

# Annual Environmental Report

2019



Ringsend

D0034-01

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# 1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2019 AER

This Annual Environmental Report has been prepared for D0034-01, Ringsend, in County Dublin in accordance with the requirements of the wastewater discharge licence for the agglomeration.

The Greater Dublin Area Agglomeration comprises the geographical area of Dublin City Council and sections of the functional areas of:

- Fingal County Council
- South Dublin County Council
- Dun Laoghaire Rathdown County Council
- Meath County Council

## 1.1 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

## 1.2 TREATMENT SUMMARY

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

- Ringsend WWTP with a Plant Capacity PE of 1640000, 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
TPEFF0700D0034SW001	Ringsend WWTP	Treated	Non-Compliant	BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l COD mg/l TSS mg/l Total Phosphorus (as P) mg/l Total Nitrogen mg/l E.coli

The effluent parameters pH and Toxicity complied with the ELVs during 2019.

## 1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
Priority Substances Assessment	Yes - Appendix 7.2
Toxicity/Leachate Management	Yes - Appendix 7.3
Toxicity of Final Effluent	Yes - Appendix 7.4

## 2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

### 2.1 RINGSEND WWTP - TREATED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - RINGSEND 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
COD-Cr mg/l	247	1913	508.72
Total Phosphorus (as P) mg/l	102	9.26	5.01
Total Nitrogen mg/l	102	63.6	37.84
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	145	594	262.66
Suspended Solids mg/l	247	1428	254.94
Hydraulic Capacity	N/A	868,784	468,235

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 - RINGSEND WWTP

	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Total P (mg/l)	Total N (mg/l)	pH	Toxicity (TU)	Comment
WWDL ELV ( <i>Schedule A</i> )	25	125	35	1	10	6-9	5	
ELV with Condition 2 Interpretation included	50	250	87.5	1.2	12.0	-	-	
Number of sample results	142 **	247***	247***	102 *	102*	245***	1	
Number of sample results above WWDL ELV	97	90	218	102	102	0	0	Composite samples taken except for toxicity
Number of sample results above ELV with Condition 2 Interpretation included	29	26	67	102	99	0	0	Composite samples taken except for toxicity
Annual Mean (for parameters where a mean ELV applies)	N/A	N/A	N/A	3.73	20.49	N/A	N/A	
Overall Compliance (Pass/Fail)	<b>Fail</b>	<b>Fail</b>	<b>Fail</b>	<b>Fail</b>	<b>Fail</b>	Pass	Pass	

\*96-110 samples therefore 9 non-complaint results allowed of the lower tier ELV, once the max ELV is breached then all exceedances thereafter are reportable.

\*\*141-155 samples therefore 12 non-complaint results allowed of the lower tier ELV, once the max ELV is breached then all exceedances thereafter are reportable.

\*\*\*236-251 samples therefore 18 non-complaint results allowed of the lower tier ELV, once the max ELV is breached then all exceedances thereafter are reportable.

Table 2.1.2 *continued* - Effluent Monitoring Summary

	DIN (mg/l N)	Ammonia (mg/l N)	Ortho- Phosphate (mg/l P)	OFG (mg/l)	E.coli (MPN/100ml)	Enterococci (CFU/100 ml)	Colour (Hazen)	Comment
WWDL ELV ( <i>Schedule A</i> )	-	-	-	-	100,000	-	-	
ELV with Condition 2 Interpretation included	-	-	-	-	120,000	-	-	
Number of sample results	246	246	246	102	63*	48	247	*Licence specifies 1 <sup>st</sup> May to 31 <sup>st</sup> August for E. Coli compliance
Number of sample results above WWDL ELV/not achieving min % reduction	-	-	-	-	1	0	-	Composite sample taken for chemistry parameters
Number of sample results above ELV with Condition 2 Interpretation included	-	-	-	-	1	0	-	
Annual Mean (for parameters where a mean ELV applies)								
Overall Compliance (Pass/Fail)	N/A	N/A	N/A	N/A	<b>Fail**</b>	N/A	N/A	** 1 sample exceeded 120,000 MPN/100ml during the specified period (01/05/19 - 31/08/19)

**Cause of Exceedance(s):**

The non-compliances were due to overloading.

**Significance of Results:**

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There were 97 samples non-compliant with the ELV in relation to cBOD. The non-compliance is due to overloading. There were 90 samples non-compliant with the ELV in relation to COD. The non-compliance is due to

overloading. There were 218 samples non-compliant with the ELV in relation to TSS. The non-compliance is due to overloading. There were 102 samples non-compliant with the ELV for TP. The non-compliance was due to no P removal treatment on site. There were 102 samples non-compliant with the ELV for TN. The non-compliance was due to overloading. The WWTP effluent was compliant with the pH and Toxicity ELVs set in the wastewater discharge licence. The WWTP was non-compliant with the ELV set in the wastewater discharge licence for Faecal Coliforms (E. Coli) monitored during the specified period 01/05/19 to 31/08/19 (1 breach). The breach of the Condition 2 ELV occurred on the 12/06/2019 (129,970 MPN/100ml). The impact on receiving waters is assessed further in Section 2.1.3.

### 2.1.3 AMBIENT MONITORING SUMMARY - RINGSEND 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	EPA Feature Coding Tool code	Receiving Waters Designation (Yes)				WFD Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
Upstream monitoring point	<b>Liffey U/S Islandbridge</b>	Unknown	No	No	No	No	Moderate	n/a The River Liffey U/S Islandbridge is freshwater and cannot be impacted by estuarine receiving waters.
Downstream monitoring points	<b>Liffey Estuary Upper</b>	Unknown	No	No	No	No	Good	Yes Impacts in the near field and the plume of the sewage discharge – See Sections below.  Liffey Estuary tidal
Downstream monitoring points	<b>Liffey Estuary Lower</b>	Unknown	No	No	No	No	Good	Yes Impacts in the near field and the plume of the sewage discharge – See Section 2.1.3.1 below.  Liffey Estuary tidal

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Receiving Waters Designation (Yes)				WFD Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
Downstream monitoring points	<b>Tolka Estuary</b>	Unknown	No	No	No	No	Moderate	Yes Impacts of the sewage discharge plume. and the Tolka River inflow – see reports below. Tolka Estuary tidal.
Downstream monitoring points	<b>Dublin Bay</b>	Unknown	No	No	No	No	Good	No See Section 2.1.3.1 below.
Downstream monitoring points	<b>Bathing Waters</b>  Dollymount Bathing Zone  Sandymount  Merrion	Unknown	<b>Yes</b>	No	No	No	<b>(2019 EPA Bathing Water Status)</b>  <b>Good</b>  <b>Poor</b>  <b>Poor</b>	  See Section 2.1.3.1 below.  Investigations Ongoing.  Investigations Ongoing.

### 2.1.3.1 AMBIENT MONITORING PARAMETER SUMMARY-RINGSEND WWTP

The results for ambient results and additional monitoring data sets are included in the **Appendix 7.1 - Ambient Monitoring Summary**.

#### Significance of Results:

- The WWTP was non-compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.1.2.
- The discharge from the wastewater treatment plant does have an observable negative impact on the water quality in the near field of the discharge and in the Liffey and Tolka Estuaries.
- The discharge from the wastewater treatment plant does have an observable negative impact on the Water Framework Directive status.
- Other potential causes of deterioration in water quality relevant to this area are upstream riverine pollutants, combined sewer overflows, exfiltration from sewers and misconnections to surface water sewers in the agglomeration.

Licence D0034-01 requires monitoring and assessment of the impacts of the Ringsend effluent discharge on receiving water quality at agreed sampling locations as follows:

- 9 Ambient Surface Waters (**ASW2 – ASW10**) covering sampling points in the lower Liffey Estuary in the near field of the discharge (**ASW2 to ASW5**), and points on the River Liffey and River Tolka (**ASW6 to ASW10 - Surface and Depth samples**)
- 11 additional monitoring points on the Liffey and Tolka Estuaries (**DB 020 to DB 420 – Surface, Depth and Composite samples**)
- 9 monitoring locations in Dublin Bay (**DB 430 to DB 610 – Surface, Depth and Composite samples**)
- 8 shoreline locations, 3 of which are EC designated bathing waters - Dollymount Bathing Zone, Sandymount and Merrion Strands (**ASW 11 to ASW 18**)

See map of monitoring locations agreed with the EPA in **Appendix 7.1.1**.

See all monitoring data for 2019 in **Appendix 7.1**.

The Liffey Estuary from Islandbridge Weir to the Poolbeg Lighthouse including the River Tolka Basin and the South Bull Lagoon is designated as a “sensitive area” by Part 2, Schedule 3, of the Urban Wastewater Regulations, S.I. No. 254 of 2001. The European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009), sets physico-chemical standards for High and Good status in transitional and coastal water bodies to be complied with outside the allocated mixing zone of a licensed discharge.

The Rivers Liffey and Tolka and their estuaries are classified under the Water Framework Directive as Transitional Water Bodies. The outer estuary / Dublin Bay is classified as a Coastal Water Body.

The parameter suite set in the marine monitoring section of the licence was tested in all samples (Temperature / Dissolved Oxygen / BOD / Salinity / Dissolved Inorganic Nitrogen / Total Oxidised Nitrogen / Molybdate Reactive Phosphate / Ammonia / Silica / Chlorophyll).

Tidal Conditions during the 6 monthly estuarine surveys in 2019 are tabulated below:

Survey No. and Month 2019	Date	High Tide Time	Height (m OD)	Low Tide Time	Height (m OD)	Tidal Status during Survey
1. April	18/04/19	11.39	4.13	05.00	0.60	Flow to High
2. May	15/05/19	09.35	3.83	15.30	0.60	High to Mid-Ebb
	16/05/19	10.33	3.96	16.22	0.46	High to Mid-Ebb
3. June	12/06/19	08.06	3.81	14.04	0.80	High to Ebb
	13/06/19	09.12	3.85	15.06	0.77	High to Mid-Ebb
4. July	10/07/19	06.31	3.89	12.31	0.84	Mid-Ebb to Ebb
	11/07/19	07.42	3.81	13.36	0.95	High to Ebb
5. August	28/08/19	10.18	3.78	16.20	0.95	High to Mid-Ebb
	29/08/19	11.30	3.98	17.06	0.70	Mid-Flow to Mid-Ebb
6. September	11/09/19	11.19	3.64	16.45	1.21	Mid-Flow to Mid-Ebb
	25/09/19	09.29	3.56	15.11	1.27	High to Mid-Ebb

### 2.1.3.1.1 Marine Monitoring Summary – ASW2 to ASW10

A total of 6 surveys were carried out in the Liffey and Tolka Estuaries during 2019 at the designated locations in the licence, tabulated below:

EPA Map Code	Licence Code	Sampling Point
		<b>Liffey Estuary Lower</b>
	ASW2	25 metres North of Poolbeg Wall
	ASW3	50 metres North of Poolbeg Wall
	ASW4	75 metres North of Poolbeg Wall
	ASW5	100 metres North of Poolbeg Wall
		<b>Liffey</b>
DB000	ASW6	Liffey City, Downstream Islandbridge Weir
DB010	ASW7	Liffey City, Heuston Station, Upstream of Camac Outfall
	ASW8	Liffey City, Winetavern Street Bridge
		<b>Liffey Estuary Lower</b>
DB210	ASW9	Liffey (Surface), Downstream of East Link Toll Bridge
		<b>Tolka</b>
DB310	ASW10	Tolka, Downstream of Annesley Bridge

A summary of transitional water quality compliance with S.I. No. 272 of 2009 for the above locations is presented below and complete water quality data is presented in **Appendix 7.1.2**.

