Annual Environmental Report

2020

Cappoquin

D0272-01

CONTENTS

Rev 1 Note: Section 4.1.1 Question 1 answer changed to "Unknown". Approved 09/07/2021

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0272-01, Cappoquin, in Waterford 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.

No Capital works have been identified

1.2 TREATMENT SUMMARY

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

- CAPPOQUIN (TWIG LANE) WWTP - 2020 with a Plant Capacity PE of 0, the treatment type is 1 - Primary treatment
- CAPPOQUIN WWTP - 2020 with a Plant Capacity PE of 2278, 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
TPEFF3100D0272SW004	CAPPOQUIN (TWIG LANE) WWTP - 2020	Treated	Compliant	N/A

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF3100D0272SW001	CAPPOQUIN 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 CAPPOQUIN (TWIG LANE) WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - CAPPOQUIN (TWIG LANE) 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
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	6	438	162
Suspended Solids mg/l	6	294.4	152.72
COD-Cr mg/l	6	657	288.83
Hydraulic Capacity	N/A	50	50

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 greater 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 -

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)
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	N/A	N/A	N/A	6	N/A	N/A	113	
COD-Cr mg/l	N/A	N/A	N/A	6	N/A	N/A	204.83	
Suspended Solids mg/l	N/A	N/A	N/A	6	N/A	N/A	59.65	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	6	N/A	N/A	3.3	
Total Nitrogen mg/l	N/A	N/A	N/A	6	N/A	N/A	25.98	

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

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
There is no Ambient data included in the AER.							

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 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.

The discharge from the wastewater treatment plant does not have an observable impact on the water quality.

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 - CAPPOQUIN (TWIG LANE) WWTP - 2020

2.1.4.1 Treatment Efficiency Report - CAPPOQUIN (TWIG LANE) 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)
cBOD	2957	2062	30
COD	5271	3738	29
TP	N/A	60	N/A
TN	N/A	474	N/A
SS	2787	1089	61

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

2.1.4.2 Treatment Capacity Report Summary - CAPPOQUIN (TWIG LANE) 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.

CAPPOQUIN (TWIG LANE) WWTP - 2020	
Peak Hydraulic Capacity (m^3/day) - As Constructed	50
DWF to the Treatment Plant (m^3/day)	50
Current Hydraulic Loading - annual max (m^3/day)	50
Average Hydraulic loading to the Treatment Plant (m^3/day)	50
Organic Capacity (PE) - As Constructed	0
Organic Capacity (PE) - Collected Load (peak week)[Note1]	0
Organic Capacity (PE) - Remaining	0
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 - CAPPOQUIN (TWIG LANE) 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.							

2.2 CAPPOQUIN WWTP - 2020 - TREATED DISCHARGE

2.2.1 INFLUENT MONITORING SUMMARY - CAPPOQUIN 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
Total Phosphorus (as P) mg/l	11	11.03	5.92
COD-Cr mg/l	11	810	358.12
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	11	383	163.97
Suspended Solids mg/l	11	333	156.4

Parameters	Number of Samples	Annual Max	Annual Mean
Hydraulic Capacity	N/A	2224	296

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.

2.2.2 EFFLUENT MONITORING SUMMARY - TPEFF3100D0272SW001

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	11	N/A	N/A	13.3	Pass
Total Oxidised Nitrogen (as N) mg/l	35	42	N/A	11	N/A	N/A	3.9	Pass
Suspended Solids mg/l	35	87.5	N/A	11	N/A	N/A	4.86	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	11	N/A	N/A	1.93	Pass
Ammonia-Total (as N) mg/l	10	12	N/A	11	N/A	N/A	0.16	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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
pH pH units	9	9	N/A	11	N/A	N/A	7.32	Pass
ortho-Phosphate (as P) - unspecified mg/l	5	6	N/A	11	N/A	N/A	0.76	Pass
Total Nitrogen mg/l	N/A	N/A	N/A	10	N/A	N/A	4.88	
Conductivity @20°C µS/cm	N/A	N/A	N/A	1	N/A	N/A	371	
Faecal coliforms no./100mls	N/A	N/A	N/A	10	N/A	N/A	N/A	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	11	N/A	N/A	0.89	

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.

