Annual Environmental Report

2022

Castletownbere

D0297-01

D0297-02

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2022 AER

A new wastewater discharge licence was issued to Castletownbere, in Cork Longford on the 25/10/2022, D0297-02. This Annual Environmental Report has been prepared for both D0297-01 (January – October) and D0297-02 (November – December), in accordance with the requirements of the wastewater discharge licences 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.

Uisce Éireann completed works on the Castletownbere Sewerage Scheme in 2022. The scheme included a 100m long marine outfall pipeline, to safely discharge treated wastewater to the sea near Doctor's Rock, to the south of Castletownbere. A total of 750m of new sewer pipelines and 1,700m of rising mains were provided to transport untreated wastewater to the proposed new wastewater treatment plant, as well as four new wastewater pumping stations across Castletownbere.

A new Wastewater Discharge Licence was issued in October 2022 (D0297-02).

1.2 TREATMENT SUMMARY

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

- CASTLETOWNBERE WWTP with a Plant Capacity PE of 2168, the treatment type is 1 - Primary treatment.
- Brandyhall Bridge Septic Tank – No longer in operation.
- Cametringane Septic Tank – No longer in operation.
- Castletownbere Hospital Septic Tank – No longer in operation.
- Foildarrig Housing Septic Tank – No longer in operation.

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.

D0297-01

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF0500D0297SW001	Brandyhall Bridge Septic Tank	Treated	Non-Compliant	BOD, COD-CR, Suspended Solids
TPEFF0500D0297SW002	Cametringane Septic Tank	Treated	N/A	N/A
TPEFF0500D0297SW003	Castletownbere Hospital Septic Tank	Treated	N/A	N/A
TPEFF0500D0297SW004	Foildarrig Housing Septic Tank	Treated	N/A	N/A

D0297-02

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF3900D0297SW007	CASTLETOWNBERE WWTP	Treated	Non-Compliant	Suspended Solids

1.4 LICENCE SPECIFIC REPORTING

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

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 CASTLETOWNBERE WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - CASTLETOWNBERE 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 Nitrogen mg/l	8	15	5.70
BOD, 5 days with Inhibition (Carbonaceo mg/l	11	369	61
COD-Cr mg/l	11	1158	301
pH pH units	3	7.09	6.99
Total Phosphorus (as P) mg/l	8	1.51	0.706
Suspended Solids mg/l	11	146	71
Hydraulic Capacity	N/A	2336	974

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

BRANDYHALL BRIDGE SEPTIC TANK SW001

D0297-01 1st January – 24th October 2022

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Dissolved Inorganic Nitrogen (as N) mg/l	35	42	N/A	6	N/A	0	5.42	Pass
pH units	6-9	N/A	N/A	8	N/A	N/A	7.145	Pass
BOD, 5 days with Inhibition (Carbonaceo mg/l	25	50	N/A	8	N/A	3	31.79	Fail
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	6	N/A	N/A	0.82	
Total Nitrogen mg/l	N/A	N/A	N/A	5	N/A	N/A	6.47	
Ammonia-Total (as N) mg/l	35	42	N/A	7	0	0	5.24	Pass

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
ortho-Phosphate (as P) - unspecified mg/l	10	12	N/A	6	0	0	0.478	Pass
COD-Cr mg/l	125	250	N/A	8	3	3	314.3	Fail
Total Oxidised Nitrogen (as N) mg/l	35	42	N/A	5	0	0	0.06	Pass
Suspended Solids mg/l	35	87.5	N/A	8	4	0	40.63	Fail

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 – For pH the WWDA specifies a range of pH 6 - 9

Cause of Exceedance(s):

The agglomeration was not served by a WWTP. A new WWTP began operating in October 2022.

Significance of Results:

This licence is not compliant with the ELV's set in the Wastewater Discharge Licence.