This shows compliance with temperature, dissolved oxygen (lower) and dissolved oxygen (upper) at all locations on all survey dates.

All BOD values were compliant with transitional water quality on all dates except for:

**ASW 2S** – BOD value was >7mg/l O<sub>2</sub> on 18/04/19, >6 mg/l O<sub>2</sub> on 13/06/19 and >6 mg/l O<sub>2</sub> on 28/08/19.

**ASW 3S** – BOD value was 5 mg/l O<sub>2</sub> on 24/08/19.

ASW 2S and 3S are in the near field of the Ringsend WWTP discharge point.

Five exceedances of Molybdate Reactive Phosphate (MRP) standards occurred in the near field of the Ringsend discharge at ASW2, ASW3, ASW4 and ASW5.

One exceedance of Molybdate Reactive Phosphate (MRP) standards occurred at ASW 10 in the Tolka D/S Annesley Bridge.

The non-compliant median MRP results were as follows:

Location	MRP 2019 Median Result	S.I. No. 272 Standard	Comment
		60 ug/l as P (median) at 0-17% PSU to 40 ug/l as P (median) at 35% PSU	
ASW2 (Surface)	393 ug/l as P		Close to SW1 Outfall within the Mixing Zone
ASW2 (Depth)	61 ug/l as P		Close to SW1 Outfall within the Mixing Zone
ASW3 (Depth)	202 ug/l as P		Close to SW1 Outfall within the Mixing Zone
ASW4 (Surface)	100 ug/l as P		Close to SW1 Outfall within the Mixing Zone
ASW5 (Surface))	46 ug/l as P		Close to SW1 Outfall within the Mixing Zone
ASW10 (Surface)	80 ug/l as P		Outside the Mixing Zone Upstream River Pollution

### 2.1.3.1.2 Marine Monitoring – Transitional Water Monitoring – Points Agreed with the EPA (DB 020 to DB 420)

A total of 6 surveys were carried out in the Liffey and Tolka Estuaries during 2019, at 11 locations agreed with the EPA, tabulated below:

EPA Map Code	Sampling Point
	<b>Liffey Estuary Upper</b>
DB 020	Matt Talbot Bridge
	<b>Liffey Estuary Lower</b>
DB 120	Dodder / Grand Canal Basin
DB 210	East Link Toll Bridge
DB 220	RO RO Ramp No.5 (Old Treatment Works Outfall)
DB 410	Ringsend Cascade
DB 420	Poolbeg Lighthouse
	<b>Tolka</b>
DB 300	Upstream of Drumcondra Bridge
	<b>Tolka Estuary</b>
DB 320	East Point Business Park Bridge
DB 330	Castle Avenue
DB 340	Clontarf Boat Club
DB 350	South Lagoon at Bull Wall Wooden Bridge

A summary of transitional water quality compliance with S.I. No. 272 of 2009 for the above locations is presented below and complete water quality data is presented in **Appendix 7.1.3**.

This shows full compliance with BOD, Temperature, Dissolved Oxygen (upper and lower) and Median Reactive Phosphorus (MRP) at all locations, on all survey dates except those detailed below.

BOD Saline results exceeded the limit of 4 mg/l O<sub>2</sub> at:

- **DB 120 (Depth)** on 15/05/19 (**5 mg/l O<sub>2</sub>**).  
DB 120 is in the estuarine near field of the Ringsend WWTP discharge point.
- **DB 320 (Surface)** on 13/06/19 (**6 mg/l O<sub>2</sub>**)

- **DB 320 (Depth)** on 15/05/19 (**6 mg/l O<sub>2</sub>**).  
DB 320 is subject to upstream riverine pollution and may on occasion be subject to the Ringsend WWTP discharge plume.

14 Molybdate Reactive Phosphate (MRP) median exceedances occurred at **10** locations as follows:

Location	MRP 2019 Median Result	S.I. No 272 Standard	Comment
	<b>Liffey Estuary</b>	< 40ug/l P(med) < 60 ug/l P (med)	
DB020 (Depth)	<b>53 ug/l P</b>		SW1 Discharge and riverine impacts
DB120 (Depth)	<b>47 ug/l P</b>		SW1 Discharge and riverine impacts
DB210 (Depth)	<b>43 ug/l P</b>		SW1 Discharge and riverine impacts
DB410 (Surface)	<b>204 ug/l P</b>		SW1 Discharge
DB420 (Composite)	<b>47 ug/l P</b>		SW1 Discharge and riverine impacts
	<b>Tolka Estuary</b>		
DB300 (Surface)	<b>61 ug/L P</b>		Riverine impacts
DB320 (Surface)	<b>86 ug/l P</b>		SW1 Discharge and riverine impacts
DB320 (Depth)	<b>121 ug/l P</b>		SW1 Discharge and riverine impacts
DB330 (Surface)	<b>112 ug/l P</b>		SW1 Discharge and riverine impacts
DB330 (Depth)	<b>76 ug/l P</b>		SW1 Discharge and riverine impacts
DB330 (Composite)	<b>96 ug/l P</b>		SW1 Discharge and riverine impacts
DB340 (Surface)	<b>71 ug/l P</b>		SW1 Discharge and riverine impacts
DB340 (Depth)	<b>48 ug/l P</b>		SW1 Discharge and riverine impacts
DB350 (Composite)	<b>69 ug/l P</b>		SW1 Discharge and riverine impacts

### 2.1.3.1.3 Marine Monitoring – Dublin Bay, 2019- Points Agreed with the EPA

A total of 4 surveys were carried out at 9 locations in Dublin Bay during 2019. These locations – 6 coastal waters and 3 Irish Sea locations (\*), as agreed with the EPA, are tabulated below:

See map in **Appendix 7.1.1**. All monitoring data is included in **Appendix 7.1.4**.

EPA Map Code	Coastal Water Sampling Points
	Dublin Bay
DB 610	Off Bailey Lighthouse, Howth
DB 430	1 km. NE Poolbeg Lighthouse
DB 450	South Bull Buoy, 1 km. SE Poolbeg Lighthouse
DB 510*	2.5 km. ENE Poolbeg Lighthouse
DB 540*	2.5 km. SSE Poolbeg Lighthouse
DB 550	No.4 Buoy, 2.5 km. E of S Poolbeg Lighthouse
DB 560	Drumleck Point, Howth, 5 km. ENE Poolbeg Lighthouse
DB 570*	5 km. ESE Poolbeg Lighthouse
DB 580	Dun Laoghaire, 5 km. E of S Poolbeg Lighthouse

These locations were sampled at surface (S) and depth (D) only when the Salinity varied on the recommendation of the EPA. Composite samples (C) were taken at all other times.

A summary of coastal water quality compliance with S.I. No. 272 of 2009 for the above locations is presented below and complete water quality data is presented in **Appendix 7.1.4**.

Monitoring data for 2019 shows full compliance with temperature, dissolved oxygen (lower) and dissolved oxygen (upper).

The median chlorophyll High to Good limit (cold acetone extraction < 2.5 ug/l) was complied with at all 9 sampling locations in 2019.

The Dissolved Inorganic Nitrogen (DIN) standards for coastal waters (High Status) were complied with at 5 of the sampling locations on all survey dates.

4 DIN exceedances occurred on one date (29/08/19) as follows :

- **DB 510\*** : DIN concentration (264 ug/l) in Composite Sample taken on 29/08/19.

- **DB 550** : DIN concentration (394 ug/l) in Composite Sample taken on 29/08/19.
- **DB 570\*** : DIN concentration (327 ug/l) in Composite Sample taken on 29/08/19.
- **DB 580** : DIN concentration (384 ug/l) in Composite Sample taken on 29/08/19.

There were **no other impacts** on regulated coastal and Irish Sea water quality during the period when surveys were carried out in 2019.

#### **2.1.3.1.4 Shoreline Monitoring – 2019 Bathing Season**

Bathing Water is currently regulated by the Bathing Water Quality Regulations, 2008 (S.I. No.79 of 2008) and Bathing Water Quality (Amendment) Regulations 2011 (S.I. No. 351 of 2011).

Shoreline sampling was carried out at 8 locations during the 2019 bathing season:

- |  |                                   |
|--|-----------------------------------|
| • ASW 11 - Dollymount North,               | Shoreline Sampling Location       |
| • <b>ASW 12 - Dollymount Bathing Zone*</b> | <b>Designated bathing area</b>    |
| • ASW 13 - Dollymount South                | Shoreline Sampling Location       |
| • ASW 14 - Bull Wall Wood Causeway         | Shoreline Sampling Location       |
| • ASW 15 - Poolbeg Outfall (Main)          | Final effluent discharge location |
| • ASW 16 - Half Moon Club Southside        | Shoreline Sampling Location       |
| • <b>ASW 17 – Sandymount Strand*</b>       | <b>Designated bathing area</b>    |
| • <b>ASW 18 – Merrion Strand*</b>          | <b>Designated bathing area</b>    |

A summary of bathing water quality compliance for the above locations, three of which are **designated\*** is presented below and complete water quality data is presented in **Appendix 7.1.5**.

#### **In Summary:**

Bathing water status has been determined by the EPA for the year 2019. The Status of the different designated locations is also available on the EPA website ([www.beaches.ie](http://www.beaches.ie)).

Note the widespread occurrence of Ectocarpus at ASW 11, 12, 13, the 3 Dollymount sampling locations.

