Annual Environmental Report

2018

Dungarvan

D0017-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0017-01, Dungarvan, in Waterford in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports are included as an appendix to the AER as follows:

1.1 Licence specific reporting included in AER

Assessment / Report	Included in AER

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant Dungarvan (Waterford County) WWTP with a Plant Capacity PE of 25000. The treatment process includes the following:

1.2.1 Dungarvan (Waterford County) WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Screening
Primary Treatment	No	
Secondary Treatment	Yes	Conventional Activated Sludge
Nutrient Removal	No	
Tertiary Treatment	No	

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 2.2 Discharges from the agglomeration.

1.3 ELV Overview

1.3.1 Dungarvan (Waterford County) WWTP

Compliance Status	
Were all parameters compliant for Dungarvan (Waterford County) WWTP treatment plant	Yes
Where noncompliant see table 2.2.1 for details of parameters	

1.4 Sludge Removal

The amount of sludge removed from the wastewater treatment plant is shown below along with the transported destination of the sludge from the treatment plant.

Treatment Plant	Sludge type	Quantity	Unit	% Dry Solids	Destination
Dungarvan (Waterford County) WWTP	Cake Sludge	299.55	Weight (Tonnes)	18.62	H&L Environmental Services Ltd.
Dungarvan (Waterford County) WWTP	Cake Sludge	13.84	Weight (Tonnes)	18.41	James Byrne, Uppergrange, Gowran, Co. Kilkenny
Dungarvan (Waterford County) WWTP	Cake Sludge	23.55	Weight (Tonnes)	18.47	M&T Plant Hire Ltd
Dungarvan (Waterford County) WWTP	Cake Sludge	34.8	Weight (Tonnes)	19.19	Molaisin Compost Ltd.

Annual Statement of Measures

New [more efficient] pumps were installed in Shandon & Fr. Twomeys Pump Stations during 2018. A Drainage Area Plan is underway for Dungarvan, surveying works to commence in Q1 2019.

2 MONITORING REPORTS SUMMARY

2.1 Summary report on monthly influent monitoring

A summary of influent monitoring for the treatment plant is presented in below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

2.1.1 Influent Monitoring Summary - Dungarvan (Waterford County) WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
Total Phosphorus (as P) mg/l	12	4.44	2.55
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	289	120.08
Suspended Solids mg/l	12	328	147.08
Total Nitrogen mg/l	12	21.6	8.83
COD-Cr mg/l	12	615	334.07
Hydraulic Capacity	0	14492	10925

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 3.5 if applicable

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2. 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 Discharges from the agglomeration

2.2.1 Effluent Monitoring Summary - Dungarvan (Waterford County) WWTP

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedences	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Total Phosphorus (as P) mg/l	0	0	0	12	0	0	1.51	Pass
Ammonia-Total (as N) mg/l	10	12	0	12	0	0	2.03	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	12	0	0	1.64	Pass
Enterococci (Intestinal) MPN/100ml	0	0	0	12	0	0	4905.16	Pass
Total Oxidised Nitrogen (as N) mg/l	10	12	0	12	0	0	4.82	Pass
Chloride mg/l	0	0	0	1	0	0	1740	Pass
COD-Cr mg/l	125	250	0	12	0	0	36.36	Pass
pH pH units	0	0	0	12	0	0	7.24	Pass
Faecal coliforms no./100mls	0	0	0	12	0	0	3723646.87	Pass
Total Nitrogen mg/l	0	0	0	1	0	0	0	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 exceedences	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
E. Coli no./100mls	0	0	0	12	0	0	633946	Pass
Suspended Solids mg/l	35	87.5	0	12	0	0	11.6	Pass
ortho-Phosphate (as P) - unspecified mg/l	0	0	0	12	0	0	1.14	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

Cause of Exceedance(s):

Not Applicable

Significance of Results:

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

2.3 Ambient monitoring summary

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.

2.3.1 Ambient Monitoring Report Summary - Dungarvan (Waterford County) WWTP

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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	230478, 91653	TPEFF3100D0017SW001	Yes	No	No	No	High
Downstream	230813, 90798	TPEFF3100D0017SW001	Yes	No	No	No	High

2.3.2 Ambient Monitoring Parameter Summary - Dungarvan (Waterford County) WWTP

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 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.

