Annual Environmental Report

2022

Granard

D0187-01

D0187-02

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2022 AER

A new wastewater discharge licence was issued to Granard, in Longford on the 28/10/2022, D0187-02. This Annual Environmental Report has been prepared for both D0187-01 (January – October) and D0187-02 (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.

There were no capital works, significant changes or operational changes undertaken in 2022.

A new Wastewater Discharge Licence was issued in October 2022 (D0187-02).

1.2 TREATMENT SUMMARY

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

- Granard WWTP with a Plant Capacity PE of 3200, 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.

WWDL	Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
D0187-01 **January – October**	TPEFF2000D0187SW001	Granard WWTP	Treated	Compliant	N/A
D0187-02 **November - December**	TPEFF2000D0187SW001	Granard WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l Ammonia – kg/d cBOD – kg/d

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 GRANARD WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - GRANARD 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
pH pH units	12	7.66	7.32
Suspended Solids mg/l	12	7720	696
Ammonia-Total (as N) mg/l	12	32	12
COD-Cr mg/l	12	6450	946
BOD, 5 days with Inhibition (Carbonaceo mg/l	12	2620	416
ortho-Phosphate (as P) - unspecified mg/l	12	8.33	3.25
Total Nitrogen mg/l	12	133	36
Total Phosphorus (as P) mg/l	12	86	10
Hydraulic Capacity	N/A	2771	1072

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'.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF2000D0187SW001

D0187-01 January – 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)
COD-Cr mg/l	125	250	N/A	10	0	0	13	Pass
Suspended Solids mg/l	35	87.5	N/A	11	0	0	5.68	Pass
pH pH units	6 - 9	6 - 9	N/A	10	0	0	7.34	Pass
BOD, 5 days with Inhibition (Carbonaceo mg/l	25	50	N/A	10	0	0	0.73	Pass
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	11	N/A	N/A	0.12	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	11	N/A	N/A	0.042	

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)
Enterococci (Intestinal) MPN/100ml	N/A	N/A	N/A	3	N/A	N/A	1793	
Faecal coliforms MPN/100ml	N/A	N/A	N/A	3	N/A	N/A	3607	
E. Coli MPN/100ml	N/A	N/A	N/A	3	N/A	N/A	11905	
Total Nitrogen mg/l	N/A	N/A	N/A	11	N/A	N/A	10.13	
Temperature °C	N/A	N/A	N/A	1	N/A	N/A	15.7	
Dissolved Oxygen mg/l	N/A	N/A	N/A	1	N/A	N/A	80.1	
Conductivity @20°C µS/cm	N/A	N/A	N/A	10	N/A	N/A	658.9	
Visual Inspection Descriptive	N/A	N/A	N/A	12	N/A	N/A		
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	10	N/A	N/A	0.161	

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):

N/A

Significance of Results:

The WWTP was compliant with the ELVs set in the Wastewater Discharge Licence D0187-01 from January – October 2022. The impact on receiving waters is assessed further in Section 2.

D0187-02

November - December

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)
COD-Cr mg/l	125	250	N/A	2	0	0	59	Pass
Suspended Solids mg/l	35	87.5	N/A	2	0	0	2.65	Pass
pH pH units	6 - 9	6 - 9	N/A	2	0	0	7.7	Pass
BOD, 5 days with Inhibition (Carbonaceo mg/l	4	8	N/A	2	0	0	1.75	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)
BOD, 5 days with Inhibition (Carbonaceo Kg/d	1.91	3.82	N/A	2	1	1	4.51	Fail
Ammonia-Total (as N) mg/l	0.2	0.4	N/A	2	1	1	0.321	Fail
ortho-Phosphate (as P) - unspecified mg/l	0.15	0.3	N/A	2	0	0	0.05	Pass
ortho-Phosphate (as P) - unspecified kg/d	0.07	0.14	N/A	2	1	1	0.109	Fail
Total Nitrogen mg/l	N/A	N/A	N/A	2	N/A	N/A	7.45	
Conductivity @20°C µS/cm	N/A	N/A	N/A	2	N/A	N/A	592	
Visual Inspection Descriptive	N/A	N/A	N/A	2	N/A	N/A		

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)
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	2	N/A	N/A	0.16	

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):

Inadequate Operational Procedure/Training

Significance of Results:

The WWTP was non compliant with the ELVs set in the Wastewater Discharge Licence D0187-02 from November - December 2022. The impact on receiving waters is assessed further in Section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF2000D0187SW001

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	232842, 279341	RS26R040100	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 non compliant with the ELV's set in the wastewater discharge licence D0187-02 for the following: Ammonia-Total (as N) mg/l, BOD, 5 days with Inhibition (Carbonaceous) kg/d and ortho-Phosphate (as P) – unspecified kg/d.