Designated bathing water at Dollymount (Bathing Zone) was allocated GOOD status in 2019 by the EPA.

Designated bathing waters at Sandymount and Merrion were allocated POOR status in 2019. Investigative monitoring is ongoing.

Site Location	ASW 12	ASW 17	ASW 18
No. of samples (non-investigative)	19	19	19
2019 Annual Status	Good	Poor	Poor

The remaining 5 locations are not designated bathing waters.

Monitoring data for non-designated bathing waters between 04/06/19 and 11/09/19 is included in **Appendix 7.1.5**.

#### 2019 - Non-Designated Bathing Waters: Single Sample Status Assessment Criteria

Parameter	Excellent	Good	Sufficient	Poor
IE (Intestinal Enterococci) cfu/100ml	≤100	101-200	201-250	>250
EC (E.coli) cfu (mpn)/100ml	≤250	251-500	501-1000	>1000

## 2.1.4 OPERATIONAL PERFORMANCE SUMMARY - RINGSEND WWTP

### 2.1.4.1 Treatment Efficiency Report - Ringsend 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>cBOD</b>	46,332,516.66	7,234,111.57	84.39
<b>COD</b>	89,494,536.64	24,390,094.41	72.75
<b>SS</b>	44,849,974.62	14,444,111.24	67.79
<b>TN</b>	6,511,785.90	3,467,496.24	46.75
<b>TP</b>	861,944.19	631,134.03	26.78

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

### **2.1.4.2 Treatment Capacity Report Summary - Ringsend 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.

<b>RINGSEND WWTP</b>	
<b>Peak Hydraulic Capacity (m<sup>3</sup>/day) - As Constructed</b>	959,040
<b>DWF to the Treatment Plant (m<sup>3</sup>/day)</b>	397,440
<b>Current Hydraulic Loading - annual max (m<sup>3</sup>/day)</b>	868,784
<b>Average Hydraulic loading to the Treatment Plant (m<sup>3</sup>/day)</b>	468,235
<b>Organic Capacity - Design / As Constructed (PE)</b>	1,640,000
<b>Organic Capacity - Current loading (PE) - peak week load</b>	2,378,000
<b>Organic Capacity – Remaining (PE)</b>	0
<b>Will the capacity be exceeded in the next three years? (Yes/No)</b>	Yes

## 2.1.5 SLUDGE / OTHER INPUTS - RINGSEND 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)
Domestic /Septic Tank Sludge*	22,578	m <sup>3</sup> /yr	275 PE/day from Volume	0.013 % (PE)	Yes	Yes	Yes
Industrial / Commercial Sludge	5,644	m <sup>3</sup> /yr	69 PE/day from Volume	0.003 % (PE)	Yes	Yes	Yes
Landfill Leachate (delivered by tanker) – Ballynagran Landfill – Wicklow County Council	28,216	m <sup>3</sup> /yr	343.57 PE/day from Volume	0.016 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Kerdiffstown Landfill – Kildare County Council	10,967	m <sup>3</sup> /yr	133.54 PE/day from Volume	0.006 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Knockharley Landfill –Meath County Council	12,821	m <sup>3</sup> /yr	156.12 PE/day from volume	0.007 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Drehid Landfill Bord Na Mona Wicklow	10,649	m <sup>3</sup> /yr	129.67 PE/day from Volume	0.006 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes

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)
County Council							
Landfill Leachate (delivered by tanker) – Rampere– Wicklow County Council	59	m <sup>3</sup> /yr	1.0 PE/day from volume	<0.000 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by sewer network) Dunsink Civic Amenity – Fingal County Council	146,512	m <sup>3</sup> /yr	1,784 PE/ day from Volume	0.083 % (PE)	Yes	Licence consent	Yes

\*Domestic Tankers include only loads from residential/domestic sources and excludes loads from construction sites / offices / nursing homes / army barracks.

\*\* PE = m<sup>3</sup>/year /0.225 x365

\*\*\* % Load to WWTP = m<sup>3</sup>/year x 100 / current Hydraulic Capacity (m<sup>3</sup>/yr)

## 3 COMPLAINTS AND INCIDENTS

### 3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature is included below.

#### *Dublin City Council Functional Area:*

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
13	Blocker Sewer	1	12
6	WWTP Upgrade	0	6

#### *South Dublin County Council Functional Area*

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
91	Blocker Sewer	0	91

#### *Fingal County Council Functional Area:*

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
29	Blocker Sewer	0	29

#### *Dún Laoghaire Rathdown County Council Functional Area:*

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
32	Blocker Sewer	0	32

#### *Meath County Council Functional Area:*

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
9	Blocker Sewer	0	9

## 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 or fax. 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)
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Abatement Equipment offline	Plant or equipment breakdown at WWTP	1	No	Yes
Abatement Equipment offline	Adverse Weather	1	No	Yes
Breach of ELV	Other	1	No	Yes
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No
Fire	Plant or equipment breakdown at WWTP	1	No	No
Other	Plant or equipment breakdown at WWTP	1	No	Yes
Other	Broken Sewer Pipe	1	No	No
Other	Other	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	EO caused by ragging or blocking	1	No	Yes
Spillage	EO caused by pump failure	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Other	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes
Spillage	Blocked Sewer	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	EO caused by power failure	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Inadequate Operational Procedures / Training	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Network Infrastructure	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	EO caused by ragging or blocking	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	Adverse Weather	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	Plant or equipment breakdown at WWTP	1	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	Broken Sewer Pipe	1	No	Yes
Uncontrolled release	Blocked Sewer	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	Yes
Uncontrolled release	EO caused by pump failure	1	No	No

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	SWO exceptional rainfall and overflow expected	1	Yes	No
Uncontrolled release	EO caused by pump failure	1	Yes	No

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2019	66
Number of Incidents reported to the EPA via EDEN in 2019	66
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 in the subsections below.