2.2.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF3100D0272SW001

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	209929, 98680	RS18B022900	No	No	No	No	Moderate
Downstream	209525, 92588	RS18B023000	No	No	No	No	High

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

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.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

2.2.4 OPERATIONAL PERFORMANCE SUMMARY - CAPPOQUIN WWTP - 2020

2.2.4.1 Treatment Efficiency Report - CAPPOQUIN 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)
TN	N/A	438	N/A
TP	500	78	84
SS	13223	424	97
cBOD	13863	168	99
COD	30278	1161	96

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

2.2.4.2 Treatment Capacity Report Summary - CAPPOQUIN 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.

CAPPOQUIN WWTP - 2020	
Peak Hydraulic Capacity (m^3/day) - As Constructed	2278
DWF to the Treatment Plant (m^3/day)	578
Current Hydraulic Loading - annual max (m^3/day)	2224
Average Hydraulic loading to the Treatment Plant (m^3/day)	296
Organic Capacity (PE) - As Constructed	2278
Organic Capacity (PE) - Collected Load (peak week)[Note1]	1288
Organic Capacity (PE) - Remaining	990

CAPPOQUIN WWTP - 2020	
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.

2.2.5 SLUDGE / OTHER INPUTS - CAPPOQUIN 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)
Domestic /Septic Tank Sludge	14.36	Weight (Tonnes)		0.6	No	Yes	Yes
Domestic /Septic Tank Sludge	33.5	Weight (Tonnes)		1.6	No	Yes	Yes

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)
Specified % Reduction Value not achieved	WWTP operating above capacity	1	Yes	No
Abatement Equipment offline	Adverse Weather	1	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	2
Number of Incidents reported to the EPA via EDEN in 2020	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	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
SWO05	210075, 99413	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SWO06	210238, 98158	Yes	Low	Meeting	34	3123	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
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 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
D0272-SIP:01	Provision of new secondary waste water treatment plant and ancillary works	C	30/06/2015	Yes	Works Completed		
D0272-SIP:02	Provision of Twig Lane Pumping Station, storm water detention tank and outfall associated with SW005.	C	30/06/2015	Yes	Works Completed		
D0272-SIP:03	Provision of upgrade collection system for Cappoquin	C	30/06/2015	Yes	Works Completed		
D0272-SIP:04	SW000 Primary Discharge Point to be Discontinued	C	30/06/2015	Yes	Works Completed		

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
D0272-SIP:05	SW002 Secondary Discharge Point to be Discontinued	C	30/06/2015	Yes	Works Completed		
D0272-SIP:06	SW003 Secondary Discharge Point to be discontinued	C	30/06/2015	Yes	Works Completed		
D0272-SIP:07	SW004 Secondary Discharge Point to be discontinued	C	30/06/2015	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.
D0272-SIP:08	SW005 Provision of storm water overflows to comply with the criteria outlined in the DoECLG 'Procedures and Criteria in relation to Storm Water Overflows' (1995).	C	30/06/2015	Yes	Works Completed		
D0272-SIP:09	SW006 Provision of storm water overflows to comply with the criteria outlined in the DoECLG 'Procedures and Criteria in relation to Storm Water Overflows' (1995).	C	30/06/2015	Yes	Works Completed		

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
There are no Improvements Programme for this Agglomeration.				

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
Priority Substances Assessment	Yes	2014	No	

5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2014

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: 09/07/2021

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
Appendix 7.2 - Other

Ambient Monitoring Summary

Annual ambient monitoring results show that the discharge from the WWTP is having a low impact on the receiving waters and does not affect the EQS status of the River Blackwater.

The U/S Sampling point used is circa 1km downstream of Avonmore Bridge Sampling Point [31003146BR1110]. There were not any results available for the prescribed sampling point.

SW1u Station RS18B022900

Date	pH	DO	BOD	Temp	Orthophosphate (as P)	Ammonia
06/02/2020	7.51	96.4	0.5	8	0.02	0.02
16/06/2020	8.35	121.4	0.5	18.7	0.02	0.03
09/09/2020	7.92	96	1	16.2	0.04	0.01
03/11/2020	7.59	86	1	9.7	0.06	0.01
Annual Average	**7.84**	**99.95**	**0.75**	**13.15**	**0.04**	**0.02**
Units	**Scale**	**%**	**Mg/l**		**Mg/l**	**Mg/l**
EQS (Coastal Water Body)	6.0 < pH <9.0	120% < 95%ile > 80%	High Status ≤1.3 Good Status ≤1.5	-	*Not specified*	High Status ≤0.040 Good Status ≤0.065

The D/S Sampling point used is circa 4km downstream of the prescribed point [31003144BR2120]. This point is not easily accessible; the point used is at Villierstown Pier.

