

# Annual Environmental Report

2020



Mitchelstown

D0202-01

## **CONTENTS**

### **1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 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 MITCHELSTOWN WWTP - 2020 - COMBINED DISCHARGE
  - 2.1.1 INFLUENT SUMMARY
  - 2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF0500D0202SW100
  - 2.1.3 EFFLUENT MONITORING SUMMARY - COMBINED DISCHARGE - TPEFF0500D0202SW001
  - 2.1.4 AMBIENT MONITORING SUMMARY FOR COMBINED DISCHARGE - TPEFF0500D0202SW001
  - 2.1.5 OPERATIONAL PERFORMANCE SUMMARY
  - 2.1.6 SLUDGE/OTHER INPUTS

### **3 COMPLAINTS SUMMARY**

- 3.1 REPORTED INCIDENTS SUMMARY
  - 3.1.1 SUMMARY OF INCIDENTS
  - 3.1.2 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**

# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0202-01, Mitchelstown, in Cork 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.

Irish Water has prioritised improvement works for Mitchelstown Waste Water Treatment Plant and we have allocated budget accordingly. However the solution is technically complex, given the particular circumstances in Mitchelstown with the environmental limitations of the receiving waters. We intend to apply for planning permission as soon as we have a design that will meet the required environmental and other statutory standards, which we are obliged to comply with. We are working in parallel with our regulators and all stakeholders to see what interim solutions might be possible pending delivery of the enduring solution.

## 1.2 TREATMENT SUMMARY

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

- Mitchelstown WWTP - 2020 with a Plant Capacity PE of 5600, 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
TPEFF0500D0202SW001	Mitchelstown WWTP - 2020	Combined	Non-Compliant	SS, BOD, Ammonia, & Ortho P

## 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 MITCHELSTOWN WWTP - 2020 - COMBINED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - MITCHELSTOWN 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
COD-Cr mg/l	12	1174	523.32
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	462	204.97
Total Nitrogen mg/l	12	49.9	26.27
Total Phosphorus (as P) mg/l	12	5.48	2.97
Hydraulic Capacity	N/A	7506	2022

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 - TPEFF0500D0202SW100

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)
Total Nitrogen mg/l	N/A	N/A	N/A	13	N/A	N/A	12.71	
Conductivity @20°C µS/cm	N/A	N/A	N/A	1	N/A	N/A	436	
ortho-Phosphate (as P) - unspecified mg/l	N/A	N/A	N/A	3	N/A	N/A	0.48	
Ammonia-Total (as N) mg/l	N/A	N/A	N/A	14	N/A	N/A	8.26	
COD-Cr mg/l	N/A	N/A	N/A	14	N/A	N/A	72.44	
pH pH units	N/A	N/A	N/A	2	N/A	N/A	7.73	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	N/A	N/A	N/A	13	N/A	N/A	20.32	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	13	N/A	N/A	0.94	
Suspended Solids mg/l	N/A	N/A	N/A	14	N/A	N/A	28	

2 – For pH the WWDA specifies a range of pH 6 - 9

### Cause of Exceedance(s):

Not applicable

### 2.1.3 EFFLUENT MONITORING SUMMARY - COMBINED - TPEFF0500D0202SW001

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)
Sulphate mg/l	600	720	0	13	0	0	121.49	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	7	14	0	13	2	1	8.91	Fail
Chloride mg/l	2000	2400	0	13	1	0	945.97	Pass
COD-Cr mg/l	80	160	0	13	0	0	27.75	Pass
Fats, Oils & Greases mg/l	0	0	0	5	0	0	9.11	Pass
Total Phosphorus (as P) mg/l	0	0	0	13	0	0	0.22	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)
<b>Ammonia-Total (as N) mg/l</b>	0.5	0.6	0	13	11	11	1.98	Fail
<b>Total Nitrogen mg/l</b>	0	0	0	13	0	0	10.93	Pass
<b>ortho-Phosphate (as P) - unspecified mg/l</b>	0.3	0.36	0	13	3	3	0.16	Fail
<b>pH pH units</b>	9	9	0	13	0	0	8.1	Pass
<b>Suspended Solids mg/l</b>	15	37.5	0	13	2	1	11.27	Fail
<b>Conductivity @20°C µS/cm</b>	0	0	0	12	0	0	3849.93	Pass

Notes:

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

2 – For parameters where a mean ELV applies 3 – For pH the WWDA specifies a range of pH 6-9

**Cause of Exceedance(s):** The plant requires an update to meet the regulatory limits.

### Significance of Results:

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

## 2.1.4 AMBIENT MONITORING SUMMARY FOR THE COMBINED DISCHARGE TPEFF0500D0202SW001

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	180165, 113249	RS18F050150	No	No	No	No	Poor
Downstream	177923, 112598	RS18F050300	No	No	No	No	Poor

**Where the receiving water body is not a river or where the data is not in EDEN – the Ambient data will be appended.**

### 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.

Based on ambient monitoring results a deterioration in Ammonia - Total (as N) and Ortho-Phosphate (as P), concentrations downstream of the effluent discharge is noted.