Other Potential cause of deterioration in water quality relevant to this area are: None

3 OPERATIONAL REPORTS SUMMARY

3.1 Treatment Efficiency Report

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:

3.1.1 Treatment Efficiency Report Summary - Dungarvan (Waterford County) WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
COD	1326323.74	144663.01	89.09	
SS	583935.18	46180.2	92.09	
TP	11062.77	5989.82	45.86	
cBOD	476738.91	6509.26	98.63	

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

3.2 Treatment Capacity Report Summary

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.

Dungarvan (Waterford County) WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	14760
DWF to the Treatment Plant (m3/day)	4920

Dungarvan (Waterford County) WWTP	
Current Hydraulic Loading - annual max (m3/day)	14492
Average Hydraulic loading to the Treatment Plant (m3/day)	10925
Organic Capacity (PE) - As Constructed	25000
Organic Capacity (PE) - Collected Load (peak week)	19954
Organic Capacity (PE) - Remaining	5046
Will the capacity be exceeded in the next three years? (Yes/No)	No

3.3 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
15	Blocked Sewer	0	15

3.4 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.

3.4.1 Summary of Incidents

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	EO caused by pump failure	2	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	Other	1	No	Yes
Uncontrolled release	Plant or equipment maintenance at WWTP	1	No	No
Uncontrolled release	SWO Exceptional rainfall	24	Yes	No

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	5
Number of Incidents reported to the EPA via EDEN in 2018	5
Explanation of any discrepancies between the two numbers above	

3.5 Sludge / Other inputs to the 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)?[3]	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP?[2](Y/N)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

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:

No Appendix Included

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 2018 (No. of events)	Total volume discharged in 2018 (m3)	Monitoring Status
SW16	225660, 93321	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW17	226239, 93116	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW18	226108, 92714	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW19	226615, 92807	Yes	Low	Not Meeting	Unknown	Unknown	Not Monitored
SW4	225026, 92513	No	Low	Not Meeting	Unknown	Unknown	Not Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
Is each SWO identified as non 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 / charges 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)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
Discharge from SW20 (Kilminnin North) to be discontinued	A	01/11/2011	Yes	Works Completed		
Implement a programme of works to ensure SW2 only discharge in the event of an emergency, that is, during pump failure at the associated pumping station (see Condition 5.6)	C	01/01/2011	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
Implement a programme of works to ensure SW3 only discharge in the event of an emergency, that is, during pump failure at the associated pumping station (see Condition 5.6)	C	01/01/2011	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis
SW16 - Upgrading of sewer network, as required, to ensure Storm Water Overflows comply with the criteria outlined in the DoEHLG	C	01/11/2011	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis
SW17 - Upgrading of sewer network, as required, to ensure Storm Water Overflows comply with the criteria outlined in the DoEHLG	C	01/11/2011	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis
SW18 - Upgrading of sewer network, as required, to ensure Storm Water Overflows comply with the criteria outlined in the DoEHLG	C	01/11/2011	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis
SW19 - Upgrading of sewer network, as required, to ensure Storm Water Overflows comply with the criteria outlined in the DoEHLG	C	01/11/2011	Yes	Not Started		The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis

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	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 (e.g. Appendix X).
Priority Substances Assessment	Yes	2014	No	

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?	Yes
List reason e.g. additional SWO identified	SW4 not included in the Licence
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	No
List reason e.g. changes to monitoring requirements	
Have these processes commenced?	No
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: 15/03/2019

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 ,

Eleanor Roche

Acting Head of Environmental Regulation.

