Annual Environmental Report

2021

Tubbercurry

D0092-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

1.1 ANNUAL STATEMENT OF MEASURES

1.2 TREATMENT SUMMARY

1.3 ELV OVERVIEW

1.4 LICENSE SPECIFIC REPORT INCLUDED IN AER

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 TUBBERCURRY WWTP - TREATED DISCHARGE

2.1.1 INFLUENT SUMMARY - TUBBERCURRY WWTP

2.1.2 EFFLUENT MONITORING SUMMARY - TUBBERCURRY WWTP -

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE -

2.1.4 OPERATIONAL REPORTS SUMMARY FOR TUBBERCURRY WWTP

2.1.5 SLUDGE/OTHER INPUTS TO TUBBERCURRY WWTP

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

3.2 REPORTED INCIDENTS SUMMARY

3.2.1 SUMMARY OF INCIDENTS

3.2.2 SUMMARY OF OVERALL INCIDENTS

4 INFRASTRUCTURAL ASSESSMENT AND PROGRAMME OF IMPROVEMENTS

4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

4.1.1 SWO IDENTIFICATION AND INSPECTION SUMMARY REPORT

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

4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

5 LICENCE SPECIFIC REPORTS

5.1 PRIORITY SUBSTANCES ASSESSMENT

6 CERTIFICATION AND SIGN OFF

6.1 SUMMARY OF AER CONTENTS

7 APPENDIX

7.1 AMBIENT MONITORING SUMMARY

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

This Annual Environmental Report has been prepared for D0092-01, Tubbercurry, in Sligo 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.

New WwTP constructed & commissioned in 2021

1.2 TREATMENT SUMMARY

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

- Tubbercurry WWTP with a Plant Capacity PE of 3500, the treatment type is 3P - Tertiary P removal

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
TPEFF2700D0092SW004	Tubbercurry WWTP	Treated	Non-Compliant	ortho-Phosphate (as P) - unspecified mg/l

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 TUBBERCURRY WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - TUBBERCURRY 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	12	10	2.77
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	187	73
Suspended Solids mg/l	12	2388	155
COD-Cr mg/l	12	2270	258
Total Nitrogen mg/l	12	47	20
Hydraulic Capacity	N/A	5360	1495

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 - TPEFF2700D0092SW004

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	12	N/A	N/A	20	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	N/A	N/A	3.19	Pass
Suspended Solids mg/l	25	62	N/A	12	N/A	N/A	5.80	Pass
pH units	9.00	9.00	N/A	12	N/A	N/A	7.76	Pass
Ammonia-Total (as N) mg/l	2.00	2.40	N/A	11	N/A	N/A	0.186	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.650	0.780	N/A	8	4	N/A	0.603	Fail
Conductivity @20°C µS/cm	N/A	N/A	N/A	1	N/A	N/A	257	
ortho-Phosphate (as PO4) mg/l	N/A	N/A	N/A	3	N/A	N/A	0.647	

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):

Adjustments required to the P-dosing rate

Significance of Results:

The WwTP is non compliant with the ELV's set in the Wastewater Discharge Licence. The impact on the receiving waters is assessed further in Section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF2700D0092SW004

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
Refer to 7.1 Ambient Monitoring Summary							

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 for the following: ortho-Phosphate (as P) - unspecified mg/l.

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.

A deterioration in water quality has been identified, however it is not known if it 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 not have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - TUBBERCURRY WWTP

2.1.4.1 Treatment Efficiency Report - Tubbercurry 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	127702	7397	94
TP	1371	N/A	N/A
cBOD	36041	1164	97
TN	9672	N/A	N/A
SS	76828	2118	97

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

2.1.4.2 Treatment Capacity Report Summary - Tubbercurry 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.

Tubbercurry WWTP	
Peak Hydraulic Capacity (m³/day) - As Constructed	3500
DWF to the Treatment Plant (m³/day)	338

Tubbercurry WWTP	
Current Hydraulic Loading - annual max (m³/day)	5360
Average Hydraulic loading to the Treatment Plant (m³/day)	1495
Organic Capacity (PE) - As Constructed	3500
Organic Capacity (PE) - Collected Load (peak week)[Note1]	2437
Organic Capacity (PE) - Remaining	1063
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 - TUBBERCURRY 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 2021.			