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

## 2.1.5 OPERATIONAL PERFORMANCE SUMMARY - MITCHELSTOWN WWTP - 2020

### 2.1.5.1 Treatment Efficiency Report - Mitchelstown 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)
TP	1917	790	59
SS	N/A	22246	N/A
COD	337501	59040	83
TN	15713	10691	32
cBOD	132188	17098	87

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

### 2.1.5.2 Treatment Capacity Report Summary - Mitchelstown 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.

Mitchelstown WWTP - 2020	
Peak Hydraulic Capacity (m <sup>3</sup> /day) - As Constructed	4860
DWF to the Treatment Plant (m <sup>3</sup> /day)	1620
Current Hydraulic Loading - annual max (m <sup>3</sup> /day)	7506

Mitchelstown WWTP - 2020	
Average Hydraulic loading to the Treatment Plant (m <sup>3</sup> /day)	2022
Organic Capacity (PE) - As Constructed	5600
Organic Capacity (PE) - Collected Load (peak week) <sup>Note1</sup>	5251
Organic Capacity (PE) - Remaining	349
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.

## 2.1.6 SLUDGE / OTHER INPUTS - MITCHELSTOWN 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>Breach of ELV</b>	WWTP upgrade required to meet ELV	1	Yes	No
<b>Other</b>	Shock load to the WWTP	1	No	Yes
<b>Uncontrolled release</b>	EO caused by pump failure	1	No	Yes

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	3
Number of Incidents reported to the EPA via EDEN in 2020	3
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
<b>SW004</b>	182454, 111778	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
<b>SW2-MITC (A)</b>	181000, 113318	Yes	Medium	Meeting	Unknown	Unknown	Monitored
<b>SW3-MITC</b>	181857, 113075	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
<b>SW5-MITC (A)</b>	181639, 113132	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SW5-MITC (B)</b>	181638, 113133	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SW5-MITC (C)</b>	181638, 113133	No	Low	Meeting	Unknown	Unknown	Not Monitored

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
SW5-MITC (D)	181638, 113133	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW5-MITC (E)	181638, 113133	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW5-MITC (F)	181638, 113133	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW5-MITC (G)	181638, 113133	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
SW6-MITC	181552, 113202	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
TBC	181556, 113200	No	Low	Meeting	Unknown	Unknown	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?	Yes

## 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>D0202-SIP:01</b>	Upgrading of 4 Storm Water Overflows to comply with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to Storm Water Overflows, 1995" (SW2 - MITC)	C	31/12/2020	No	Works Completed		
<b>D0202-SIP:02</b>	Upgrading of 4 Storm Water Overflows to comply with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to Storm Water Overflows, 1995" (SW3 - MITC)	C	31/12/2020	No	Works Completed		
<b>D0202-SIP:03</b>	Upgrading of 4 Storm Water Overflows to comply with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to Storm Water Overflows, 1995" (SW4 - MITC)	C	31/12/2020	No	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>D0202-SIP:04</b>	Upgrading of 4 Storm Water Overflows to comply with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to Storm Water Overflows, 1995" (SW5 - MITC)	C	31/12/2020	No	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>D0202-IP:74</b>	Irish Water has prioritised improvement works for Mitchelstown Waste Water Treatment Plant and we have allocated budget accordingly. However the solution is technically complex, given the particular circumstances in Mitchelstown with the environmental limitations of the receiving waters. We intend to apply for planning permission as soon as we have a design that will meet the required environmental and other statutory standards, which we are obliged to comply with. We are working in parallel with our regulators and all stakeholders to see what interim solutions might be possible pending delivery of the enduring solution.			

### **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	2011	No	

### 5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2011

## 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: 22/07/2021

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**

Ambient Monitoring Results

Agglomeration/Licence No	EDEN code Station Reference	Entity	Entity Reference	Sampling Method	Date	pH	BOD	Ammonia	Total Nitrogen	Orthophosphate (as P)	DO	Temp
Mitchelstown Upstream (Ballyarthur Br)	RS18F050150	Funshion	18F03	Grab	20/02/2020	7.8	1.6	0.03	1.06	0.02	98	7.2
Mitchelstown Downstream (Killee Br)	RS18F050300	Funshion	18F03	Grab	20/02/2020	7.7	1.5	0.052	1.61	0.029	96.7	7.1
Mitchelstown Upstream (Ballyarthur Br)	RS18F050150	Funshion	18F03	Grab	12/03/2020	7.9	1.9	0.015	2	0.013	99.1	7.2
Mitchelstown Downstream (Killee Br)	RS18F050300	Funshion	18F03	Grab	12/03/2020	8	1.9	0.05	2.4	0.029	98.2	8
Mitchelstown Upstream (Ballyarthur Br)	RS18F050150	Funshion	18F03	Grab	28/05/2020	7.9	0.5	0.006	2.09	0.005	108.2	14.4
Mitchelstown Downstream (Killee Br)	RS18F050300	Funshion	18F03	Grab	28/05/2020	8.2	0.5	0.076	4.2	0.16	118	16.7
Mitchelstown Upstream (Ballyarthur Br)	RS18F050150	Funshion	18F03	Grab	09/07/2020	8	3	0.011	1.07	0.02	98.2	14
Mitchelstown Downstream (Killee Br)	RS18F050300	Funshion	18F03	Grab	09/07/2020	8.2	1.1	0.066	2.14	0.048	98	14.6
Mitchelstown Downstream (Killee Br)	RS18F050300	Funshion		Grab	13/08/2020	8	0.5	0.022	1.56	0.028	96	15
Mitchelstown Upstream (Ballyarthur Br)	RS18F050150	Funshion		Grab	13/08/2020	7.8	3.9	0.06	2.54	0.18	98	16
	Mean Upstream						2.18	0.0244		0.0476		
	Mean Downstream						1.1	0.0532		0.0588		
	EQS						1.5	0.065		0.035		