#### 4.1.1 SWO IDENTIFICATION AND INSPECTION SUMMARY REPORT

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
CSO103DCC	310784, 232218	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO104DCC	313403, 232803	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO105DCC	317843, 233804	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO106DCC	319384, 231534	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO109DCC	317414, 238590	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO112DCC	315347, 237184	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
CSO114DCC	315933, 237459	Yes	Unknown	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
<b>CSO128DCC</b>	321116, 237636	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO130DCC</b>	316652, 238118	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO131DCC</b>	320166, 237863	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO132DCC</b>	312746, 239249	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO134DCC</b>	318903, 237248	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO135DCC</b>	313840, 237484	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO13DCC</b>	314893, 234204	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO140DCC</b>	322306, 241250	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO141DCC</b>	321150, 238284	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO143DCC</b>	314316, 238253	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO144DCC</b>	320761, 238396	Yes	Unknown	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
<b>CSO147DCC</b>	322791, 238174	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO150DCC</b>	321216, 238352	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO151DCC</b>	313201, 236289	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO152DCC</b>	321004, 236217	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO155DCC</b>	321529, 237974	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO158DCC</b>	323132, 241110	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO161DCC</b>	315285, 239290	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO165DCC</b>	320130, 235782	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO167DCC</b>	317890, 231357	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO168DCC</b>	318139, 233413	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO16DCC</b>	312966, 234298	Yes	Unknown	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
<b>CSO171DCC</b>	317550, 232447	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO176DCC</b>	317639, 232519	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO177DCC</b>	314416, 231521	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO179DCC</b>	318132, 233429	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO17DCC</b>	312966, 234298	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO183DCC</b>	316790, 230086	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO184DCC</b>	317824, 232486	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO187DCC</b>	316306, 230383	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO189DCC</b>	316956, 230477	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO18DCC</b>	316852, 236022	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO190DCC</b>	317176, 230639	Yes	Unknown	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
<b>CSO195DCC</b>	314828, 229637	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO196DCC</b>	314817, 229635	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO19DCC</b>	316857, 236017	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO1DCC</b>	314772, 234232	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO20DCC</b>	313539, 233798	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO23DCC</b>	316108, 234474	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO26DCC</b>	312632, 233616	Yes	High	Meeting	Unknown	Unknown	Not Monitored
<b>CSO28DCC</b>	313210, 233631	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO29DCC</b>	315417, 234244	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO2DCC</b>	314663, 234263	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO30DCC</b>	312010, 233527	Yes	Unknown	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
<b>CSO34DCC</b>	316933, 235409	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO36DCC</b>	317234, 234294	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO37DCC</b>	312015, 233665	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>CSO40DCC</b>	309728, 234678	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO41DCC</b>	314987, 234131	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO43DCC</b>	313387, 233674	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO46DCC</b>	315717, 234317	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO48DCC</b>	315133, 234184	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO4DCC</b>	317065, 235991	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO50DCC</b>	315113, 233446	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO51DCC</b>	315102, 233451	Yes	High	Not 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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>CSO54DCC</b>	312990, 233670	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO57DCC</b>	313022, 233676	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>CSO5DCC</b>	317054, 235998	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO62DCC</b>	317394, 234266	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO63DCC</b>	314704, 234412	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO64DCC</b>	314700, 234516	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO66DCC</b>	313731, 234212	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO69DCC</b>	310913, 233836	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO71DCC</b>	310510, 234079	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO72DCC</b>	312286, 233530	Yes	High	Meeting	Unknown	Unknown	Not Monitored
<b>CSO74DCC</b>	312533, 233579	Yes	Medium	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>CSO7DCC</b>	314962, 233226	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>CSO81DCC</b>	317303, 235416	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO84DCC</b>	315139, 234124	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO87DCC</b>	316865, 234654	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO90DCC</b>	311589, 231731	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO92DCC</b>	313440, 232441	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO93DCC</b>	319319, 231456	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO94DCC</b>	310380, 232486	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO95DCC</b>	318880, 233947	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO98DCC</b>	319373, 230608	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO99DCC</b>	313291, 229848	Yes	Unknown	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
<b>DLRCC/B5/R/001</b>	317559, 230769	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/007</b>	315556, 229632	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/008</b>	315434, 229529	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/010</b>	316969, 229568	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/012</b>	316984, 229359	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/017</b>	320837, 229937	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/019</b>	321124, 229395	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/021</b>	319142, 227929	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/023</b>	321681, 229019	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/024</b>	321681, 229019	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/025</b>	321806, 229409	Yes	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>Fingal-SW27</b>	324837, 239149	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW34</b>	323855, 243158	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW37</b>	324179, 240115	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW40</b>	323086, 239133	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW41</b>	323299, 238441	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW42</b>	326312, 238143	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW43</b>	325886, 239468	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW46</b>	327789, 239464	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW48</b>	328800, 239337	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW50</b>	306076, 243269	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW52</b>	308318, 238766	Yes	Unknown	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
<b>Fingal-SW53</b>	309614, 238262	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S.W 1 Meath</b>	307000, 251960	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>S.W 4 Meath</b>	305890, 252230	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>S.W 6 Meath</b>	303240, 251560	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>S.W 8 Meath</b>	306330, 246270	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS01</b>	702432, 735066	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS01</b>	702432, 735066	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS02</b>	703221, 735072	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS03</b>	703964, 734515	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS05</b>	708588, 734325	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS06</b>	703073, 732117	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>SDCCPS08</b>	700098, 728983	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS09</b>	701184, 728875	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS10</b>	701532, 727416	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS13</b>	707631, 735459	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS16</b>	708002, 730773	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS17</b>	707770, 729780	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS18</b>	705601, 727665	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS19</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSN02</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSN03</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW015</b>	TBC	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>SDCCSW017</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW018</b>	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>SDCCSW002</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW003</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW004</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW006</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW008</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW011</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW013</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW014</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>TBC</b>	308816, 234950	Yes	Medium	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
TBC	310814, 233884	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	311915, 236281	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	312970, 234365	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	313375, 233124	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
TBC	317628, 234924	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	317235, 235455	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
TBC	317371, 235907	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	313857, 233351	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317075, 235588	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	318249, 230834	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317785, 231204	Yes	Unknown	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
TBC	315273, 237272	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319051, 237218	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319029, 237382	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	321437, 236402	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319242, 235931	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319348, 237237	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	316237, 236869	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	315674, 237839	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	322654, 239351	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	323087, 239136	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	313840, 237484	Yes	Unknown	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
<b>TBC</b>	319444, 237359	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>TBC</b>	312837, 239706	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>TBC</b>	317083, 240679	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>TBC</b>	317339, 236668	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>TBC</b>	320292, 236509	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO100DCC</b>	313421, 232721	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO101DCC</b>	319921, 230594	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO102DCC</b>	310741, 232270	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO107DCC</b>	318741, 232076	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO10DCC</b>	313533, 233809	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO118DCC</b>	316968, 236195	Yes	Unknown	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
<b>CSO119DCC</b>	317476, 236267	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO11DCC</b>	316107, 234398	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO120DCC</b>	317288, 237032	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO122DCC</b>	319420, 239940	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO124DCC</b>	317564, 236640	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO125DCC</b>	318032, 236337	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO126DCC</b>	319927, 235869	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO129DCC</b>	314692, 238454	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO12DCC</b>	316024, 234360	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO133DCC</b>	313170, 238854	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO136DCC</b>	318559, 237699	Yes	Unknown	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
<b>CSO139DCC</b>	313685, 238438	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO142DCC</b>	323129, 238499	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO146DCC</b>	315371, 237860	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO149DCC</b>	313240, 238954	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO14DCC</b>	316849, 234337	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO153DCC</b>	313415, 238521	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO154DCC</b>	322130, 239548	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO156DCC</b>	322127, 237601	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO157DCC</b>	313270, 238784	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO15DCC</b>	312958, 234298	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO160DCC</b>	313721, 237669	Yes	Unknown	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
<b>CSO162DCC</b>	321555, 235735	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO163DCC</b>	314106, 237565	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO164DCC</b>	323611, 238744	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO166DCC</b>	317562, 230767	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO169DCC</b>	317909, 232497	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO170DCC</b>	317699, 231474	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO173DCC</b>	317827, 231358	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO174DCC</b>	317852, 231363	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO175DCC</b>	317743, 231303	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO178DCC</b>	314413, 231521	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO180DCC</b>	318107, 232850	Yes	Unknown	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
<b>CSO181DCC</b>	315892, 232164	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO182DCC</b>	314820, 232377	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO185DCC</b>	316609, 232018	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO186DCC</b>	317881, 232507	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO188DCC</b>	314451, 230170	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO197DCC</b>	316297, 237050	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO21DCC</b>	315487, 234037	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO22DCC</b>	311516, 232830	Yes	Unknown	Meeting	Unknown	Unknown	Not Monitored
<b>CSO24DCC</b>	314430, 234315	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO25DCC</b>	314580, 234294	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO27DCC</b>	315533, 234142	Yes	High	Not 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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>CSO31DCC</b>	315899, 236809	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO32DCC</b>	317182, 234623	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO33DCC</b>	317191, 234633	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO35DCC</b>	316885, 233670	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO38DCC</b>	312690, 234346	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO3DCC</b>	315862, 234379	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO42DCC</b>	315978, 236912	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO44DCC</b>	316904, 236073	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>CSO45DCC</b>	315551, 234270	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO47DCC</b>	315278, 234216	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO49DCC</b>	313699, 234415	Yes	Medium	Not 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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>CSO52DCC</b>	317843, 233804	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO53DCC</b>	309604, 234376	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO55DCC</b>	312990, 233670	Yes	High	Meeting	Unknown	Unknown	Not Monitored
<b>CSO56DCC</b>	313022, 233676	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO58DCC</b>	313064, 233680	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>CSO59DCC</b>	314244, 234324	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO60DCC</b>	315398, 233788	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO61DCC</b>	315322, 233808	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO65DCC</b>	313820, 234224	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>CSO67DCC</b>	310350, 234128	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO68DCC</b>	310355, 234122	Yes	Medium	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>CSO6DCC</b>	314959, 233223	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO70DCC</b>	310244, 234243	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO73DCC</b>	317455, 235389	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO75DCC</b>	312545, 233667	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO76DCC</b>	311757, 233212	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>CSO77DCC</b>	314492, 234246	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO78DCC</b>	314686, 234201	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO79DCC</b>	314322, 234267	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO80DCC</b>	314205, 234270	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO82DCC</b>	317299, 235411	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO83DCC</b>	313953, 234344	Yes	Medium	Not 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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>CSO85DCC</b>	315136, 234112	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO88DCC</b>	317683, 234884	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO89DCC</b>	317775, 234427	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
<b>CSO8DCC</b>	316161, 236672	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>CSO91DCC</b>	311398, 230549	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO96DCC</b>	313725, 232628	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO97DCC</b>	319373, 230608	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>CSO9DCC</b>	316043, 236686	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/002</b>	316935, 230487	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/003</b>	319999, 230505	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/004</b>	316783, 230085	Yes	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>DLRCC/B5/R/005</b>	316783, 230085	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/006</b>	316689, 230050	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/009</b>	315522, 229162	Yes	Medium	Not Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/011</b>	316987, 229386	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/013</b>	316940, 229706	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/014</b>	319938, 230443	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/015</b>	320280, 230216	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/016</b>	320631, 230024	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/018</b>	321247, 229477	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/020</b>	321567, 229551	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/022</b>	320736, 228221	Yes	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>DLRCC/B5/R/026</b>	322033, 228395	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/027</b>	322573, 228364	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>DLRCC/B5/R/028</b>	324953, 228312	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal SW33</b>	323560, 242484	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW21</b>	317088, 240688	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW22</b>	318083, 241519	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW23</b>	331227, 241541	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW26</b>	324686, 240383	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW32</b>	324858, 244368	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW35</b>	323969, 241503	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW38</b>	324387, 239355	Yes	Unknown	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
<b>Fingal-SW39</b>	323228, 239139	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW44</b>	326155, 239701	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW45</b>	327347, 239672	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW47</b>	328391, 239452	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW49</b>	328711, 239308	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW51</b>	308577, 238545	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW54</b>	308007, 238729	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW55</b>	308950, 237336	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>Fingal-SW56</b>	306505, 237441	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
<b>S.W 2 Meath</b>	307220, 251800	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>S.W 3 Meath</b>	306100, 252760	Yes	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>S.W 5 Meath</b>	302640, 251610	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>S.W 7 Meath</b>	306676, 245818	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS04</b>	707012, 735193	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS07</b>	706856, 732230	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS11</b>	712281, 729622	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS12</b>	711483, 728060	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS14</b>	704673, 732849	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS15</b>	704314, 732587	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS21</b>	701651, 734384	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCPS22</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSN01</b>	TBC	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
<b>SDCCSN04</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSN05</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSN06</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW016</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW001</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW005</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW007</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW009</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW010</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>SDCCSW012</b>	TBC	No	Low	Meeting	Unknown	Unknown	Not Monitored
<b>TBC</b>	310278, 234430	Yes	Medium	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 2019 (No. of events)	Total volume discharged in 2019 (m3)	Monitoring Status
TBC	313272, 233611	Yes	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	313217, 233706	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
TBC	314162, 233929	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	317494, 234699	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	317667, 234933	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored
TBC	313909, 233340	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	312628, 235825	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	312810, 235654	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	312536, 235894	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	311497, 233703	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	318105, 232849	Yes	Unknown	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
TBC	317326, 233389	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	318892, 237254	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	321196, 236118	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317482, 236223	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317527, 236397	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317858, 236891	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	320457, 237749	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	314609, 237773	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	317275, 236972	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	319687, 233798	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	320743, 236300	Yes	Unknown	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
TBC	317840, 236426	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	TBC	No	Unknown	Not yet Assessed	Unknown	Unknown	Not Monitored

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m <sup>3</sup> )?	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, where applicable
Have the EPA been advised of any additional SWOs / changes 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.

#### 4.2.1a Specified Improvement Programme Summary - Dublin City Council Functional Area:

A summary of the status of any improvements identified by under Condition 5.2 is included below.

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
Upgrade waste water treatment plant and ancillary works in accordance with Condition 5.5	C.1	22 <sup>nd</sup> December 2015	Yes	Part-commenced	The 400,000 pe Capacity Upgrade Design Build (DB) contract was signed at the end of 2017 and construction commenced in 2018. Irish Water is continuing to progress with the delivery of the Capacity Upgrade. It is anticipated that commissioning of the Capacity Upgrade will be fully operational by the end of 2020. An Bord Pleanála granted planning permission for the project on 24 <sup>th</sup> April 2019, consenting for the works required to facilitate the use of the AGS technology in the existing treatment tanks and to omit construction of the Long Sea	The Upgrade works are expected to take until 2025 to complete. However, the proposed upgrade is currently programmed to start producing an effluent in line with the parameters set out in the UWWTD by end of 2022. It is important to note that this programmed 2022 date is the anticipated date that the plant can start producing an effluent in line with the parameters set out in the UWWTD and the actual confirmed UWWTD compliance determination will be up to 12 months from that date (on attaining 12 months compliance with the UWWTD ELVs).

