Annual Environmental Report

2022

Mountbellew

D0219-01

CONTENTS

7.1 Priority Substances Assessment

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2022 AER

This Annual Environmental Report has been prepared for D0219-01, Mountbellew, in Galway 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)

- Mountbellew WWTP with a Plant Capacity PE of 700, 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
TPEFF1200D0219SW001	Mountbellew WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l COD-Cr mg/l ortho-Phosphate (as P) - unspecified mg/l Suspended Solids mg/l

1.4 LICENCE SPECIFIC REPORTING

Assessment / Report
Priority Substances Assessment

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 MOUNTBELLEW WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - MOUNTBELLEW 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	6	1155	524
Suspended Solids mg/l	6	485	224
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	741	281
Hydraulic Capacity	N/A	N/A	N/A

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’.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF1200D0219SW001

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	7	2	N/A	103	Fail
Suspended Solids mg/l	35	87.5	N/A	7	2	N/A	34	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	7	4	1	31	Fail
pH pH units	9	9	N/A	7	N/A	N/A	7.37	Pass
Ammonia-Total (as N) mg/l	1	2	N/A	7	7	7	20	Fail
ortho-Phosphate (as P) - unspecified mg/l	0.8	0.96	N/A	7	7	7	3.36	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):

Refer to Incident Section of the Report

Significance of Results:

The WWTP is non complaint with the ELV's set in the Wastewater Discharge License. The impact on receiving waters is assessed further in Section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1200D0219SW001

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
Upstream	166714, 246781	RS26C030100	No	No	No	No	Moderate
Downstream	167273, 247619	RS26C030200	No	No	No	No	Poor

The table below provides a summary of monitoring results for designated ambient monitoring points. The upstream and downstream annual mean values are shown (mg/l), and the difference between both monitoring stations is given as a percentage of the Environmental Quality Standard (EQS) where relevant.

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
BOD - 5 days (Total) mg/l	RS26C030100	1.52	RS26C030200	2.40	1.50	58.6
Ammonia-Total (as N) mg/l	RS26C030100	0.055	RS26C030200	0.082	0.065	41

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
ortho-Phosphate (as P) - unspecified mg/l	RS26C030100	0.035	RS26C030200	0.048	0.035	35
pH pH units	RS26C030100	7.44	RS26C030200	7.66	N/A	
Suspended Solids mg/l	RS26C030100	3.83	RS26C030200	5.52	N/A	
Temperature °C	RS26C030100	13	RS26C030200	12	N/A	

Significance of Results:

The ambient monitoring results do not 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 ambient monitoring results do not meet the required EQS at the upstream and the downstream monitoring locations. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

Based on ambient monitoring results a deterioration in Ammonia-Total (as N), BOD-5days Total, ortho-Phosphate, concentrations downstream of the effluent discharge is noted.

A deterioration in water quality has been identified, however it is not known if it is or is not caused by the WWTP.

Other causes of deterioration in water quality in the area are: Unknown

The discharge from the wastewater treatment plant does have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - MOUNTBELLEW WWTP

2.1.4.1 Treatment Efficiency Report - Mountbellew 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	19412	2928	85
TN	N/A	N/A	N/A
TP	N/A	N/A	N/A
COD	45338	8900	80
cBOD	24338	2657	89

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

2.1.4.2 Treatment Capacity Report Summary - Mountbellew 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.

Mountbellew WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	420
DWF to the Treatment Plant (m^3/day)	140
Current Hydraulic Loading - annual max (m^3/day)	N/A

Mountbellew WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	N/A
Organic Capacity (PE) - As Constructed	700
Organic Capacity (PE) - Collected Load (peak week)[Note1]	1072
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 - MOUNTBELLEW 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)
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	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
TBC	166912,247383	No	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW002	166909,247386	Yes	Low Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	166920,247392	No	Low Significance	Not Meeting Criteria	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?	No
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
D0219-SIP:01	Improvement works including nutrient reduction to ensure compliance with the emission limit values as specified in Schedule A: Discharges and Discharge Monitoring.	C	31/12/2019	Yes	At Planning Stage		
D0219-SIP:02	Improvement works to ensure compliance with Condition 1.7	C	31/12/2019	Yes	At Planning Stage		

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

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 Tables 4.2.1 and 4.2.2.

