

# Annual Environmental Report

2019



Galway City

D0050-01

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# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0050-01, Galway City, in Galway 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.

Stage 2 of DAP will be completed this year 2020

## 1.2 TREATMENT SUMMARY

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

- GALWAY WWTP with a Plant Capacity PE of 170000, 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
TPEFF1100D0050SW001	GALWAY WWTP	Treated	Compliant	N/A

## 1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

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

## 2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

### 2.1 GALWAY WWTP - TREATED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - GALWAY 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
<b>BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l</b>	26	260	140.27
<b>Suspended Solids mg/l</b>	26	318	197.89
<b>COD-Cr mg/l</b>	26	611	349.15
<b>Total Phosphorus (as P) mg/l</b>	26	5.68	3.31
<b>Total Nitrogen mg/l</b>	26	34.7	18.58
<b>Hydraulic Capacity</b>	N/A	85200	57986

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 treatment 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 - TPEFF1100D0050SW001

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>COD-Cr mg/l</b>	125	250	N/A	26	0	0	25.8	Pass
<b>Suspended Solids mg/l</b>	35	87.5	N/A	26	0	0	7.95	Pass
<b>Total Nitrogen mg/l</b>	35	42	N/A	26	0	0	11.25	Pass
<b>BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l</b>	25	50	N/A	26	0	0	4.21	Pass
<b>Ammonia-Total (as N) mg/l</b>	25	30	N/A	26	0	0	0.93	Pass
<b>Total Oxidised Nitrogen (as N) mg/l</b>	20	24	N/A	26	0	0	9.73	Pass
<b>pH pH units</b>	9	9	N/A	26	0	0	7.57	Pass
<b>Faecal coliforms MPN/100ml</b>	N/A	N/A	N/A	2	N/A	N/A	4824.42	
<b>Conductivity @ 25°C (on-site) µS/cm</b>	N/A	N/A	N/A	8	N/A	N/A	N/A	

<b>Enterococci (Intestinal) cfu/100ml</b>	N/A	N/A	N/A	2	N/A	N/A	3934.7	
<b>E. Coli MPN/100ml</b>	N/A	N/A	N/A	2	N/A	N/A	8479.84	
<b>Total Phosphorus (as P) mg/l</b>	N/A	N/A	N/A	26	N/A	N/A	0.47	
<b>Conductivity 20 C µS/cm</b>	N/A	N/A	N/A	26	N/A	N/A	1802.33	
<b>Fats, Oils &amp; Greases mg/l</b>	N/A	N/A	N/A	1	N/A	N/A	5	

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 TPEFF1100D0050SW001

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 WDDL (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>							

No ambient monitoring sampling was carried out for Galway City WWTP. However, the results for additional monitoring data sets (Bathing Water Results) 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.

No ambient monitoring sampling was carried out.

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 - GALWAY WWTP

### 2.1.4.1 Treatment Efficiency Report - GALWAY 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)
<b>TP</b>	75164	11196	85
<b>SS</b>	4493038	187415	96



Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
<b>cBOD</b>	3184845	99127	97
<b>COD</b>	7927370	608016	92
<b>TN</b>	421861	265255	37

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

#### 2.1.4.2 Treatment Capacity Report Summary - GALWAY 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.

GALWAY WWTP	
<b>Peak Hydraulic Capacity (m<sup>3</sup>/day) - As Constructed</b>	135000
<b>DWF to the Treatment Plant (m<sup>3</sup>/day)</b>	45000
<b>Current Hydraulic Loading - annual max (m<sup>3</sup>/day)</b>	85200
<b>Average Hydraulic loading to the Treatment Plant (m<sup>3</sup>/day)</b>	57986
<b>Organic Capacity (PE) - As Constructed</b>	170000
<b>Organic Capacity (PE) - Collected Load (peak week)<sup>Note1</sup></b>	102278
<b>Organic Capacity (PE) - Remaining</b>	67722
<b>Will the capacity be exceeded in the next three years? (Yes/No)</b>	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 - GALWAY 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)
<b>Landfill Leachate (delivered by sewer network)</b>	78883	Volume (m3)	9605	0.3	Yes	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
3	Blocked Sewer	0	3

### 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)
Uncontrolled release	Other	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	No
Uncontrolled release	EO caused by pump failure	1	No	No

<b>Uncontrolled release</b>	SWO exceptional rainfall and overflow expected	1	No	Yes
<b>Uncontrolled release</b>	Other	1	No	Yes
<b>Abatement Equipment offline</b>	Plant or equipment breakdown at WWTP	1	No	Yes

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
<b>Number of Incidents in 2019</b>	6
<b>Number of Incidents reported to the EPA via EDEN in 2019</b>	6
<b>Explanation of any discrepancies between the two numbers above</b>	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
SW008	129685, 224768	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW017	126019, 223764	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
SW020	129643, 225523	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
SW003	125943, 223038	Yes	High	Not yet Assessed	Unknown	Unknown	Not Monitored
SW005	133296, 224746	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW006	137765, 224856	Yes	Low	Not yet Assessed	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
SW007	131369, 227422	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW018	128638, 224062	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW019	129780, 224754	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW021	131297, 225795	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW022	131201, 226069	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW023	132372, 224413	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
SW002	129581, 223202	Yes	Low	Not yet Assessed	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

