		
SampleDate	SampleMethod	ParameterName	Parameter Unit Name	Result
11/02/2019 12:03	TRaC Surface	Ammonia-Total (as N)	milligrams per litre	0.031
11/02/2019 12:03	TRaC Bottom	Ammonia-Total (as N)	milligrams per litre	0.026
24/06/2019 14:45	TRaC Surface Return	Ammonia-Total (as N)	milligrams per litre	0.068
24/06/2019 14:45	TRaC Bottom Return	Ammonia-Total (as N)	milligrams per litre	0.071
12/08/2019 11:11	TRaC Surface	Ammonia-Total (as N)	milligrams per litre	0.021
12/08/2019 11:14	TRaC Bottom	Ammonia-Total (as N)	milligrams per litre	0.017
11/02/2019 12:03	TRaC Surface	Chlorophyll	Micrognammes per Litre	3.5
11/02/2019 12:03	TRaC Bottom	Chlorophyll	Micrognammes per Litre	4.7
11/02/2019 12:03	TRaC Surface	Depth	Metres	0.4
11/02/2019 12:03	TRaC Bottom	Depth	Metres	7.3
24/06/2019 14:45	TRaC Surface Return	Depth	Metres	0.3
24/06/2019 14:45	TRaC Bottom Return	Depth	Metres	8
12/08/2019 11:11	TRaC Surface	Depth	Metres	0.4
12/08/2019 11:14	TRaC Bottom	Depth	Metres	6.4
11/02/2019 12:03	TRaC Bottom	Dissolved Oxygen	Percentage Saturation	94
11/02/2019 12:03	TRaC Surface	Dissolved Oxygen	Percentage Saturation	96
24/06/2019 14:45	TRaC Surface Return	Dissolved Oxygen	Percentage Saturation	103
24/06/2019 14:45	TRaC Bottom Return	Dissolved Oxygen	Percentage Saturation	103
12/08/2019 11:11	TRaC Surface	Dissolved Oxygen	Percentage Saturation	96
12/08/2019 11:14	TRaC Bottom	Dissolved Oxygen	Percentage Saturation	92
11/02/2019 12:03	TRaC Bottom	ortho-Phosphate (as P) - unspecified	milligrams per litre	0.023
11/02/2019 12:03	TRaC Surface	ortho-Phosphate (as P) - unspecified	milligrams per litre	0.021
12/08/2019 11:11	TRaC Surface	ortho-Phosphate (as P) - unspecified	milligrams per litre	0.019
12/08/2019 11:14	TRaC Bottom	ortho-Phosphate (as P) - unspecified	milligrams per litre	0.012
11/02/2019 12:03	TRaC Surface	pH	pH Units	8
11/02/2019 12:03	TRaC Bottom	pH	pH Units	8
24/06/2019 14:45	TRaC Surface Return	pH	pH Units	8.1
24/06/2019 14:45	TRaC Bottom Return	pH	pH Units	8.2
12/08/2019 11:11	TRaC Surface	pH	pH Units	8.1
12/08/2019 11:14	TRaC Bottom	pH	pH Units	8.2
11/02/2019 12:03	TRaC Bottom	Salinity	Practical salinity units	30.7
11/02/2019 12:03	TRaC Surface	Salinity	Practical salinity units	27.9
12/08/2019 11:11	TRaC Surface	Salinity	Practical salinity units	29
12/08/2019 11:14	TRaC Bottom	Salinity	Practical salinity units	34.2
11/02/2019 12:03	TRaC Surface	Salinity(Lab)	0/oo	29.5
11/02/2019 12:03	TRaC Bottom	Salinity(Lab)	0/oo	30.8
24/06/2019 14:45	TRaC Surface Return	Salinity(Lab)	0/oo	34.5
24/06/2019 14:45	TRaC Bottom Return	Salinity(Lab)	0/oo	34.9
12/08/2019 11:11	TRaC Surface	Salinity(Lab)	0/oo	28.9
12/08/2019 11:14	TRaC Bottom	Salinity(Lab)	0/oo	33.1
11/02/2019 12:03	TRaC Bottom	Silica (as SiO2)	milligrams per litre	0.24
11/02/2019 12:03	TRaC Surface	Silica (as SiO2)	milligrams per litre	0.3
11/02/2019 12:03	TRaC Surface	StationDepth	Metres	7.5
11/02/2019 12:03	TRaC Bottom	StationDepth	Metres	7.5
24/06/2019 14:45	TRaC Surface Return	StationDepth	Metres	9.2
24/06/2019 14:45	TRaC Bottom Return	StationDepth	Metres	9.2
12/08/2019 11:11	TRaC Surface	StationDepth	Metres	6.4
12/08/2019 11:14	TRaC Bottom	StationDepth	Metres	6.4
11/02/2019 12:03	TRaC Bottom	Temperature	Degrees centrigrade	7.2
11/02/2019 12:03	TRaC Surface	Temperature	Degrees centrigrade	6.8
24/06/2019 14:45	TRaC Surface Return	Temperature	Degrees centrigrade	14
24/06/2019 14:45	TRaC Bottom Return	Temperature	Degrees centrigrade	14
12/08/2019 11:11	TRaC Surface	Temperature	Degrees centrigrade	16.9
12/08/2019 11:14	TRaC Bottom	Temperature	Degrees centrigrade	17.2
11/02/2019 12:03	TRaC Bottom	Total Oxidised Nitrogen (as N)	milligrams per litre	0.19
11/02/2019 12:03	TRaC Surface	Total Oxidised Nitrogen (as N)	milligrams per litre	0.22
12/08/2019 11:11	TRaC Surface	Total Oxidised Nitrogen (as N)	milligrams per litre	0.017
12/08/2019 11:14	TRaC Bottom	Total Oxidised Nitrogen (as N)	milligrams per litre	0.01
11/02/2019 12:03	TRaC Bottom	Transparency	Metres	0.5
11/02/2019 12:03	TRaC Surface	Transparency	Metres	0.5
24/06/2019 14:45	TRaC Bottom Return	Transparency	Metres	2.3
24/06/2019 14:45	TRaC Surface Return	Transparency	Metres	2.3
12/08/2019 11:11	TRaC Surface	Transparency	Metres	1.1
12/08/2019 11:14	TRaC Bottom	Transparency	Metres	1.1