SW1d Station RS18B022950

Date	pH	DO	BOD	Temp	Orthophosphate (as P)	Ammonia
06/02/2020	7.63	98	0.5	0	0.03	0.01
16/06/2020	8.2	106	1	17.9	0.02	0.04
09/09/2020	7.9	94	1	16.6	0.05	0.03
03/11/2020	7.61	93	2	9.7	0.07	0.02
Annual Average	**7.84**	**97.75**	**1.13**	**11.05**	**0.04**	**0.03**
Units	**Scale**	**%**	**Mg/l**		**Mg/l**	**Mg/l**
EQS (Coastal Water Body)	6.0 < pH <9.0	120% < 95%ile > 80%	High Status ≤1.3 Good Status ≤1.5	-	*Not specified*	High Status ≤0.040 Good Status ≤0.065

EQS Comparison of U/S and D/S Annual Mean Samples

			Receiving Waters Designation (Yes/No)					Mean (mg/l)		
Ambient Monitoring Point from WWDL (or as agreed with EPA)	**Irish National Grid Reference (Easting, Northing)**	**EPA Feature Coding Tool code**	**Bathing Water**	**Drinking Water**	**FWPM**	**Shellfish**	**Current WFD Status**	**cBOD**	**o-Phosphate (as P)**	**Ammonia (as N)**
Upstream Monitoring Point		RS18B022900 - 1km d/s Cappoquin Br					High	0.750	0.035	0.018
Downstream Monitoring Point		RS18B022950 Villierstown Pier	No	No	No	No	High	1.125	0.043	0.025
Difference								*-0.375*	*-0.008*	*-0.008*
EQS								1.300	0.025	0.040
% of EQS								87%	170%	63%

	Influent Annual Mean	ELV % Reduction		Effluent Annual Mean	
cBOD	162	20%	129.60	113	TRUE
Suspended Solids	152.72	50%	76.36	59.65	TRUE

Ambient Monitoring Summary

Annual ambient monitoring results show that the discharge from the WWTP is having a low impact on the receiving waters and does not affect the EQS status of the River Blackwater.

The U/S Sampling point used is circa 1km downstream of Avonmore Bridge Sampling Point [31003146BR1110]. There were not any results available for the prescribed sampling point.

SW1u Station RS18B022900

Date	pH	DO	BOD	Temp	Orthophosphate (as P)	Ammonia
06/02/2020	7.51	96.4	0.5	8	0.02	0.02
16/06/2020	8.35	121.4	0.5	18.7	0.02	0.03
09/09/2020	7.92	96	1	16.2	0.04	0.01
03/11/2020	7.59	86	1	9.7	0.06	0.01
Annual Average	**7.84**	**99.95**	**0.75**	**13.15**	**0.04**	**0.02**
Units	**Scale**	**%**	**Mg/l**		**Mg/l**	**Mg/l**
EQS (Coastal Water Body)	6.0 < pH <9.0	120% < 95%ile > 80%	High Status ≤1.3 Good Status ≤1.5	-	*Not specified*	High Status ≤0.040 Good Status ≤0.065

The D/S Sampling point used is circa 4km downstream of the prescribed point [31003144BR2120]. This point is not easily accessible; the point used is at Villierstown Pier.

SW1d Station RS18B022950

Date	pH	DO	BOD	Temp	Orthophosphate (as P)	Ammonia
06/02/2020	7.63	98	0.5	0	0.03	0.01
16/06/2020	8.2	106	1	17.9	0.02	0.04
09/09/2020	7.9	94	1	16.6	0.05	0.03
03/11/2020	7.61	93	2	9.7	0.07	0.02
Annual Average	**7.84**	**97.75**	**1.13**	**11.05**	**0.04**	**0.03**
Units	**Scale**	**%**	**Mg/l**		**Mg/l**	**Mg/l**
EQS (Coastal Water Body)	6.0 < pH <9.0	120% < 95%ile > 80%	High Status ≤1.3 Good Status ≤1.5	-	*Not specified*	High Status ≤0.040 Good Status ≤0.065

EQS Comparison of U/S and D/S Annual Mean Samples

			Receiving Waters Designation (Yes/No)					Mean (mg/l)		
Ambient Monitoring Point from WWDL (or as agreed with EPA)	**Irish National Grid Reference (Easting, Northing)**	**EPA Feature Coding Tool code**	**Bathing Water**	**Drinking Water**	**FWPM**	**Shellfish**	**Current WFD Status**	**cBOD**	**o-Phosphate (as P)**	**Ammonia (as N)**
Upstream Monitoring Point		RS18B022900 - 1km d/s Cappoquin Br					High	0.750	0.035	0.018
Downstream Monitoring Point		RS18B022950 Villierstown Pier	No	No	No	No	High	1.125	0.043	0.025
Difference								*-0.375*	*-0.008*	*-0.008*
EQS								1.300	0.025	0.040
% of EQS								87%	170%	63%