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
					<p>Outfall Tunnel.</p> <p>Retrofitting the AGS technology to the existing treatment tanks is scheduled to commence in 2020. A phosphorous recovery facility is also required to bring the plant into compliance and is included in the above-mentioned planning consent application. This work is planned to commence in 2020 and complete in 2022.</p>	
Upgrade storm water storage tank at WWTP as necessary	C.1	22 <sup>nd</sup> December 2015	Yes		There are no current plans to upgrade the storm water storage tanks at the Works. This will be reassessed on completion of the drainage areas plans.	Drainage Area Plan Investigation Study to be completed.
City Centre Sewerage Scheme (CCSS)	C.3	None specified	Not applicable	In progress	Stage 4 2020	Stage 3 Complete, Stage 4 ongoing/ options development.
North Docklands Sewerage Scheme	C.3	None specified	Not applicable	Work on Site	Not Applicable	Operational

#### 4.2.1b Specified Improvement Programme Summary – South Dublin County Council Functional Area:

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
None						

#### 4.2.1c Specified Improvement Programme Summary – Fingal County Council Functional Area:

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 S4 Fingal to the Irish Sea to be discontinued	A.3	31/12/2011	Yes	Proceeding to detailed design.	2024	Detailed design ongoing.

#### 4.2.1d Specified Improvement Programme Summary – Dún Laoghaire Rathdown County Council Functional Area:

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
None						

#### 4.2.1e Specified Improvement Programme Summary – Meath County Council Functional Area:

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
None						

## 4.2.2 IMPROVEMENT PROGRAMME SUMMARY

### 4.2.2a Improvement Programme Summary - Dublin City Council Functional Area:

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
WWTP Upgrade	WWTP Upgrade	WWTP (Condition 5.2)	SBR Retrofit Works and separately a Phosphorous Recovery Facility are to commence in 2020. The proposed upgrade is currently programmed to produce an effluent in line with the parameters set out in the UWWTD by end of 2022. As outlined above, it is important to note that this programmed 2022 date is the anticipated date that the plant can start producing an effluent in line with the parameters set out in the UWWTD and the actual confirmed UWWTD compliance determination will be up to 12 months from that date (on attaching 12 months compliance with the UWWTD ELVs).	
<b>Main Lift Pumping Station Catchment DAP</b> -Rathmines & Pembroke -Crumlin/Drimnagh/Bluebell	Survey & Assessment of Wastewater Network		2023	
<b>Sutton Pumping Station Catchment DAP</b> -North Fringe -North Dublin Drainage Scheme (NDDS)	Survey & Assessment of Wastewater Network		2022	
<b>Main Lift Pumping Station Upgrade Works</b>	Upgrade to MLPS (Civil & M&E Works including pumps and panel replacements)		2021	

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
<b>Wastewater Pumping Station Capital Maintenance Works Programme</b>	Capital Maintenance Works to Multiple Wastewater Pumping Stations		2020	

#### 4.2.2b Improvement Programme Summary - South Dublin County Council Functional Area:

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
<b>Main Lift Pumping Station Catchment DAP</b> -Newcastle/Rathcoole/Saggart -Lucan/Clondalkin	Survey & Assessment of Wastewater Network		2023	
<b>Dodder Valley Sewers DAP</b>	Survey & Assessment of Wastewater Network		2022	
<b>Newcastle Local Network Reinforcement Project</b>	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	2023	
<b>Ballycullen/Oldcourt Network Reinforcement Project</b>	Provision of additional capacity to control reduce flooding risk.	Network Upgrade	2023	

#### 4.2.2c Improvement Programme Summary - Fingal County Council Functional Area:

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
<b>Sutton Pumping Station Catchment DAP</b> -North Fringe	Survey & Assessment of Wastewater Network		2022	
<b>Blanchardstown Sewerage Scheme Phase 2 Contract 2: Duplication of 9C Sewer &amp; Storage</b>	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	2022	
<b>Liffey Siphons Refurbishment</b>	Provision of additional capacity to reduce risk of flooding	Network Upgrade	2020	
<b>Portmarnock Local Network Reinforcement Project</b>	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	2022	
<b>Kinsealy Local Network Reinforcement Project</b>	Provision of additional capacity and storage to control overflows and reduce flooding risk.	Wastewater Pumping Station, Storage and Network Upgrade	2022	

#### 4.2.2d Improvement Programme Summary - Dún Laoghaire Rathdown County Council Functional Area:

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
<b>Dun Laoghaire Sewerage Scheme Phase 1</b>	Contract 2e - Moreen Environs Foul Sewer Upgrade, Phase 4 - Removal of deficiencies in capacity	Network Upgrade	2022	
<b>Dun Laoghaire Sewerage Scheme Phase 1</b>	Contract 2 - Network Upgrade Sandyford/ Stillorgan Improvement-Tunnel - Removal of deficiencies in capacity	Storage and Network Upgrade	2022	
<b>Goatstown Local Network</b>	Provision of additional capacity to reduce risk of	Network Upgrade	2022	

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
<b>Reinforcement Project</b>	flooding			
<b>Churchtown/Landscape Rd Network Reinforcement Project</b>	Provision of additional capacity to reduce risk of flooding	Network Upgrade	2023	
<b>West Pier Pumping Station Catchment DAP</b> <b>-West Pier East</b> <b>-West Pier West</b>	Survey & Assessment of Wastewater Network	Not Applicable	2021	

#### 4.2.2e Improvement Programme Summary – Meath County Council Functional Area:

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
Seal the leaking cable ducts and other points that flood the wet well sumps	Seal the leaking cable ducts and other points that flood the wet well sumps; a) at Ashbourne PS b) at Kilbride PS	Not Applicable	2019	completed
A new PLC and radio signal system in Kilbride & Ratoath	A new radio signal system in the Ashbourne, Ratoath and Kilbride pumping stations are undergoing upgrade works which also includes upgrades to the PLC's at Kilbride and Ratoath PS's. This work when complete will provide a robust alarm system for the pumping stations and prevent unauthorised discharges from Kilbride PS.	Not Applicable	Q2 2019	completed

#### 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	Required in this AER	Included in this AER	Reference to relevant section of AER
Priority Substances Assessment	Yes	Yes	Yes	Summary of finding in <b>Table 5.1</b> . Full report in <b>Appendix 7.2</b> .
Toxicity/Leachate Management	Yes	Yes	Yes	Summary of findings in <b>Table 5.2</b> . Full report in <b>Appendix 7.3</b> .
Toxicity of Final Effluent Report	Yes	Yes	Yes	Summary of findings in <b>Table 5.3</b> . Full report in <b>Appendix 7.4</b>

### 5.1 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report is included in Appendix 7.2 . A summary of the findings of this report is included below.

Priority Substances Assessment	<p>On-going review of licenced discharges to sewers in the catchment of Ringsend WWTP.</p> <p>Priority substances detected in effluent should have no negative impacts outside the near field of the discharge due to dilution. See <b>Appendix 7.2</b>.</p>
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## 5.2 TOXICITY/LEACHATE MANAGEMENT

The Toxicity of Toxicity/Leachate Management Report is included in Appendix 7.3 . A summary of the findings of this report is included below.

Toxicity/Leachate Management	Annual leachate tankered volume at Ringsend is not significant at <b>62,721 cubic metres</b> . This constitutes <b>0.04% of the mean daily influent volume for 2019</b> (478,379.9 cubic metres). See <b>Appendix 7.3</b> .
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## 5.3 TOXICITY OF FINAL EFFLUENT

The Toxicity of Final Effluent Report is included in Appendix 7.4. A summary of the findings of this report is included below.

Toxicity of Final Effluent Report	Treated effluent complies with the limit set in Licence. See <b>Appendix 7.4</b> .
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## 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	<i>Irish Water will be seeking a review of the license in relation to the proposed upgrade of treatment works and network.</i>
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	Yes
List reason e.g. changes to monitoring requirements	<i>Upgrade in capacity of waste water treatment works &amp; changes to ambient monitoring requirements.</i>
Have these processes commenced?	No
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:

Date: 06/04/2020

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

In the appendix include all the detailed or site-specific reports that are relevant to the AER.