CASTLETOWNBERE WWTP - SW007

D0297-02 24th October – 31st December 2022

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Dissolved Inorganic Nitrogen (as N) mg/l	54	64.8	N/A	3	0	0	1.34	Pass
Dissolved Inorganic Nitrogen (as N) kg/day	26.35	N/A	N/A	3	0	0	N/A	Pass
pH units	9	9	N/A	3	N/A	N/A	7.43	Pass
BOD, 5 days with Inhibition (Carbonaceo mg/l	N/A	N/A	20	3	0	0	10.73	Pass
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	3	N/A	N/A	0.39	
Total Nitrogen mg/l	N/A	N/A	N/A	3	N/A	N/A	3.14	

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	3	N/A	N/A	0.61	
Nitrate (as N) mg/l	N/A	N/A	N/A	3	N/A	N/A	1.07	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	3	N/A	N/A	0.188	
COD-Cr mg/l	N/A	N/A	N/A	3	N/A	N/A	59	
Nitrite (as N) mg/l	N/A	N/A	N/A	3	N/A	N/A	0.022	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	3	N/A	N/A	0.74	
Suspended Solids mg/l	N/A	N/A	50	3	1	0	12	Fail

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 – For pH the WWDA specifies a range of pH 6 - 9

Cause of Exceedance(s):

See Section 3.2.1 for information on this exceedance.

Significance of Results:

This WWTP is not compliant with the ELV's set in the Wastewater Discharge Licence.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE

A summary of monitoring from ambient monitoring points associated with the wastewater discharge is provided in the sections below. For discharges to rivers upstream (U/S) and downstream (D/S) location data is provided. For other ambient points in lakes, coastal or transitional waters, monitoring data from the most appropriate monitoring station is selected.

The table below provides details of ambient monitoring locations and details of any designations as sensitive areas.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Ecological Status
Downstream	67473, 44811	CW05003196BV1009	No	No	No	Yes	High

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 coastal/transitional 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 WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

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.

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

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - CASTLETOWNBERE WWTP

2.1.4.1 Treatment Efficiency Report - CASTLETOWNBERE 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	29557	7653	74
cBOD	25434	7653	70
TN	2715	2036	25
TP	336	268	20
COD	124932	20281	84

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

2.1.4.2 Treatment Capacity Report Summary - CASTLETOWNBERE 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.

CASTLETOWNBERE WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	N/A
DWF to the Treatment Plant (m^3/day)	N/A
Current Hydraulic Loading - annual max (m^3/day)	2336.5

CASTLETOWNBERE WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	973.8
Organic Capacity (PE) - As Constructed	2168
Organic Capacity (PE) - Collected Load (peak week)[Note1]	1175
Organic Capacity (PE) - Remaining	993
Will the capacity be exceeded in the next three years? (Yes/No)	No

Note[1]: 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 - CASTLETOWNBERE 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.							

2.2 TREATED DISCHARGE OTHER SOURCES:

CAMETRINGANE SEPTIC TANK – SW002

CASTLETOWNBERE HOSPITAL SEPTIC TANK – SW003

FOILDARRIG HOUSING SEPTIC TANK – SW004

2.2.1 INFLUENT MONITORING SUMMARY

A summary of influent monitoring for the treatment plants 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
No sampling took place from these sources. A new WWTP is now in operation in this agglomeration. Monitoring is only undertaken at the new Castletownbere WWTP.			

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:

Not applicable

2.2.2 EFFLUENT MONITORING SUMMARY

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
No sampling took place from these sources. A new WWTP is now in operation in this agglomeration. Monitoring is only undertaken at the new Castletownbere WWTP.								

Cause of Exceedance(s):

Not applicable

Significance of Results:

Not applicable

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2.2.3 AMBIENT MONITORING SUMMARY FOR THE DISCHARGE

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	Coastal Monitoring Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Ecological Status
A new WWTP is now in operation in this agglomeration. See Sections 2.1.3 and 7.1 for Ambient monitoring results.							

Significance of Results:

See Appendix for Ambient Monitoring Results data.

2.2.4 OPERATIONAL PERFORMANCE SUMMARY

2.2.4.1 Treatment Efficiency Report

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)
No sampling took place from these sources. A new WWTP is now in operation in this agglomeration. Monitoring is only undertaken at the new Castletownbere WWTP.			