7 APPENDIX

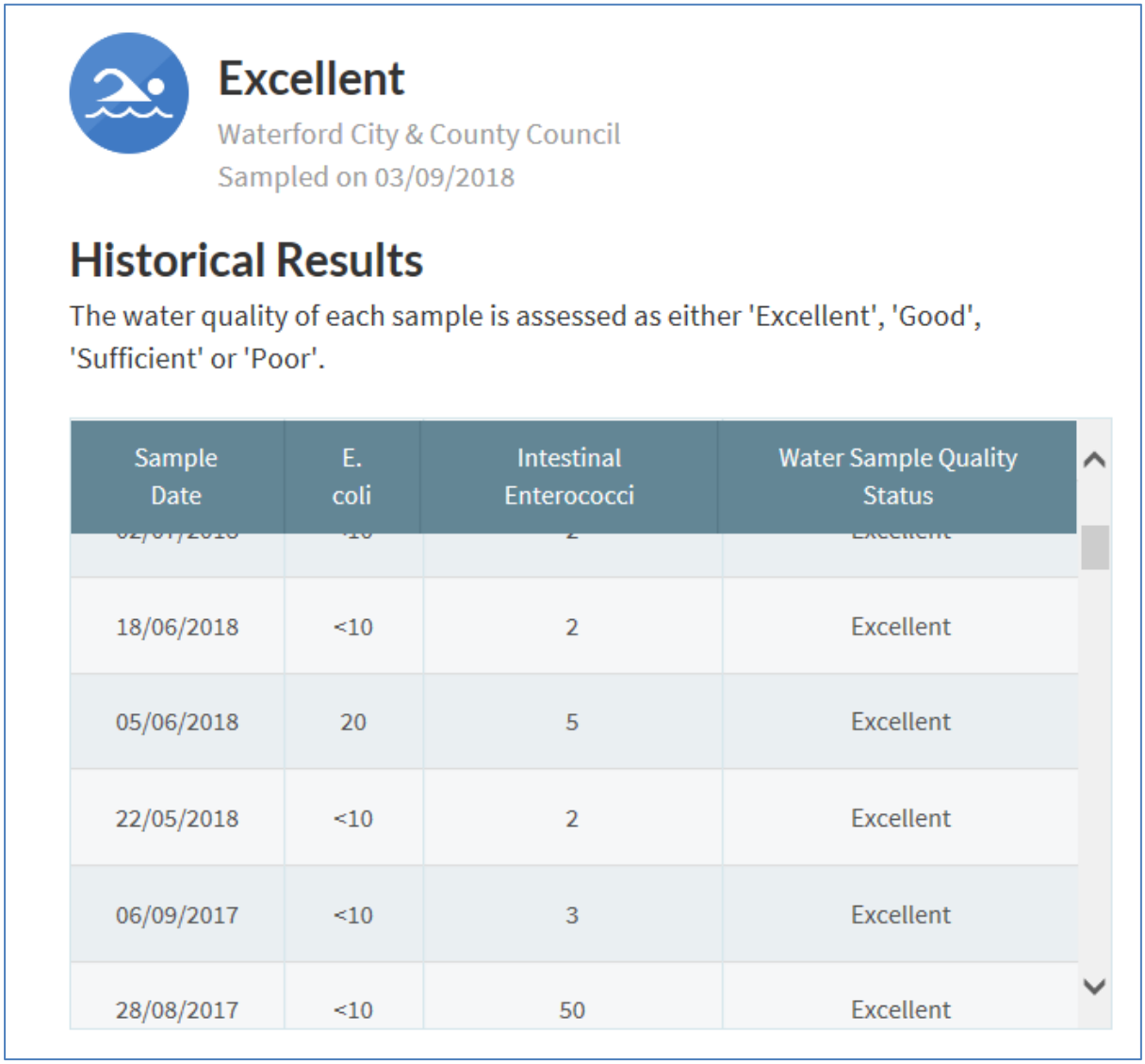
In the appendix include all the detailed or site specific reports that are relevant to the AER. Reports omitted from previous AERs should also be appended here.

Appendix
Appendix 7.1 - Ambient monitoring summary

Appendix 7.2 - Ambient Monitoring Summary

The WWDL has not specified Ambient Monitoring Locations.

Clonea Beach is located to the North of the WWTP Discharge Point, the beach retained its Blue Flag Status in 2018.



Excellent

Waterford City & County Council

Sampled on 03/09/2018

Historical Results

The water quality of each sample is assessed as either 'Excellent', 'Good', 'Sufficient' or 'Poor'.