### Appendix

**Appendix 7.1 - Ambient Monitoring Summary**

**Appendix 7.2 - Priority Substances Assessment**

**Appendix 7.3 - Toxicity Leachate Management Report**

**Appendix 7.4 - Final Effluent Toxicity Assessment**

**Appendix 7.5 - Met Eireann Orange and Red Alerts affecting Ringsend WWTP**

## **Appendix 7.1 - Ambient Monitoring Summary**

**Appendix 7.1.1** Dublin Ambient Sampling Points Map

**Appendix 7.1.2** Transitional Monitoring Water Quality Data: ASW2 – ASW10

**Appendix 7.1.3** Transitional Monitoring - Water Quality Data: Points Agreed by the EPA

**Appendix 7.1.4** Coastal Monitoring - Dublin Bay Water Quality Data: Points Agreed by the EPA

**Appendix 7.1.5** Coastal Monitoring – Bathing Water Quality Data: ASW11 – ASW18

# Dublin



Figure 7.1.1 Dublin Ambient Sampling Points Map

**Appendix 7.1.2 Transitional Water Body Monitoring 2019 ASW2-ASW10**

Report for Samples Taken During the Period: 01/01/2019 - 18/12/2019

Customer	EPA Code	Test List	Sampling   Sampling Point Description	Sampled Date	Sample Number	Ammonia µg/l as N	B.O.D. Saline mg/l	Chlorophyll a mg/m3	DIN µg/l	Dissolved Oxygen % Sat.	Pheophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Salinity PSU	Silica µg/l as SiO <sub>2</sub>	Temperature °C	TON µg/l as N
						Surface Water Objectives for Transitional Water Bodies SI 272 of 2009 Compliant Non-Compliant										
DCC	ASW 2S	123_ESTUAR	130842 (130842) Liffey Estuary Lower, 25m North of Poolbeg Wall - Surface Sample	18/04/2019 09:33	1565262	4631	>7	1	5030	93	1.1	594	20.34	1537	13.8	399
				15/05/2019 10:06	1575112	974	2	0.9	1146	101	2.4	135	32.61	404	13	172
				13/06/2019 10:02	1586537	1845	>8	0.4	2039	102	3.9	98	27.92	396	15.6	194
				11/07/2019 10:21	1597705	4607	4	1.9	5584	98	0.7	453	26.09	1972	17.3	977
				28/08/2019 10:29	1616508	2327	>8	1.6	3251	102	2.8	646	28.98	1395	19.3	924
				25/09/2019 09:00	1627839	2292	3	1.7	3107	96	1.3	333	24.17	2741	17.7	815
										95%ile 0% PSU 70% -130% 35% PSU 80% - 120% 0-17% PSU < 80 µg/l P (median) 35% PSU < 40 µg/l P (median)						
						1.3 393										
DCC	ASW 2D	123_ESTUAR	130843 (130843) Liffey Estuary Lower, 25m North of Poolbeg Wall - Depth Sample	18/04/2019 09:34	1565263	699	3	1.5	792	100	0.7	97	34.04	367	9.4	93
				15/05/2019 10:06	1575113	183	2	2.4	183	98	0.05	26	34.18	73	11.8	20
				13/06/2019 10:02	1586538	206	1	2.5	252	101	2.5	32	32.81	154	13.7	46
				11/07/2019 10:21	1597706	467	2	3.5	629	101	0.9	68	33.47	179	16	162
				28/08/2019 10:29	1616509	134	<1	3.2	240	95	2.9	62	31.76	245	17.5	106
				25/09/2019 09:00	1627840	162	<1	2.5	257	94	0.9	60	33.27	361	15.4	95
										2.5 81						
DCC	ASW 3S	123_ESTUAR	130844 (130844) Liffey Estuary Lower, 50m North of Poolbeg Wall - Surface Sample	18/04/2019 09:27	1565264	269	2	1.2	750	96	1	44	28.35	737	9.6	481
				15/05/2019 09:59	1575114	1106	2	1.5	1318	101	0.5	159	30.95	475	13.3	212
				13/06/2019 10:16	1586539	167	2	1.5	236	102	3.7	29	30.13	172	14.8	69
				11/07/2019 10:08	1597707	3180	4	2.8	3828	101	1.3	285	32.33	1325	17.3	648
				28/08/2019 10:19	1616510	1598	5	1.7	2376	102	3.9	409	29.81	1170	19	778
				25/09/2019 09:00	1627841	1456	2	1.5	2141	97	0.7	244	24.54	1950	16.4	685
										1.5 202						
DCC	ASW 3D	123_ESTUAR	130845 (130845) Liffey Estuary Lower, 50m North of Poolbeg Wall - Depth Sample	18/04/2019 09:29	1565265	100	<1		100	102		11	33.42	105	9.4	20
				15/05/2019 09:59	1575115	121	1	2.1	121	98	0.05	30	34.33	66	11.6	20
				13/06/2019 10:16	1586540	123	<1	2.7	123	100	2.3	26	33.1	99	13.2	20
				11/07/2019 10:08	1597708	90	2	4	152	101	1.4	19	32.85	70	16.9	62
				28/08/2019 10:19	1616511	28	<1	3.5	28	96	1.1	31	33.38	148	16.8	20
				11/09/2019 09:58	1622416	34	<1	2	34	99	2.7	24	33.42	96	15.9	20
				25/09/2019 09:00	1627842	72	<1	2.3	125	93	1.5	38	33.48	221	15.3	53
						2.5 26										
DCC	ASW 4S	123_ESTUAR	130846 (130846) Liffey Estuary Lower, 75m North of Poolbeg Wall - Surface Sample	18/04/2019 09:20	1565266	1036	1	0.8	1405	96	0.9	158	15.94	805	9.6	369
				15/05/2019 09:53	1575116	2892	2	1.1	3338	100	0.05	403	27.3	1101	13.6	446
				13/06/2019 10:38	1586541	1674	4	2.5	1984	103	1	140	30.94	670	14.8	310
				11/07/2019 09:31	1597709	77	2	3.3	121	99	0.9	22	32.77	102	16.3	44
				28/08/2019 10:10	1616512	111	<1	3.7	269	102	1.2	60	32.25	387	17.5	158
				25/09/2019 09:00	1627843	82	<1	2.3	383	98	0.9	45	30.43	808	15.6	301
										2.4 100						
DCC	ASW 4D	123_ESTUAR	130847 (130847) Liffey Estuary Lower, 75m North of Poolbeg Wall - Depth Sample	18/04/2019 09:22	1565267	81	<1		81	102		5	34.31	91	9.1	20
				15/05/2019 09:53	1575117	192	1	1.1	234	98	0.05	40	34.13	109	11.7	42
				13/06/2019 10:38	1586542	106	<1	2.8	106	100	2.4	17	32.97	75	13.5	20
				11/07/2019 09:31	1597710	77	1	2.1	77	102	0.6	19	34.04	68	15.6	20
				28/08/2019 10:10	1616513	43	<1	2.1	102	96	0.7	37	33.51	215	16.7	59
				11/09/2019 09:46	1622415	30	<1	1.6	30	97	1.5	27	33.39	111	15.8	20
				25/09/2019 09:00	1627844	44	<1	1.7	44	93	0.9	31	33.35	185	15.3	20
						1.9 27										
DCC	ASW 5S	123_ESTUAR	130848 (130848) Liffey Estuary Lower, 100m North of Poolbeg Wall - Surface Sample	18/04/2019 09:09	1565268	362	1	0.3	456	96	0.05	47	32.5	277	9.5	94

DCC	ASW 5D	123_ESTUAR	130849 (130849) Liffey Estuary Lower, 100m North of Poolbeg Wall - Depth Sample	15/05/2019 09:45
				13/06/2019 11:02
				11/07/2019 09:22
				28/08/2019 09:46
				25/09/2019 09:00
				18/04/2019 09:11
15/05/2019 09:45				
13/06/2019 11:02				
11/07/2019 09:22				
28/08/2019 09:46				
11/09/2019 09:35				
25/09/2019 09:00				

1575118	1705		2	1976	100	0.05	231	29.6	675	13.2	271
1586543	78 <1		3.3	78	100	3.1	5	32.81	25	13.6	20
1597711	96	3	3.2	96	99	1.7	23	32.89	94	16.3	20
1616514	85 <1		3.7	198	101	1.4	53	32.53	300	16.9	113
1627845	96 <1		2.4	291	99	1.1	44	31.12	576	15.6	195
			2.8				46				
1565269	106 <1			106	100		11	34.16	102	9.2	20
1575119	312	1		383	96		63	34.18	172	11.6	71
1586544	64 <1		3.6	64	98	2	5	33.37	25	13.3	20
1597712	270	2	2.8	342	99	1.4	31	33.29	66	16.1	72
1616515	35 <1		2.8	78	97	1.3	36	33.42	179	16.7	43
1622414	30 <1		2.3	30	100	1.3	20	33.52	133	15.8	20
1627846	59 <1		2.3	59	96	1.1	37	33.46	192	15.4	20
			2.8				31				

DCC	ASW 6S	123_ESTUAR	40063 (40063) Liffey City D/s Islandbdg Weir	18/04/2019 09:30
				15/05/2019 09:30
				13/06/2019 10:30
				11/07/2019 08:30
				28/08/2019 09:00
				25/09/2019 14:05

1565348	27	2	7.9	3520	103	4.9	10	0.1	3056	10.2	3493
1575050	32	1	2.5	2268	97	0.05	5	0	484	14.2	2236
1586565	106	2	2	3076	92	11.3	16	0.1	3956	13.7	2970
1597668	5	1	1.2	2156	91	1.3	12	0.1	2783	18.6	2156
1616392	42 <1		0.7	2479	94	2.4	55	0.1	5517	16	2437
1627822	21	2	2.1	2849	100	3.1	66	0	6043	16.4	2828
			2.1				14				

DCC	ASW 7S	123_ESTUAR	(40067) Liffey City Heuston Stn u/s Camac	18/04/2019 10:00
				15/05/2019 09:50
				13/06/2019 10:40
				11/07/2019 08:50
				28/08/2019 09:10
				25/09/2019 13:40

1565349	52 <1		1.5	3107	96	2.1	12	0.5	3126	10.3	3055
1575051	157	3	22.4	2260	92	4.2	32	0.4	1481	14.1	2103
1586566	58 <1		0.9	2905	87	3.6	13	1.4	3886	13.6	2847
1597669	5	1	3.2	2078	96	3.9	5	1.4	2790	18.6	2078
1616393	54 <1		1.5	1796	93	1.1	55	2.2	5011	16.3	1742
1627823	52	1	2	2340	95	1.9	67	3.4	5616	15.8	2288
			1.8				23				

DCC	ASW 8S	123_ESTUAR	40072 (40072) Liffey City Winetav St Bridge	18/04/2019 11:30
				15/05/2019 10:20
				13/06/2019 11:30
				11/07/2019 09:10
				28/08/2019 09:30
				25/09/2019 13:05

1565350	28	4	10.7	2733	97	8.9	26	1.8	3212	10.8	2705
1575052	66	2	5.5	2166	100	0.9	5	2.5	872	14.4	2100
1586567	88 <1		0.8	1611	92	4.3	24	6	3378	13.6	1523
1597670	25	1	6.5	1886	95	3.6	16	4.7	1292	18.1	1861
1616394	68 <1		0.8	1772	86	1.4	60	8.2	4193	16.6	1704
1627824	84 <1		1.9	2008	90	1.8	68	8.2	4758	16	1924
			3.7				25				

DCC	ASW 9S	123_ESTUAR	40457 (40457) Liffey (S) D/s Toll Bridge	18/04/2019 12:10
				15/05/2019 11:00
				13/06/2019 11:50
				11/07/2019 09:30
				28/08/2019 09:45
				25/09/2019 12:45

1565351	164 <1		0.4	2021	99	1.2	35	13	2512	13	1857
1575053	153	2	2.9	816	117	0.7	24	23.5	616	14.8	663
1586568	89 <1		0.9	842	94	3.6	24	9.6	4933	13.1	753
1597671	132	2	3.7	973	106	5	19	22.3	1468	18	841
1616395	97	1	1.9	588	97	3.3	47	26.9	1161	16.5	491
1627825	89 <1		1.2	1541	96	1.2	61	15.6	3595	16.8	1452
			1.6				30				

DCC	ASW 10S	123_ESTUAR	45082 (45082) Tolka River D/s Annesley Bridge	18/04/2019 12:20
				15/05/2019 11:20
				13/06/2019 12:40
				11/07/2019 09:40
				28/08/2019 10:00
				25/09/2019 11:40

1565352	32 <1		6.1	2921	113	3.9	30	1.15	4058	11.9	2889
1575054	106	3	4	1706	101	0.05	59	4.1	3025	12.7	1600
1586569	249	4	2.8	1537	117	6.1	142	1.7	6710	13.1	1288
1597672	12	2	9.5	1634	81	7	32	10.6	3166	17.2	1622
1616396	122	2	2.4	1296	90	6.6	101	12.5	3102	15.9	1174
1627826	103	2	5.1	2962	96	6.4	112	0	7433	15.4	2859
			4.6				80				