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>D0050-SIP:08</b>	Upgrade to SWO -SD10	C	01/05/2014	Yes	Works Completed		
<b>D0050-SIP:09</b>	Upgrading of SWO02 Storm Water Overflow to comply with the criteria outlined in DoEHLG	C	01/09/2012	Yes	Works Completed		
<b>D0050-SIP:11</b>	Upgrading of SWO05 Storm Water Overflow to comply with the criteria outlined in DoEHLG	C	01/05/2014	Yes	At Planning Stage	31/12/2021	In DAP

<b>D0050-SIP:13</b>	Upgrading of SWO07 Storm Water Overflow to comply with the criteria outlined in DoEHLG	C	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:14</b>	Upgrading of SWO08 Storm Water Overflows to comply with the criteria outlined in DoEHLG	C	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:16</b>	Upgrading of SWO18 Storm Water Overflow to comply with the criteria outlined in DoEHLG	C	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:21</b>	Upgrading of SWO23 Storm Water Overflow to comply with the criteria outlined in DoEHLG	C	01/05/2014	Yes	Works Completed		
<b>D0050-SIP:01</b>	SW009 (SD09) to be discontinued	A	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:02</b>	SW011 (SD11) to be discontinued	A	21/12/2015	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:03</b>	SW012 (SD12) to be discontinued	A	01/05/2011	Yes	Works Completed		
<b>D0050-SIP:04</b>	SW013 (SD13) to be discontinued	A	21/12/2015	Yes	Works Completed		
<b>D0050-SIP:05</b>	SW014 (SD14) to be discontinued	A	01/05/2011	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>D0050-SIP:06</b>	SW015 (SD15) to be discontinued	A	01/05/2011	Yes	Works Completed		
<b>D0050-SIP:07</b>	WWTP upgrade and ancillary works	C	01/09/2012	Yes	Works Completed		
<b>D0050-SIP:10</b>	Upgrading of SWO03 Storm Water Overflow to comply with the criteria outlined in DoEHLG	C	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:12</b>	Upgrading of SWO06 Storm Water Overflow to comply with the criteria outlined in DoEHLG	C	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:15</b>	Upgrading of SWO17 Storm Water Overflow to comply with the criteria outlined in DoEHLG	C	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:17</b>	Upgrading of SWO19 Storm Water Overflow to comply with the criteria outlined in DoEHLG.	C	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:18</b>	Upgrading of SWO20 Storm Water Overflow to comply with the criteria outlined in DoEHLG.	C	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP

<b>D0050-SIP:19</b>	Upgrading of SWO21 Storm Water Overflow to comply with the criteria outlined in DoEHLG	C	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:20</b>	Upgrading of SWO22 Storm Water Overflow to comply with the criteria outlined in DoEHLG	C	01/05/2014	Yes	At Planning Stage	31/12/2016	In DAP
<b>D0050-SIP:22</b>	Replacement of stand-by pump at Parkavera Pumping Station SD04 emergency overflow	C	14/07/2010	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>D0050-IP:44</b>	Stage 2 of DAP will be completed this year 2020	Other	31/12/2020	

#### 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.

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	No

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

Signed:

Date: 18/03/2020

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**

Bathing Water Results: Ballyloughane Beach  
D0050 Galway City

Date	E-Coli Result	Intestinal Enterocci Result	Water Sample Status
10/09/2019	160	23	Excellent
09/09/2019	31	9	Excellent
26/08/2019	216	15	Excellent
19/08/2019	119	30	Excellent
12/08/2019	52	6	Excellent
29/07/2019	31	5	Excellent
22/07/2019	3130	520	Poor
15/07/2019	63	17	Excellent
08/07/2019	109	23	Excellent
01/07/2019	10	2	Excellent
24/06/2019	<10	6	Excellent
17/06/2019	243	130	Good
10/06/2019	<10	4	Excellent
04/06/2019	10	23	Excellent
30/05/2019	175	37	Excellent

Silverstrand Beach Bathing Water Results  
D0050 Galway City

Date	E-Coli Result	Intestinal Enterocci Result	Water Sample Status
09/09/2019	<10	2	Excellent
26/08/2019	<10	2	Excellent
12/08/2019	<10	2	Excellent
29/07/2019	<10	2	Excellent
15/07/2019	20	2	Excellent
01/07/2019	<10	2	Excellent
17/06/2019	108	62	Excellent
04/06/2019	<10	3	Excellent
30/05/2019	31	6	Excellent



Bathing Water Results: Grattan Road Beach  
D0050 Galway City

Date	E- Coli Result	Intestinal Enterocci Result	Water Sample Status
09/09/2019	175	15	Excellent
02/09/2019	203	34	Excellent
26/08/2019	288	150	Good
19/08/2019	63	8	Excellent
12/08/2019	31	11	Excellent
29/07/2019	63	9	Excellent
22/07/2019	677	170	Sufficient
15/07/2019	52	11	Excellent
08/07/2019	85	31	Excellent
01/07/2019	<10	2	Excellent
24/06/2019	10	9	Excellent
17/06/2019	464	173	Good
10/06/2019	30	10	Excellent
04/06/2019	52	57	Excellent
30/05/2019	441	25	Good