Annual Environmental Report

2024

Knock

D0065-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 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 Knock WWTP - Treated Discharge

2.1.1 Influent Summary - Knock WWTP

2.1.2 Effluent Monitoring Summary - Knock WWTP -

2.1.3 Ambient Monitoring Summary for The Treatment Plant Discharge -

2.1.4 Operational Reports Summary for Knock WWTP

2.1.5 Sludge/Other Inputs to Knock 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

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 2024 AER

This Annual Environmental Report has been prepared for D0065-01, Knock, in Mayo 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)

- Knock WWTP with a Plant Capacity PE of 6200, 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
TPEFF2200D0065SW001	Knock WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l 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 KNOCK WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - KNOCK 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	4	516	337
Suspended Solids mg/l	4	114	95
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	4	204	112
Hydraulic Capacity	N/A	4932	1795

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 - TPEFF2200D0065SW001

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	21	Pass
Suspended Solids mg/l	25	62.5	N/A	12	N/A	N/A	11	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.96	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	12	N/A	12	1	N/A	2.48	Pass
Ammonia-Total (as N) mg/l	0.3	0.6	N/A	12	3	3	1.22	Fail
ortho-Phosphate (as P) - unspecified mg/l	0.15	0.3	N/A	12	3	1	0.114	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):

Please refer to incident section of the report.

Significance of Results:

The WWTP is non-compliant with the ELVs set in the Wastewater Discharge Licence. The impact on receiving waters is assessed in Section 2 of this report.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF2200D0065SW001

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	140771, 283661	RS34D330960	No	No	No	No	Moderate
Downstream	140297, 284200	RS34D330970	No	No	No	No	Moderate

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: Ammonia-Total (as N) mg/l, ortho-Phosphate (as P) - unspecified mg/l.

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 ortho-Phosphate (as P) mg/l, and Ammonia (as N) mg/l, concentrations downstream of the effluent discharge is noted.

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 - KNOCK WWTP

2.1.4.1 Treatment Efficiency Report - Knock 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)
cBOD	53396	449	99
TP	N/A	N/A	N/A
COD	160133	3824	98
SS	45279	1957	96
TN	N/A	N/A	N/A

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

2.1.4.2 Treatment Capacity Report Summary - Knock 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.

Knock WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	3600
DWF to the Treatment Plant (m^3/day)	1200

Knock WWTP	
Current Hydraulic Loading - annual max (m^3/day)	4932
Average Hydraulic loading to the Treatment Plant (m^3/day)	1795
Organic Capacity (PE) - As Constructed	6200
Organic Capacity (PE) - Collected Load (peak week)[Note1]	1553
Organic Capacity (PE) - Remaining	4647
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 - KNOCK 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)
Waterworks Sludge	1450.5	Volume (m3)	6447	0.28	No	No	No

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 2024.			

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	Recurring (Y/N)	Closed (Y/N)
Abatement equipment off-line	Adverse Weather	No	Yes
Breach of ELV	WWTP biological sludge issue	Yes	No
Breach of ELV	Plant or equipment breakdown at WWTP	No	Yes

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
Breach of ELV	Inadequate Operational Procedures/Training	Yes	Yes
Abatement equipment off-line	Adverse Weather	No	Yes
Uncontrolled release	Emergency overflow caused by ragging or blocking	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2024	6
Number of Incidents reported to the EPA via EDEN in 2024	6
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 2024 (No. of events)	Total volume discharged in 2024 (m3)	Monitoring Status
SW006	140738, 283665	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored

The contents presented in this table include the most up to date information available at the time of writing. 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 wastewater discharge by metered SWOs during 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
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
D0065-SIP:01	Improvement works to ensure compliance with the ELVs as set out in Schedule A: Discharges & Discharge Monitoring	C	31/12/2019	Yes	Not Started		Capital works not funded in RC3. Capital works funding post 2024 will be contingent on the project being included in the 2025-2029 investment period

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	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?	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	N/A

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

Signed: Date: 26/05/2025

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

Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

Knock WWTP

Ambient Monitoring Points from WWDL (or as agreed by EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Receiving Waters Designation (Y/N)				WFD Status
			Bathing Water	Drinking Water	FWPM	Shellfish	
Upstream Monitoring Station	140771, 283661	RS34D330960	No	No	No	No	Moderate
Downstream Monitoring Station	140297, 284200	RS34D330970	No	No	No	No	Moderate

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS (mean)	% EQS
cBOD mg/l	140771, 283661	1.15	140297, 284200	1.2	1.5	20
Ortho-Phosphate (as P) mg/l	140771, 283661	0.038	140297, 284200	0.040	0.035	-8.5
Ammonia (as N) mg/l	140771, 283661	0.036	140297, 284200	0.075	0.065	60

County	Licence Ref.	Agglomeration	Receiving Water Body	Monitoring Location	Monitoring Result Source	Date	pH	Temperature (°C)	BOD mg/l	COD mg/l	SS mg/l	Total Nitrogen (as N) mg/l	Total Phosphorus (as P) mg/l	Ammonia (as N) mg/l	Orthophosphate (as P) mg/l	Dissolved Oxygen mg/l	Total Oxidised Nitrogen (as Ni mg/l	Dissolved Inorganic Nitrogen (as Ni mg/l	Faecal Coliforms cfu/100ml	Escherichia coli cfu/100ml	Intestinal Enterococci cfu/100ml	Visual Inspec	SSRS	Water level	Conductivity	Nitrate	Chloride	Fluoride	Ammonium (NH4)	Major anions	Major Cations	Priority Subs	Metals & Organic Compounds	Salinity	Nitrate	Nitrite	Chlorophyll
Mayo	D0065-01	Knock	Derragh 34	**Number of samples Required**			12	12	12	0	12	0	0	26	12	12.0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Issued on	22/04/2009			Upstream: SW1u (E140823 N283628)																																	
				Downstream:SW1d (E140297 N284203)																																	
				Knock Downstream		12-Jan-2024	7.5	6.3	1.7		38			0.02	0.06	8.8																					
				Knock Upstream		12-Jan-2024	7.6	6.1	< 1		6			0.04	0.1	9.8																					
				Knock Upstream		19-Apr-2024	8.1	10.4	< 1		5			0.02	0.01	10.7																					
				Knock Downstream		19-Apr-2024	8	10.2	< 1		4			0.08	0.04	9.4																					
				Knock Upstream		30-July-2024	7.9	15.8	1.2		4			< 0.02	0.01	7.2																					
				Knock Downstream		30-July-2024	7.6	15	< 1		2			0.16	0.02	5.29																					
				Knock Downstream		18-Oct-2024	7.7	12.5	1.8		5			0.04	0.04	6.67																					
				Knock Upstream		18-Oct-2024	7.9	12.7	2		4			0.11	0.07	7.99																					