**Appendix 7.1.3 Transitional Water Body Monitoring EPA DB-020 to DB-420**

Report for Samples Taken During the Period: 01/01/2019 - 18/12/2019

Customer	EPA Code	Test List	Sampling Point	Sampling Point Des	Sampled Date	Sample Number	Ammonia µg/l as N	B.O.D. Saline mg/l	Bottom Oxygen % Sat.	Bottom Temperatu °C	Chlorophyll a mg/m3	DIN µg/l	Dissolved Oxygen % Sat.	Oxygen at 0 m dept % Sat.	Phoeophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Salinity PSU	Salinity (mean) PSU	Silica µg/l as SiO2	Surface Temperatu °C	Temperature °C	TON µg/l as N
<p>Surface Water Objectives for Transitional Water Bodies SI 272 of 2009</p> <p>Compliant Non-Compliant</p> <p>&lt;4 mg/l 95%-ile</p> <p>High-Good 2.5-5(median) Good-Moderate 5-10 (median)</p> <p>0% PSU 70% -130% 35% PSU 80% - 120%</p> <p>0-17% PSU &lt; 60 ug/l P (median) 35% PSU &lt; 40 ug/l P (median)</p>																						
DCC	DB 020	123_ESTUARY	130870	(130870) Liffey Est	18/04/2019 07:48	1565270	109	<1			2	2649	101		1.3	19	6.49		2796	9.4	2540	
					15/05/2019 07:56	1575120	35		1		0.5	2040	98		0.6	5	11.23		843	13.7	2005	
					13/06/2019 09:03	1586545	63	<1			1.2	427	97		1.6	13	14.03		566	13.4	364	
					11/07/2019 07:50	1597713	81		2		3.9	968	96		6.3	38	31.7		1580	16.7	887	
					28/08/2019 08:25	1616516	103	<1			2.1	437	96		1.1	46	28.27		823	16.7	334	
					25/09/2019 09:00	1627847	88	<1			1.3	1105	99		2	52	22.1			15.6	1017	
											1.7					29						
DCC	DB 020	123_ESTUARY	130871	(130871) Liffey Est	18/04/2019 07:50	1565271	445		3		638	84			81	32.79		554	8.5	193		
					15/05/2019 07:56	1575121	346		2		4.9	539	93		6.8	113	32.63		936	11.2	193	
					13/06/2019 09:03	1586546	108	<1			2	108	98		3.3	17	32.41		142	13.5	20	
					11/07/2019 07:50	1597714	194		1		18.3	328	96		7.2	45	32.89		212	16.1	134	
					28/08/2019 08:25	1616517	180	<1			3.1	329	96		2.3	61	32.5		502	16.7	149	
					11/09/2019 08:20	1622413	58		1		4.4	58	93		2.2	23	33.4		178	15.9	20	
					25/09/2019 09:00	1627848	242	<1			2.3	380	97		3.6	65	32.89		537	15.6	138	
											3.8					53						
DCC	DB 120	123_ESTUARY	130800	(130800) Liffey Est	18/04/2019 08:01	1565253	45	<1			0.9	1554	97		1.7	10	13.01		4817	9.2	1509	
					15/05/2019 08:12	1575103	57		1		1.6	1432	98		0.5	13	11.33		1554	12.6	1375	
					13/06/2019 09:20	1586528	78		1		2.3	507	99		2.4	22	13.87		4253	13.9	429	
					11/07/2019 08:07	1597696	63		3		3.3	1064	96		4.5	35	17.94		4493	17	1001	
					28/08/2019 08:36	1616499	118	<1			2.4	675	98		1.3	51	22.37		1435	16.8	557	
					25/09/2019 09:00	1627830	59		2		1.2	775	98		1.9	36	6.17		4608	15.1	716	
											2					29						
DCC	DB 120	123_ESTUARY	130801	(130801) Liffey Est	18/04/2019 08:03	1565254	247		3		1.9	669	94		1.8	46	31.3		622	9	422	
					15/05/2019 08:12	1575104	335		5		68.8	623	96		0.05	47	32.09		395	12.3	288	
					13/06/2019 09:20	1586529	69		2		4.3	69	99		3.9	5	32.08		86	13.9	20	
					11/07/2019 08:07	1597697	117		1		7.7	236	100		2	36	32.82		213	16.3	119	
					28/08/2019 08:36	1616500	103	<1			2.9	318	93		3.1	48	32.54		606	17	215	
					25/09/2019 09:00	1627831	130	<1			8.5	321	96		0.7	48	32.44		607	15.6	191	
											6					47						
DCC	DB 210	123_ESTUARY	130810	(130810) Liffey Est	18/04/2019 08:11	1565255	110	<1			0.8	2419	100		1.6	27	9.03		2868	9.3	2309	
					15/05/2019 08:23	1575105	78		2		1.1	1262	102		0.2	17	16.21		987	13.5	1184	
					13/06/2019 09:31	1586530	59	<1			2.7	126	99		1.3	5	25.85		149	13.9	67	
					11/07/2019 08:16	1597698	101		3		4.3	1014	96		4.3	36	27.84		2343	16.7	913	
					28/08/2019 08:47	1616501	95	<1			2.5	531	101		2	47	26.55		1093	16.6	436	
					25/09/2019 09:00	1627832	77	<1			1.6	1155	98		1.2	51	18.68		4068	15.4	1078	
											2.1					32						
DCC	DB 210	123_ESTUARY	130811	(130811) Liffey Est	18/04/2019 09:12	1565256	134	<1			2.4	204	101		2.4	41	33.86		182	8.9	70	
					15/05/2019 08:23	1575106	148		1		6.5	268	97		0.05	45	33.78		164	12.3	120	
					13/06/2019 09:31	1586531	55	<1			1.6	55	100		5	5	32.45		25	13.8	20	
					11/07/2019 08:16	1597699	92	<1			6.3	206	100		1.5	33	33.07		210	16.2	114	
					28/08/2019 08:47	1616502	75	<1			3.2	180	95		1.8	45	32.76		322	17.1	105	
					25/09/2019 09:00	1627833	142	<1			1.5	252	97		1.1	52	32.65		357	15.5	110	
											2.8					43	33.095					





Appendix 7.1.4 Dublin Bay Water Monitoring Points Agreed by the EPA

Report for Samples Taken During the Period: 01/01/2019 - 18/12/2019

Customer	EPA Code	Test List	Sampling Point	Sampling Point Description	Sampled Date	Sample Number	Ammonia µg/l as N	B.O.D. Saline mg/l	Bottom Oxygen % Sat.	Bottom Temperature °C	Chlorophyll a mg/m3	DIN µg/l	Dissolved Oxygen % Sat.	Oxygen at 0 m depth % Sat.	Pheophytin a mg/m3	Phosphorus (React) µg/l SRP as P	Salinity PSU	Salinity (mean) PSU	Silica µg/l as SiO2	Surface Temperature °C	Temperature °C	TON µg/l as N
							Surface Water Objectives for Transitional Water Bodies SI 272 of 2009 Compliant Non-Compliant															
DCC	DB 610	123A_ESTUA	130602	(130602) Irish Sea Dublin, Bailey - Composite Sample	16/05/2019 09:42	1575634	12	1	102.1	11	2.8	12		103.6	0.7	21		34.35	25	11.8		20
					12/06/2019 09:05	1585979	18	<1	102.9	12.5	2.5	18		103.2	1.5	20		34.33	25	12.6		20
					10/07/2019 08:13	1597200	60	<1	103.3	14.3	2.4	135		104.7	1	22		34.12	138	15.4		75
					29/08/2019 08:44	1616962	72	<1	102.3	15.8	1.1	72		103.6	0.1	295		34.3	1383	16.1		20
							2.5															
DCC	DB 430	123A_ESTUA	130702	(130702) Dublin Bay, 1km NE Poolbeg Lighthouse - Composite Sample	16/05/2019 08:58	1575625	164	<1	101.8	11.6	2.5	209		102.6	0.2	41		34.36	94	12		45
					12/06/2019 07:58	1585971	25	1	101	12.5	2.9	25		102.2	0.9	24		34.08	25	12.6		20
					10/07/2019 07:36	1597192	5	<1	101.7	15.2	1.2	25		101.9	2.1	22		34.13	111	15.5		20
					29/08/2019 09:26	1616954	5	<1	102.2	15.9	1.2	25		102.7	0.7	24		34.27	147	16.1		20
							1.9															
DCC	DB 450	123A_ESTUA	130712	(130712) Dublin Bay, South Bull Bouy, 1km SE Poolbeg Lighthouse - Composite Sample	16/05/2019 08:34	1575626	5	<1	100.2	11.1	2	25		100.8	0.5	24		34.44	25	11.5		20
					12/06/2019 07:23	1585972	14	<1	101.8	12.6	1.9	14		102.5	0.8	22		34.16	25	13.2		20
					10/07/2019 07:12	1597193	44	<1	102.1	15.1	1.5	88		103	2.3	21		33.99	133	15.6		44
					29/08/2019 08:03	1616955	15	<1	102.1	15.7	1.3	192		102.7	0.6	254		34.3	1413	16.2		177
							1.7															
DCC	DB 510*	123_ESTUAR	130720	(130720) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Surface Sample	16/05/2019 09:10	1575628	129	<1			1.5	139	102		0.3	36	33.9		86		11.9	20
							1.5															
DCC	DB 510*	123A_ESTUA	130721	(130721) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Depth Sample	16/05/2019 09:10	1575629	33	<1			2.4	33	99		0.6	23	34.44		25		11.2	20
							2.4															
DCC	DB 510*	123A_ESTUA	130722	(130722) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Composite Sample	12/06/2019 08:11	1585974	26	<1	101.7	13	2.3	26		102.6	1.4	25		34.15	25	13.3		20
					10/07/2019 07:50	1597195	5	<1	102.1	15	1.7	25		103.2	2.4	23		34.13	104	15.6		20
					29/08/2019 08:25	1616957	13	<1	101.8	15.8	1.6	264		102.3	0.3	227		34.34	1365	16		251
							1.7 264															
DCC	DB 540*	123A_ESTUA	130732	(130732) Dublin Bay, 2.5km SSE Poolbeg Lighthouse - Composite Sample	16/05/2019 08:45	1575630	10	<1	102.8	10.4	2.3	10		103.5	0.5	22		34.48	25	11.6		20
					12/06/2019 07:41	1585975	34	<1	101.2	12.6	2.3	34		101.8	0.7	20		34.26	25	13		20
					10/07/2019 07:23	1597196	5	<1	102.1	14.5	1.7	25		103.3	0.2	5		34.18	61	15.3		20
					29/08/2019 08:14	1616958	34	<1	101.5	15.9	3.1	243		102.4	0.05	254		34.29	1403	16.1		209
							2.3															
DCC	DB 550	123A_ESTUA	130742	(130742) Dublin Bay, No. 4 Bouy, 2.5km E of S Poolbeg Lighthouse - Composite Sample	16/05/2019 08:24	1575627	31	<1	100.9	11.1	2.8	31		102.6	0.05	26		34.42	25	11.6		20
					12/06/2019 07:15	1585973	16	<1	101.3	12.9	1.7	16		102.6	1	22		34.2	25	13.2		20
					10/07/2019 07:00	1597194	5	<1	102.5	15.1	1.1	25		103.1	2.4	22		34.05	97	15.4		20
					29/08/2019 07:55	1616956	86	<1	101.9	15.9	1.2	394		102.5	0.4	289		34.24	1530	16.1		308
							1.5 394															