Sample Date	E. coli	Intestinal Enterococci	Water Sample Quality Status
18/06/2018	<10	2	Excellent
05/06/2018	20	5	Excellent
22/05/2018	<10	2	Excellent
06/09/2017	<10	3	Excellent
28/08/2017	<10	50	Excellent

https://www.beaches.ie/find-a-beach/#/beach/IESEBWC140_0000_0100

The EPA monitoring data gathered as part of the Water Framework Directive monitoring programme for Transitional and Coastal Waters (TraCs) has been assessed to determine potential impact of the Dungarvan WWTP on water quality.

EPA Monitoring data for 2017 for station CG250 (approx. 350m upstream of the primary discharge) and station CG260 (approximately 550m downstream of the primary discharge) is presented in Table 1 and Table 2.
Assessment of parameters indicate compliance with the quality standards for Good Status waters as prescribed in the European Communities Environmental Objectives (Surface Waters) Regulations 2009 for coastal waters:

- Temperature:- Not greater than a 1.5°C rise in ambient temperature
- DO:- 95%ile > 70% and 95%ile <130%
- BOD: No EQS prescribed
- MRP: No EQS prescribed
- DIN:-Linear interpolation to be used to establish the limit value for water bodies between these salinity levels based on the median salinity of the water body being assessed. A DIN limit of 0.29 mg N/l has been established based on a median salinity concentration of 34psu.

There is no indication that the effluent discharge from the Dungarvan WWTP is impacting on water quality such that the objectives of the Water Framework are not met.

Table 7.2.1: EPA Monitoring (CG250) 2017 approx. 350m west of discharge

EDEN_Code	Station No	Survey Date	Depth Bed	Sample Depth	Salinity S ‰	Temp S °C	pH	DO S % Sat	B.O.D. mg/l O	TON mg/l N	NH3 mg/l N	PO4 µg/l P	DIN mg/l N	Lab
CW31002108CG2002	CG250	19/01/2017	8	0	33.83	9	8	98.6	0.5	0.11	0.012	12	0.122	EPA Dublin
CW31002108CG2002	CG250	19/01/2017	8	7.3	33.82	8.99	8	99.3	0.5	0.11	0.012	12	0.122	EPA Dublin
CW31002108CG2002	CG250	31/05/2017	8	0	33.98	13.6	8.2	101.6	0.5	0.005	0.031	2.5	0.036	EPA Dublin
CW31002108CG2002	CG250	31/05/2017	8	7.2	24.11	13.03	8	100.2	0.5	0.005	0.038	2.5	0.043	EPA Dublin
CW31002108CG2002	CG250	27/06/2017	7	6.5	34.05	14.22	8.1	106	0.5	0.005	0.018	2.5	0.023	EPA Dublin
CW31002108CG2002	CG250	27/06/2017	7	0	34.02	14.26	8.1	106.1	0.5	0.005	0.018	2.5	0.023	EPA Dublin

Table 7.2.2: EPA Monitoring (CG260) 2014 approx. 550m south of discharge

EDEN_Code	Station No	Survey Date	Depth Bed	Sample Depth	Salinity S ‰	Temp S °C	pH	DO S % Sat	B.O.D. mg/l O	TON mg/l N	NH3 mg/l N	PO4 µg/l P	DIN mg/l N	Lab
CW31002108CG2003	CG260	19/01/2017	10.5	0	33.9	8.94	8	98.1		0.075	0.011	7.4	0.086	EPA Dublin
CW31002108CG2003	CG260	19/01/2017	10.5	10	33.9	8.93	8	97.4		0.075	0.011	7.4	0.086	EPA Dublin
CW31002108CG2003	CG260	31/05/2017	10.3	0	33.81	14.22	8.1	102.2	0.5	0.013	0.044	2.5	0.057	EPA Dublin
CW31002108CG2003	CG260	31/05/2017	10.3	9.8	34.21	12.92	8.1	100.6	0.5	0.005	0.041	2.5	0.046	EPA Dublin
CW31002108CG2003	CG260	27/06/2017	10	9.3	34.15	13.77	8.1	102.9		0.005	0.018	2.5	0.023	EPA Dublin
CW31002108CG2003	CG260	27/06/2017	10	0	34.12	14.05	8.1	104.6		0.005	0.018	2.5	0.023	EPA Dublin