Annual Environmental Report

2020

Cappawhite

D0440-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0440-01, Cappawhite, in Tipperary 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.

There were no major capital or Improvement works undertaken in 2020.

1.2 TREATMENT SUMMARY

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

- CAPPAWHITE WWTP - 2020 with a Plant Capacity PE of 1750, 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
TPEFF2900D0440SW001	CAPPAWHITE WWTP - 2020	Treated	Compliant	N/A

1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

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

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 CAPPAWHITE WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - CAPPAWHITE WWTP - 2020

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
Suspended Solids mg/l	6	1006	301.52
Total Nitrogen mg/l	6	56	27.4
COD-Cr mg/l	6	1569	465.98
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	380	143.17
Total Phosphorus (as P) mg/l	6	9.7	3.67
Hydraulic Capacity	N/A	269	156

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’. The design of the wastewater tretament plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF2900D0440SW001

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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	6	N/A	N/A	10.88	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	10	20	N/A	6	N/A	N/A	1.45	Pass
Suspended Solids mg/l	10	25	N/A	6	1	N/A	5.91	Pass
pH pH units	9	9	N/A	6	N/A	N/A	8.34	Pass
Ammonia-Total (as N) mg/l	1.5	1.8	N/A	6	N/A	N/A	0.02	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.8	0.96	N/A	6	N/A	N/A	0.29	Pass
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	6	N/A	N/A	0.38	
Total Nitrogen mg/l	N/A	N/A	N/A	6	N/A	N/A	10.65	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

Cause of Exceedance(s):

Not applicable

Significance of Results:

The WWTP is compliant with the ELV's set in the Wastewater Discharge Licence.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF2900D0440SW001

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 Status
Upstream	189017, 146310	RS25C100090	No	No	No	No	Poor
Downstream	188281, 146327	RS25C100130	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	RS25C100090	2	RS25C100130	2.2	1.5	13.3

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Ammonia-Total (as N) mg/l	RS25C100090	0.05	RS25C100130	0.28	0.07	353.8
ortho-Phosphate (as P) - unspecified mg/l	RS25C100090	0.05	RS25C100130	0.09	0.04	101
Dissolved Oxygen mg/l	RS25C100090	10.59	RS25C100130	9.79		
pH pH units	RS25C100090	8.35	RS25C100130	8.29		
Temperature °C	RS25C100090	10.33	RS25C100130	10.03		
Total Nitrogen mg/l	RS25C100090	3.63	RS25C100130	3.5		
Dissolved Oxygen % O2	RS25C100090	89.8	RS25C100130			

Significance of Results:

The WWTP discharge was compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results does not meet the required EQS. 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, BOD, Ortho P, 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: Upper catchment pressures are contributing and require investigation.

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 - CAPPAWHITE WWTP - 2020

2.1.4.1 Treatment Efficiency Report - CAPPAWHITE WWTP - 2020

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	26504	619	98
cBOD	8144	83	99
TN	1558	606	61
SS	17150	336	98
TP	209	22	90

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

2.1.4.2 Treatment Capacity Report Summary - CAPPAWHITE WWTP - 2020

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.

CAPPAWHITE WWTP - 2020	
Peak Hydraulic Capacity (m^3/day) - As Constructed	1200
DWF to the Treatment Plant (m^3/day)	400
Current Hydraulic Loading - annual max (m^3/day)	269

CAPPAWHITE WWTP - 2020	
Average Hydraulic loading to the Treatment Plant (m^3/day)	156
Organic Capacity (PE) - As Constructed	1750
Organic Capacity (PE) - Collected Load (peak week)[Note1]	456
Organic Capacity (PE) - Remaining	1294
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 - CAPPAWHITE WWTP - 2020

'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 is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2020.			

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)
There were no reportable incidents in 2020.				

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	0
Number of Incidents reported to the EPA via EDEN in 2020	0
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	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
SW3	188613, 146172	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW2	188868, 147600	Yes	Low	Unknown	Unknown	Unknown	Not Monitored

SWO Summary	
How much sewage was discharged via 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 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
There are no Specified Improvement Programmes for this Agglomeration.							

A summary of the status of any improvements identified by under Condition 5.2 is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
D0440-IP:80				No Improvement works undertaken in 2020

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 Table.

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 list of the various reports required for this agglomeration and a brief summary of their recommendations.

5.a Licence Specific Reports Summary Table

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of 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	Yes

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

Signed: Date: 24/06/2021

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

Cappawhite Ambient Monitoring Data 2020

							Parameter	Ammonia N	Biological Oxyg	COD Chemical	Dissolved Oxyg	Ortho-Phospha	pH	Suspended Sol	TN	Temperature
							Max.	--	--	--	--	--	--	--		--
							Min.	--	--	--	--	--	--	--		--
							Test Method	--	--	--	--	--	--	--		--
Category	Entity	Station	Easting	Northing	Sample Ref	Sample Date	Analyst Conclu	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l	Degrees C
Ambient Monitoring	Cappawhite Stream	Upstream @ Cappawhite WWTP	189019	146310	20550086	21/01/2020	-	0.04	2		12.1	0.082	8.5		2.1	6.6
Ambient Monitoring	Cappawhite Stream	Downstream @ Cappawhite WWTP	188287	146311	20550085	21/01/2020	-	0.42	2.3		11.5	0.04	8.5		2.1	6.3
Ambient Monitoring	Cappawhite Stream	Upstream @ Cappawhite WWTP	189019	146310	20550536	06/05/2020	-	0.03	2		10.83	0.038	8.56		4.9	11.6
Ambient Monitoring	Cappawhite Stream	Downstream @ Cappawhite WWTP	188287	146311	20550537	06/05/2020	-	0.32	2.3		9.25	0.097	8.47		4.7	10.4
Ambient Monitoring	Cappawhite Stream	Upstream @ Cappawhite WWTP	189019	146310	20550899	08/07/2020	-	0.07	2		9.3	0.078	8		3.9	13.1
Ambient Monitoring	Cappawhite Stream	Downstream @ Cappawhite WWTP	188287	146311	20550902	08/07/2020	-	0.09	2		8.61	0.083	7.9		3.7	13.1
Ambient Monitoring	Cappawhite Stream	Upstream @ Cappawhite WWTP	189019	146310	20550532	11/11/2020	-	0.03	2.6		9.58	0.16	8.3		3.3	11.6
Ambient Monitoring	Cappawhite Stream	Downstream @ Cappawhite WWTP	188287	146311	20550529	11/11/2020	-	0.28	4.9		9.58	0.229	8.4		4.9	11.6