

# Annual Environmental Report

2020



Tallow

D0273-01

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Revision Note: Formatting to Section 2.1.2 & 2.1.3 Titles. Approved 28/05/2021

# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0273-01, Tallow, 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 are planned or have been identified.

## 1.2 TREATMENT SUMMARY

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

- Tallow Septic Tank - 2020 with a Plant Capacity PE of 0, the treatment type is 3P - Tertiary P removal
- TALLOW WWTP - 2020 with a Plant Capacity PE of 2186, 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
TPEFF3100D0273SW002	Tallow Septic Tank - 2020	Treated	Non-Compliant	N/A

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF3100D0273SW001	TALLOW 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 TALLOW SEPTIC TANK - 2020 - TREATED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - TALLOW SEPTIC TANK - 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
<b>There is no Influent data included in the AER.</b>			

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 - TPEFF3100D0273SW001

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)
<b>There is no Effluent data included in the AER.</b>								

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 TPEFF3100D0273SW001

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
<b>There is no Ambient data included in the AER.</b>							

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.

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 - TALLOW SEPTIC TANK - 2020

### 2.1.4.1 Treatment Efficiency Report - Tallow Septic Tank - 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)
<b>There is no Treatment Efficiency data included in the AER.</b>			

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

### 2.1.4.2 Treatment Capacity Report Summary - Tallow Septic Tank - 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.

Tallow Septic Tank - 2020	
Peak Hydraulic Capacity (m <sup>3</sup> /day) - As Constructed	N/A
DWF to the Treatment Plant (m <sup>3</sup> /day)	N/A
Current Hydraulic Loading - annual max (m <sup>3</sup> /day)	N/A
Average Hydraulic loading to the Treatment Plant (m <sup>3</sup> /day)	N/A
Organic Capacity (PE) - As Constructed	0
Organic Capacity (PE) - Collected Load (peak week) <sup>Note1</sup>	0
Organic Capacity (PE) - Remaining	0

## Tallow Septic Tank - 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.

## 2.1.5 SLUDGE / OTHER INPUTS - TALLOW SEPTIC TANK - 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 TALLOW WWTP - 2020 - TREATED DISCHARGE

### 2.2.1 INFLUENT MONITORING SUMMARY - TALLOW 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 Nitrogen mg/l	2	21.5	8.06
Suspended Solids mg/l	12	345	224.62

Parameters	Number of Samples	Annual Max	Annual Mean
COD-Cr mg/l	12	1148	392.47
Total Phosphorus (as P) mg/l	12	7.58	2.77
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	550	155.28
Hydraulic Capacity	N/A	2255	334

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'.

## 2.2.2 EFFLUENT MONITORING SUMMARY - TPEFF3100D0273SW000

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	12	N/A	N/A	15.29	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	6.48	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	N/A	12	N/A	N/A	2.07	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.92	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)
Ammonia-Total (as N) mg/l	5	6	N/A	12	N/A	N/A	0.18	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	12	N/A	N/A	0.28	Pass
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.42	
Conductivity @20°C µS/cm	N/A	N/A	N/A	1	N/A	N/A	N/A	
Faecal coliforms no./100mls	N/A	N/A	N/A	7	N/A	N/A	N/A	
Total Nitrogen mg/l	N/A	N/A	N/A	11	N/A	N/A	3.75	
Total Oxidised Nitrogen (as N) mg/l	N/A	N/A	N/A	12	N/A	N/A	2.26	

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 TPEFF3100D0273SW000

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	199887, 94325	RS18B050800	No	No	No	No	Good
Downstream	208024, 92283	RS18B051000	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 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.