2.2.4.2 Treatment Capacity Report Summary

Treatment capacity is an assessment of the hydraulic (flow) and organic (the amounts of pollutants) load a treatment plant is designed to treat versus the current loading of that plant.

Treatment Information	Cametringane Septic Tank	Castletownbere Hospital Septic Tank	Foildarrig Septic Tank
Peak Hydraulic Capacity (m^3/day) - As Constructed	1551		
DWF to the Treatment Plant (m^3/day)	517		
Current Hydraulic Loading - annual max (m^3/day)	N/A	N/A	N/A
Average Hydraulic loading to the Treatment Plant (m^3/day)	N/A	N/A	N/A
Organic Capacity (PE) - As Constructed	2300	442	115
Organic Capacity (PE) - Collected Load (peak week)	1559	3119	N/A
Organic Capacity (PE) - Remaining	N/A	N/A	N/A
Will the capacity be exceeded in the next three years? (Yes/No)	N/A	N/A	N/A

Note: The aggmoleration is now served by the new Castletownbere WWTP.

2.2.5 SLUDGE / OTHER INPUTS

'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 related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2022.			

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 Uisce Éireann 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	The influent concentrations for the parameter that failed (Suspended Solids) are extremely low. When influent concentrations are extremely low it can be difficult to reduce the concentrations by the required amount.	1	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2022	1
Number of Incidents reported to the EPA via EDEN in 2022	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 (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2022 (No. of events)	Total volume discharged in 2022 (m3)	Monitoring Status
There are no Storm Water Overflows in this Agglomeration.							

Any TBC SWO(s) were identified as part of the on-going National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much sewage was discharged via monitored 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?	N/A
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	N/A

4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS.

4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

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

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0297-SIP.01	Discontinue Primary Discharge Point SW000	C	25/10/2022	No	Works Completed		
D0297-SIP.02	Convert SW002 to Storm Water Overflow	C	25/10/2022	No	Works Completed		
D0297-SIP.03	Convert SW003 to Storm Water Overflow	C	25/10/2022	No	Works Completed		
D0297-SIP.04	Convert SW004 to Storm Water Overflow	C	25/10/2022	No	Works Completed		
D0297-SIP.05	Discontinue Secondary Discharge Point GW005	C	25/10/2022	No	Works Completed		

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
D0297-SIP.06	Discontinue Secondary Discharge Point GW006	C	25/10/2022	No	Works Completed		

A summary of the status of any other improvements identified by under Condition 5 assessments- is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
No additional improvements planned at this time.				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

N/A

5 LICENCE SPECIFIC REPORTS

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

Licence Specific Report	Required by licence	Year included in AER	Included in this AER
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?	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	N/A

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

Signed: Date: 12/07/2023

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

Eleanor Roche

Acting Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

Ambeint Monitoring Report Summary Data

		Designations				
Ambient monitoring point/Coastal Monitoring Code	Irish Grid Reference	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
CW05003196BV1001	68110, 45852	No	No	No	Yes	High
CW05003196BV1002	67933, 44984	No	No	No	Yes	High
CW05003196BV1009	67473, 44811	No	No	No	Yes	High

Ambient Monitoring Results Summary

Monitoring point	Date	Ammonia-Total (as N)	BOD - 5 days (Total)	Dissolved Oxygen	ortho-Phosphate (as P) - unspecified	Total Oxidised Nitrogen (as N)
CW05003196BV1001	02/06/2021	0.044	<1	102	<0.005	0.069
CW05003196BV1001	08/09/2021	0.25	3.7	108	0.041	<0.01
CW05003196BV1001	03/03/2021	0.021	1.1	98	0.018	<0.01
CW05003196BV1002	03/03/2021	0.02	<1	108	0.0066	0.07
CW05003196BV1002	08/09/2021	0.03	1.2	99	0.014	<0.01
CW05003196BV1002	02/06/2021	0.033	<1	99	<0.005	<0.01
CW05003196BV1009	18/05/2022	<0.035	1.6	101.2	<0.01	<0.02
CW05003196BV1009	31/08/2022	<0.035	4.4	110.8	0.01	<0.02