The ambient monitoring results are over the EQS for Ammonia and Ortho-Phosphate

It is not known if the discharge from the wastewater treatment plant is having an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - GRANARD WWTP

2.1.4.1 Treatment Efficiency Report - Granard 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	393421	13621	97
cBOD	172895	535	100
TP	4349	61	99
SS	289388	1807	99

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
TN	15082	3589	76

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

2.1.4.2 Treatment Capacity Report Summary - Granard 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.

Granard WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	2246
DWF to the Treatment Plant (m^3/day)	749
Current Hydraulic Loading - annual max (m^3/day)	2771
Average Hydraulic loading to the Treatment Plant (m^3/day)	1072
Organic Capacity (PE) - As Constructed	3200
Organic Capacity (PE) - Collected Load (peak week)[Note1]	1578
Organic Capacity (PE) - Remaining	1622
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 - GRANARD 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 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)
Abatement Equipment offline	Plant or equipment maintenance at WWTP	1	No	Yes
Breach of ELV	Inadequate Operational Procedures / Training	1	No	No
Breach of ELV	Inadequate Operational Procedures / Training	1	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2022	3
Number of Incidents reported to the EPA via EDEN in 2022	3
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 2021 (No. of events)	Total volume discharged in 2021 (m^3)	Monitoring Status
SW002	233285, 279500	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW003	233285, 279500	Yes	Low	Meeting	Unknown	Unknown	Not Monitored

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?	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 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
D0187-SIP.01	SW003 to be assessed and brought into compliance with DoECLG criteria	C	25/10/2022	No	Work ongoing on-site		SW003 is being reassessed based on updated survey data. There is an ongoing WWTP upgrade project for Granard that will accommodate necessary upgrades to SW003 based on the outcome of the updated SWO assessment. Flow monitoring will be undertaken to establish compliance of SW003. Assessment/monitoring to be completed Q1 2024.

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: 07/06/2023

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

Granard 2022 Ambient Monitoring Summary

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	River Station Code	Receiving Waters Designation (Yes/No)			
			Bathing Water	Drinking Water	FWPM	Shellfish
Upstream Monitoring Point	N/A	N/A				
Downstream Monitoring Point	232842, 279341	RS26R040100	No	No	No	No

Note: Access issues to land preventing LA from getting Upstream samples.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD	o-Phosphate (as P)	Ammonia (as N)
Downstream Monitoring Point	Poor	0.960	0.039	0.194
EQS		1.500	0.035	0.065

Granard 2022 Ambient Monitoring Data

Sample Date	pH pH units	BOD mg/l	Suspended solids mg/l	Total Nitrogen as N mg/l	Total Ammonia as N mg/l	Ortho-Phosphate as P mg/l	DO mg/l	DO % sat	Faecal Coliforms cfu	E. coli cfu	Intestinal enterococci cfu
12/01/2022	7.37	<1	6	3.3	0.045	0.025	7.63	72.9			
09/02/2022	7.41	<1	<2.5	4.2	0.071	0.032	9.28	91.3			
09/03/2022	7.59	<1	3	3.9	0.128	0.035	8.3	81.3	727	152	871
13/04/2022	7.43	<1	<2.5	5.1	0.043	0.013	9.58	95.6	1621	1212	1723
11/05/2022	7.23	<1	3	4.6	0.237	0.014	8.06	76.4	43	31	49
09/06/2022	7.24	1	<2.5	2.3	0.074	0.016	7.01	65.2			
13/07/2022	7.2	<1	3	2	0.747	0.073	7.54	83.3	63	10	85
14/09/2022	7.52	<1	3	1.3	0.394	0.067	7.29	79.6			
13/10/2022	7.5	<1	<2.5	3.2	0.129	0.043	8.27	81.5			
09/11/2022	7.34	2.7	4	2.6	0.125	0.066	7.39	79.8			
07/12/2022	7.13	1.20	<2.5	3.1	0.139	0.049	9.95	83.9			
Mean	**7.36**	**0.960**	**2.80**	**3.236**	**0.194**	**0.039**	**8.21**	**80.98**	**614**	**351**	**682**
95%ile	**7.56**	**1.950**	**5.00**	**4.850**	**0.571**	**0.070**	**9.77**	**93.45**	**1487**	**1053**	**1595**

Note: Where the concentration in the result is less than the limit of detection (LOD), a value of LOD/sqrt(2) was used in calculating the mean and 95%ile concentrations.