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
Priority Substances Assessment	Yes	2016	Yes

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?	N/A
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	N/A
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	Yes

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

Signed: Date: 03/07/2023

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 - Priority Substances Assessment

Certificate of Analysis

Customer:	Irish Water	**Site/Project:**	Investigative
Local Authority:	Galway County Council	**Date Received:**	24/05/2022
		Condition of Sample(s):	Satisfactory
Customer Contact:	David O Connell	**Date Analysed:**	24/05/2022 - 27/10/2022
Customer PO		**Issue Date:**	25/07/2022
Quote No.	22P-034	**BATCH NUMBER:**	**22-19356**

Conor Murphy

Conor Murphy
Operations Manager

Index to symbols used:

*	Analysis is not INAB/UKAS accredited
**	Adapted from Standard Methods for the Examination of Water and Wastewater.
***	S.I. No. 122 of 2014 - European Union (Drinking Water) Regulations 2014 & 2017.
(F)	Analysis carried out at our Farranfore Laboratory.
(D)	Analysis carried out at our Dunrine Laboratory.
LOD	Parameter Limit of Quantification

Notes

Note A	The water should not be aggressive.
Note C	Acceptable to customers and no abnormal change.
Note D	In the case of surface water treatment, a parametric value not exceeding 1 NTU in the water ex treatment works must be strived for.
Note E	Irish water parametric limit for TVC is <100 cfu/mL.
Note F	Fluoridated supplies 0.8 mg/L; Natural supplies 1.5 mg/L.
Note 6	Subcontracted Parameter.

- **The results relate only to the items tested.**
- **Opinions and interpretations expressed herein are outside the scope of INAB accreditation.**
- **The analysis report shall not be reproduced except in full without written approval of the laboratory.**
- **Sampling is outside the scope of the laboratory activities.**

Customer Sample Ref:	Final Outflow - Composite	**Customer Sample Code:**	
		Sample Condition:	Satisfactory
Entity Name:	Mountbellew	**Entity Code:**	1200PUB1039
Site / Project:	Investigative	**Sampled By:**	S Curley SSS Ltd
Our Reference:	62214 (22-19356) -	**Sample Matrix:**	WWTP Effluent
Date Sampled:	24/05/2022	**Time Sampled:**	12:30

Method:	Parameter:	Units	LOQ	Result	***Limits
	Chemical Analysis: (F)				
SCP 052	Hydrogen Ion (pH)	pH units	4.0	7.9	
SCP 052	Conductivity	µS/cm @ 20 ℃	15	999	
SCP 027B	Chloride	mg/L	0.5	88.6	
- Note 6	Cyanide Total	µg/L	10.0	< 10.0	
SCP 027I	Total Hardness	mg/L CaCO3	5	246	
SCP 053A	Calcium (Ca)	mg/L	1.0	100.1	
SCP 053A	Magnesium (Mg)	mg/L	0.2	7.4	
SCP 063	Fluoride	µg/L	100	500	
SCP 038/073	Antimony	µg/L	1	< 1	
SCP 038/073	Arsenic	µg/L	1	< 1	
- Note 6	Barium - Total	µg/L	3.0	10.0	
SCP 038/073	Boron	µg/L	20	< 20	
SCP 038/073	Cadmium	µg/L	0.45	< 0.45	
SCP 038/073	Chromium	µg/L	1	< 1	
SCP 038/073	Cobalt (Co)	µg/L	1	< 1	
SCP 038/073	Copper	µg/L	1	109	
SCP 038/073	Lead	µg/L	1	< 1	
SCP 038/073	Mercury	µg/L	0.5	< 0.5	
SCP 038/073	Molybdenum (Mo)	µg/L	5	< 5	
SCP 038/073	Selenium	µg/L	5.00	< 5.00	
- Note 6	Tin - Total	µg/L	3	< 3	
SCP 073	Vanadium (V)	µg/L	1.0	< 1.0	
SCP 038/73	Zinc (Zn)	µg/L	8	35	
SCP 053B	Nickel	µg/L	1	< 2	
- Note 6	1,2 Dicloroethane	µg/L	0.1	< 0.1	
SCP 114A	Benzene	µg/L	0.1	< 0.1	
- Note 6	Diuron	µg/L	0.05	< 0.05	
- Note 6	Hexachlorobenzene	µg/L	0.050	< 0.050	
- Note 6	Isoproturon	µg/L	0.05	< 0.05	
- Note 6	Linuron	µg/L	0.05	< 0.05	
- Note 6	1,3,5-Trichlorobenzene	µg/L	0.01	< 0.01	
- Note 6	2, 6-dichlorobenzamide	µg/L	0.1	< 0.1	
SCP 114A	Carbon tetrachloride	µg/L	1	< 1	
SCP 060B	Dichlobenil	ng/L	5	< 5	
- Note 6	Dichloromethane	µg/L	5.0	< 5.0	
- Note 6	Isodrin	µg/L	0.050	< 0.050	
- Note 6	Aplha-HCH	ug/L	0.050	< 0.050	
- Note 6	Beta-HCH	µg/L	0.050	< 0.050	
SCP 060B	Dieldrin	ng/L	5	< 5	