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	Inadequate Operational Procedures / Training	1	No	Yes
Breach of ELV	Inadequate Operational Procedures / Training	1	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	2
Number of Incidents reported to the EPA via EDEN in 2021	2
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 (m3)	Monitoring Status
SW2	152150, 311921	Yes	Medium	Not Meeting	Unknown	103821	Monitored
SW3	151113, 311777	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
TBC	152101, 311952	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
TBC	152101, 311952	Yes	Unknown	Not 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 SWOs in the agglomeration in the year (m3)?	103821

SWO Summary	
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?	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
D0092-SIP:01	Construction of outfall pipe to River Moy and pumping station	C	30/06/2016	Yes	Works Completed	2020	
D0092-SIP:02	Discharges to be discontinued (SW002)	A	30/06/2016	Yes	Works Completed		
D0092-SIP:03	Waste Water Treatment plant and ancillary works	C	30/06/2016	Yes	Works Completed	2020	

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	2014	No

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
Has a Technical amendment/licence review application been submitted to the Agency by IW?	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: 03/05/2022

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

Ambient Points

Ambient Monitoring Point from WWDL (or as agreed with EPA)	*Irish Grid Reference*	EPA Feature Coding Tool code	Receiving Waters Designation (Y/N)				WFD Status
			Bathing Water	Drinking Water	FWPM	Shellfish	
TPEFF2700D0092SW003	146660m E, 312330m N	RS34MO20311	NO	NO	NO	NO	Moderate
TPEFF2700D0092SW004	146660m N, 312330m N	RS34MO20320	NO	NO	NO	NO	Good

Ambient Impact Assessment Table

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS (95%Ile)	%EQS
cBOD mg/l	RS34MO20311	1.373	RS34MO20320	1.54	2.6	6.434
Ortho-Phosphate (as P) mg/l	RS34MO20311	0.037	RS34MO20320	0.035	0.075	-2.182
Ammonia (as N) mg/l	RS34MO20311	0.036	RS34MO20320	0.033	0.14	-1.805
pH pH units	RS34MO20311	7.679	RS34MO20320	7.644		
Dissolved Oxygen %saturation or mg/l	RS34MO20311	9.906	RS34MO20320	10.031		
Temperature Degrees C	RS34MO20311	9.273	RS34MO20320	9.527		
Total Nitrogen (as N) mg/l	RS34MO20311	4.779	RS34MO20320	1.877		

Data/Statistics - 2021

					Ammonia N	BOD, 5 days w	Dissolved Oxy	Ortho-Phosph	pH	Temperature	Total Nitrogen
Entity	**Entity Code**	**Station**	**Station Code**	**Sample Date**	**mg/l**	**mg/l**	**mg/l**	**mg/l**	**pH units**	**Degrees C**	**mg/l**
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	08/01/2021	0.037	3.5	11	0.015	7.5	5.8	2.5
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	18/02/2021	0.044	1.6	11	0.009	7.5	4.9	1
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	05/03/2021	0.01	1	11	0.007	7.8	5.6	1
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	07/05/2021	0.01	1.1	9	0.005	8	8.4	1
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	18/06/2021	0.01	1.5	11	0.021	7.7	12.7	1.3
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	23/07/2021	0.021	1	7	0.014	8	17.4	1
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	15/09/2021	0.05		10.87	0.119	7.58	13.1	2.897
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	21/10/2021	0.05	2	9.4	0.05	7.4	12.1	2.319
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	29/10/2021	0.05	1	10.1	0.05	7.8	10.8	1
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	04/11/2021	0.05	1.7	9.94	0.05	7.4	6.9	4.902
Moy	34M02	Annagh Bridge - D/S Tubbercurry WwTP	RS34M020320	14/12/2021	0.05	1	9.94	0.05	7.4	7.1	1.73
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	08/01/2021	0.01	2.3	10	0.01	7.8	3.8	30.8
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	18/02/2021	0.088	1.6	10	0.016	7.5	4.9	1
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	05/03/2021	0.01	1	11	0.007	7.9	5.5	1
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	07/05/2021	0.01	1.3	9	0.006	8	8.1	1
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	18/06/2021	0.006	1.3	10	0.015	7.7	12.5	1.2
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	23/07/2021	0.019	1	7	0.011	8.2	17.1	1
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	15/09/2021	0.05	1	10.91	0.118	7.57	13.2	2.951
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	21/10/2021	0.05	1.9	10.8	0.05	7.4	12.8	2.079
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	29/10/2021	0.05	1	10.6	0.05	7.8	10.9	1
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	04/11/2021	0.05	1.7	9.81	0.075	7.3	6.4	3.937
Moy	34M02	Annagh Bridge - U/S Tubbercurry WwTP	RS34M020311	14/12/2021	0.05	1	9.85	0.05	7.3	6.8	6.6

Upstream Avg	0.036	1.373	9.906	0.037	7.679	9.273	4.779
Downstream Avg	0.033	1.540	10.031	0.035	7.644	9.527	1.877
Difference	-0.003	0.167		-0.002			
EQS	0.140	2.600		0.075			
% of EQS	-1.805	6.434		-2.182			