## 2.2.4 OPERATIONAL PERFORMANCE SUMMARY - TALLOW WWTP - 2020

### 2.2.4.1 Treatment Efficiency Report - TALLOW 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)
<b>cBOD</b>	31229	356	99
<b>TP</b>	557	71	87
<b>TN</b>	2227	357	84
<b>SS</b>	45175	1111	98
<b>COD</b>	78933	2622	97

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

### 2.2.4.2 Treatment Capacity Report Summary - TALLOW 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.

TALLOW WWTP - 2020	
<b>Peak Hydraulic Capacity (m<sup>3</sup>/day) - As Constructed</b>	1475.55
<b>DWF to the Treatment Plant (m<sup>3</sup>/day)</b>	491.85
<b>Current Hydraulic Loading - annual max (m<sup>3</sup>/day)</b>	2255

TALLOW WWTP - 2020	
Average Hydraulic loading to the Treatment Plant (m <sup>3</sup> /day)	334
Organic Capacity (PE) - As Constructed	2186
Organic Capacity (PE) - Collected Load (peak week) <sup>Note1</sup>	1333
Organic Capacity (PE) - Remaining	853
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 - TALLOW 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
<b>There were no relevant environmental complaints in 2020.</b>			

### 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)
<b>Uncontrolled release</b>	Blocked Sewer	1	No	No

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	1
Number of Incidents reported to the EPA via EDEN in 2020	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	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
SW003	200022, 94205	Yes	Low	Meeting	34	8361	Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	8361
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
<b>D0273-SIP:01</b>	Completion of Waste Water collection system	C	30/06/2014	Yes	Works Completed		
<b>D0273-SIP:02</b>	Secondary waste water discharge (SW2) to be discontinued	C	30/06/2014	Yes	Works Completed		
<b>D0273-SIP:03</b>	Storm Water Overflows shall comply with the criteria outlined in the DoECLG "Procedures and Criteria in relation to Storm Water Overflows, 1995".	C	30/06/2014	Yes	Works Completed		
<b>D0273-SIP:04</b>	SW000 Primary discharge from Village septic tank, at Convent field, Townsparks East to be discontinued	A	30/06/2014	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
<b>D0273-SIP:05</b>	SW002 Secondary Discharge from septic tank and reedbed, serving Woodview Estate, Townparks East to be discontinued.	A	30/06/2014	Yes	Works Completed		
<b>D0273-SIP:06</b>	Waste Water Treatment plant to include secondary treatment, nutrient removal and ancillary works	C	30/06/2014	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
<b>There are no Improvements Programme for this Agglomeration.</b>				

## 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: 20/05/2021

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

## Ambient Monitoring

### D0273 – Tallow

Upstream Sampling is undertaken at Tallow Bridge [River Bride]

SW1u													
EntityName	StationName	SampleDate	pH	Dissolved Oxygen (Measurement)	Dissolved Oxygen % Saturation	Temperature	BOD	Ortho-phosphate	Total Nitrogen	Ammonia (N)	Nitrate	Nitrite	TON
Bride	RS18B050800	11/02/2020	7.58	11.5	92.5	5.9	0.5	0.03	4.4	0.02	3.9	0.01	4
Bride	RS18B050800	23/06/2020	8.11	9.2	91	15.3	2	0.068	3.9	0.07	3.9		3.9
Bride	RS18B050800	20/08/2020	7.81	8.7	91	16.2	3	0.08	3.1	0.02	3.1		-
Bride	RS18B050800	09/09/2020	7.98	10.5	104	15.7	1	0.03	4.2	0.03	4.2		-
Bride	RS18B050800	19/11/2020	7.65	11.1	94	9	0.5	0.07	4.3	0.03	3.5		3.5
Bride	RS18B050801	15/12/2020	7.71	12.1	104	8.1	0.5	0.04	5.8	0.02	4		4