Customer Sample Ref:	Final Outflow - Composite	**Customer Sample Code:**	
		Sample Condition:	Satisfactory
Entity Name:	Mountbellew	**Entity Code:**	1200PUB1039
Site / Project:	Investigative	**Sampled By:**	S Curley SSS Ltd
Our Reference:	62214 (22-19356) -	**Sample Matrix:**	WWTP Effluent
Date Sampled:	24/05/2022	**Time Sampled:**	12:30

Method:	Parameter:	Units	LOQ	Result	***Limits
- Note 6	Gamma-HCH (Lindane)	µg/L	0.0500	< 0.0500	
- Note 6	2,4-D	µg/L	0.05	0.70	
- Note 6	MCPA	µg/L	0.05	3.20	
- Note 6	MCPP (Mecoprop)	µg/L	0.05	0.10	
- Note 6	Glyphosate	µg/L	0.1	0.5	
SCP 114A	1,2,3-Trichlorobenzene	µg/L	1	< 1	
SCP 114A	1,2,4-Trichlorobenzene	µg/L	0.5	< 0.5	
- Note 6	Atrazine	µg/L	0.020	< 0.020	
SCP 114A	Chloroform	µg/L	2	< 2	
SCP 114A	Ethylbenzene	µg/L	0.5	< 0.5	
SCP 114A	Hexachlorobutadiene	µg/L	0.5	< 0.5	
SCP 114A	m,p Xylene	µg/L	0.5	< 0.5	
SCP 114A	o Xylene	µg/L	0.5	< 0.5	
- Note 6	Simazine	µg/L	0.020	< 0.020	
SCP 114A	Tetrachloroethene	µg/L	0.1	< 0.1	
SCP 114A	Toluene	µg/L	0.5	< 0.5	
SCP 114A	Trichloroethene	µg/L	0.1	< 0.1	
SCP 060B	Acenaphthene	µg/L	0.005	< 0.005	
SCP 060B	Acenaphthylene	µg/L	0.005	< 0.005	
SCP 060B	Anthracene	µg/L	0.005	< 0.005	
SCP 060B	Benz(a)anthracene	µg/L	0.005	< 0.005	
SCP 060B	Benzo(a)pyrene	µg/L	0.003	< 0.003	
SCP 060B	Benzo(b)fluoranthene	µg/L	0.005	< 0.005	
SCP 060B	Benzo(k)fluoranthene	µg/L	0.005	< 0.005	
SCP 060B	Sum Benzo (b)&(k) fluoranthene	µg/L	0.005	< 0.005	
SCP 060B	Benzo(ghi)perylene	µg/L	0.005	< 0.005	
SCP 060B	Chrysene	µg/L	0.005	< 0.005	
SCP 060B	Dibenz(a,h)anthracene	µg/L	0.005	< 0.005	
SCP 060B	Fluoranthene	µg/L	0.005	< 0.005	
SCP 060B	Fluorene	µg/L	0.005	< 0.005	
SCP 060B	Indeno(1,2,3-cd)pyrene	µg/L	0.005	< 0.005	
SCP 060B	Naphthalene	µg/L	0.005	0.080	
SCP 060B	Phenanthrene	µg/L	0.005	< 0.005	
SCP 060B	Pyrene	µg/L	0.005	< 0.005	
SCP 060B	Total PAH	µg/L	0.020	< 0.020	