SW1d @Camphire Bridge													
EntityName	StationName	SampleDate	pH	Dissolved Oxygen (Measurement)	Dissolved Oxygen % Saturation	Temperature	BOD	Ortho-phosphate	Total Nitrogen	Ammonia (N)	Nitrate	Nitrite	TON
Camphire Bridge	RS18B051000	11/02/2020	7.57	12.1	96.7	5.9	0.5	0.04	4.1	0.01	3.6	0.01	3.7
Camphire Bridge	RS18B051000	23/06/2020	8.02	7.5	77	-	1	0.04	3.6	0.08	3.4		3.4
Camphire Bridge	RS18B051000	20/08/2020	7.6	6.4	67	16.8	1	0.1	9.3	0.06	1.9		-
Camphire Bridge	RS18B051000	09/09/2020	7.76	8.7	88	16.1	5	0.05	4.4	0.03	4		-
Camphire Bridge	RS18B051000	19/11/2020	7.58	12.5	106	9.2	0.5	0.04	4.4	0.03	3.5		3.5
Camphire Bridge	RS18B051000	15/12/2020	7.58	11.2	96	8	0.5	0.04	3.9	0.03	3.8		3.9

The WWDL requires ambient sampling to be undertaken downstream of the primary discharge. Due to Health & Safety concerns in accessing the river bank close to the WWTP and the continual presence of livestock on the adjoining land, D/S sampling was undertaken circa 10km downstream at Camphire Bridge, this is the nearest bridge crossing downstream of Tallow.

The tabulated results below, show that the effluent from the WWTP is not having a deleterious effect on the quality of the discharge waters.

**Table 7.1.2 Ambient Monitoring Results SW1u**

Parameter	SW0u	SW0u	SW0u	SW0u	SW0u	SW0u	EQS (River Water Body)
Date	11/02/2020	23/06/2020	20/08/2020	09/09/2020	19/11/2020	15/12/2020	-
pH	7.58	8.11	7.81	7.98	7.65	7.71	6.0 < pH < 9.0
DO%	92.5	91	91	104	94	104	120% > 95%ile > 80%
Temp	5.9	15.3	16.2	15.7	9	8.1	
BOD	0.5	2	3	1	0.5	0.5	High Status ≤1.3 Good Status ≤1.5
Orthophosphate (as P)	0.03	0.068	0.08	0.03	0.07	0.04	High Status ≤0.025 Good Status ≤0.035
Total Oxidised Nitrogen	4	3.9	-	-	3.5	4	Not specified
Total Ammonia (as N)	0.02	0.07	0.02	0.03	0.03	0.02	High Status ≤0.040 Good Status ≤0.065

**Table 7.1.3 Ambient Monitoring Results SW1d**

Parameter	SW0d	SW0d	SW0d	SW0d	SW0d	SW0d	EQS (River Water Body)
Date	11/02/2020	23/06/2020	20/08/2020	09/09/2020	19/11/2020	15/12/2020	-
pH	7.57	8.02	7.6	7.76	7.58	7.58	6.0 < pH <9.0
DO%	96.7	77	67	88	106	96	120% > 95%ile > 80%
Temp	5.9	-	16.8	16.1	9.2	8	
BOD	0.5	1	1	5	0.5	0.5	High Status ≤1.3 Good Status ≤1.5
Orthophosphate (as P)	0.04	0.04	0.1	0.05	0.04	0.04	High Status ≤0.025 Good Status ≤0.035
Total Oxidised Nitrogen	3.7	3.4	-	-	3.5	3.9	Not specified
Total Ammonia (as N)	0.01	0.08	0.06	0.03	0.03	0.03	High Status ≤0.040 Good Status ≤0.065

**Table 7.1.4 Ambient Monitoring Results Up and Down Stream Annual Average Comparison**

Parameter	pH	DO%	BOD	Orthophosphate (as P)	Total Oxidised Nitrogen	Total Ammonia (as N)
SW1u [Annual Average]	7.81	96.08	1.25	0.05	3.85	0.03
SW1d [Annual Average]	7.69	88.45	1.42	0.05	3.63	0.04
Difference between SW1u & SW2d	0.12	7.63	-0.17	0.00	0.23	-0.01
EQS (River Water Body)	6.0 < pH <9.0	120% > 95%ile > 80%	High Status ≤1.3 Good Status ≤1.5	High Status ≤0.025 Good Status ≤0.035	Not specified	High Status ≤0.040 Good Status ≤0.065