DCC	DB 560	123A_ESTUA	130752 (130752) Dublin Bay, Drumleck Point, 5km ENE Poolbeg Lighthouse - Composite Sample	16/05/2019 09:27	1575632	5	<1	101.2	11.3	2.1	25	101.8	0.4	41	34.37	25	11.8	20
				12/06/2019 08:28	1585977	14	<1	102.5	12.3	2.1	14	102.9	1.6	19	34.25	25	12.9	20
				10/07/2019 08:02	1597198	67	<1	103	15.2	2.1	132	103.4	0.4	28	34.12	125	15.3	65
				29/08/2019 09:05	1616964	11	<1	102.3	15.9	0.8	61	102.8	1.9	57	34.28	296	16	50
2.1																		
DCC	DB 570*	123A_ESTUA	130762 (130762) Dublin Bay, 5km ESE Poolbeg Lighthouse - Composite Sample	16/05/2019 09:56	1575633	5	<1	102.4	12.4	1.5	25	103.4	0.2	22	34.49	25	11.5	20
				12/06/2019 09:18	1585978	21	<1	102.6	12.3	2.8	21	103.4	1	23	34.3	25	12.9	20
				10/07/2019 08:31	1597199	89	<1	103.3	15.2	0.9	196	104	2.2	24	34.12	246	15.3	107
				29/08/2019 10:01	1616961	48	<1	101.1	15.8	0.8	327	101.8	0.9	266	34.29	1375	16.1	279
1.2 327																		
DCC	DB 580	123A_ESTUA	130772 (130772) Dublin Bay, Dún Laoghaire, 5km E of S Poolbeg Lighthouse - Composite Sample	16/05/2019 08:12	1575631	18	<1	102.3	11.1	2	18	102.7	0.5	22	34.44	25	11.3	20
				12/06/2019 10:11	1585976	23	<1	102.2	12.5	0.8	23	102.6	1.8	18	34.2	25	13.1	20
				10/07/2019 08:45	1597197	43	<1	101.6	14.5	1.7	43	102.6	1	5	34.16	25	15.5	20
				29/08/2019 10:16	1616959	108	<1	101.5	15.9	0.3	384	101.9	1.4	262	34.33	1614	16.2	276
1.3 384																		

## Appendix 7.1.5 Bathing Water Monitoring 2019

Report for Samples taken during the period : 01/06/2019 to 15/09/2019

Customer EPA CODE Test List Sampling Point Description

Sampled Date Sample Number

Complies with SUFFICIENT Quality  
 Non-Compliance with SUFFICIENT Quality  
 POOLBEG DISCHARGE PLUME

E. coli MPN/100ml Enterococci CFU/100ml Enterococci (Confirmed) CFU/100ml Floating Materials Mineral Oil (visual) pH Phenols\_Olfactory Salinity PSU Surfactants Visual Inspection

DCC ASW 11 121\_BEACH 40520 (40520) Dollymount North

04/06/2019 12:20 1582450  
 09/06/2019 17:30 1584241  
 17/06/2019 12:20 1587645  
 19/06/2019 14:35 1588805  
 23/06/2019 17:10 1589880  
 01/07/2019 11:00 1592934  
 03/07/2019 13:10 1594169  
 07/07/2019 15:35 1595626  
 15/07/2019 11:20 1598761  
 21/07/2019 15:20 1601042  
 29/07/2019 09:40 1604137  
 06/08/2019 16:30 1607217  
 12/08/2019 09:45 1609402  
 14/08/2019 13:25 1610717  
 18/08/2019 14:00 1612049  
 27/08/2019 09:40 1615846  
 01/09/2019 13:40 1617706  
 09/09/2019 09:35 1621323  
 11/09/2019 10:45 1622367

63		39	Absent	Absent	8.4	Absent	31.9	Absent	Normal
10		6	Absent	Absent	8.8	Absent	33.3	Absent	Normal
63		70	Ectocarpus Present	Absent	8.6	Absent		Absent	Ectocarpus Present
<10		12	Ectocarpus Present	Absent	8.8	Absent	33.6	Absent	Ectocarpus present
<10		1	Absent	Absent	8.8	Absent	33.5	Absent	Normal
428		25	Absent	Absent	8.1	Absent	33.2	Absent	Normal
243		1	Ectocarpus Present	Absent	8.5	Absent	34.2	Absent	Ectocarpus present
20		10	Ectocarpus Present	Absent	8.7	Absent	33.5	Absent	Ectocarpus present
<10		1	Ectocarpus Present	Absent	8.3	Absent	33.2	Absent	Ectocarpus present
			Ectocarpus Present	Absent	7.2	Absent	33.4	Absent	Ectocarpus present
108		13	Ectocarpus Present	Absent	8.2	Absent	34.1	Absent	Ectocarpus Present
213		240	Ectocarpus Present	Absent	7.5	Absent	33.9	Absent	Ectocarpus present
246		43	Absent	Absent	8.3	Absent	34	Absent	Normal
20		11	Absent	Absent	8.2	Absent	32.9	Absent	Normal
<10		9	Absent	Absent	8.4	Absent	33.2	Absent	Normal
<10	<1		Ectocarpus Present	Absent	8.4	Absent	33.5	Absent	Ectocarpus present
10		18	Ectocarpus Present	Absent	8.3	Absent	33.9	Absent	Ectocarpus present
10		17	Absent	Absent	8.2	Absent	33.1	Absent	Normal
226		16	Absent	Absent	8.2	Absent	32.8	Absent	Normal

Number 18 18

DCC ASW 12\* 121\_BEACH 40526 (40526) Dollymount Bathing Zone

04/06/2019 12:40 1582451  
 09/06/2019 17:45 1584242  
 17/06/2019 12:50 1587646  
 19/06/2019 14:20 1588806  
 23/06/2019 17:30 1589881  
 01/07/2019 11:20 1592935  
 03/07/2019 13:25 1594170  
 07/07/2019 15:55 1595627  
 15/07/2019 11:40 1598762  
 21/07/2019 15:40 1601043  
 29/07/2019 09:55 1604138  
 06/08/2019 16:40 1607218  
 12/08/2019 10:00 1609403  
 14/08/2019 13:40 1610718  
 18/08/2019 14:30 1612050  
 27/08/2019 09:25 1615847  
 01/09/2019 14:00 1617707  
 09/09/2019 09:55 1621324  
 11/09/2019 11:00 1622368

109		90	Absent	Absent	8.5	Absent	31.5	Absent	Normal
<10		3	Absent	Absent	8.8	Absent	33.8	Absent	Normal
<10		29	Ectocarpus Present	Absent	8.6	Absent	33.5	Absent	Ectocarpus Present
<10		1	Ectocarpus Present	Absent	8.5	Absent	33.1	Absent	Ectocarpus present
<10		1	Absent	Absent	8.8	Absent	33.7	Absent	Normal
41		4	Absent	Absent	8.1	Absent	32.6	Absent	Normal
216		3	Ectocarpus Present	Absent	8.4	Absent	33.9	Absent	Ectocarpus present
20		3	Ectocarpus Present	Absent	8.7	Absent	33.2	Absent	Ectocarpus present
30		4	Ectocarpus Present	Absent	8.3	Absent	34.2	Absent	Ectocarpus present
41		48	Ectocarpus Present	Absent	7.1	Absent	33.5	Absent	Ectocarpus present
341		34	Ectocarpus Present	Absent	8.2	Absent	33.7	Absent	Ectocarpus Present
41		57	Ectocarpus Present	Absent	8.3	Absent	33.8	Absent	Ectocarpus present
233		13	Absent	Absent	8.3	Absent	33.9	Absent	Normal
75		28	Absent	Absent	8.2	Absent	32.8	Absent	Normal
31		12	Absent	Absent	8.5	Absent	33.8	Absent	Normal
20		12	Ectocarpus Present	Absent	8.4	Absent	33.6	Absent	Ectocarpus present
30		17	Ectocarpus Present	Absent	8.4	Absent	34.1	Absent	Ectocarpus present
63		13	Absent	Absent	8.2	Absent	33.3	Absent	Normal
98		15	Absent	Absent	8.2	Absent	32.7	Absent	Normal

Number 19 19

DCC ASW 13 121\_BEACH 40530 (40530) Dollymount South

04/06/2019 13:20 1582452  
 09/06/2019 18:00 1584243  
 17/06/2019 13:10 1587647  
 19/06/2019 14:00 1588807  
 23/06/2019 18:00 1589882  
 01/07/2019 11:30 1592936  
 03/07/2019 13:45 1594171  
 07/07/2019 16:25 1595628  
 15/07/2019 12:31 1598763

120		48	Ectocarpus Present	Absent	8.5	Absent	31.4	Absent	Ectocarpus present
<10		22	Absent	Absent	8.5	Absent	34.6	Absent	Normal
20		5	Ectocarpus Present	Absent	8.3	Absent	33.3	Absent	Ectocarpus Present
<10		1	Ectocarpus Present	Absent	8.3	Absent	33	Absent	Ectocarpus present
84		20	Ectocarpus Present	Absent	8.5	Absent	32.7	Absent	Ectocarpus present
41		6	Absent	Absent	8.3	Absent	32.4	Absent	Normal
145		59	Absent	Absent	8.3	Absent	34.1	Absent	Normal
31		5	Ectocarpus Present	Absent	8.6	Absent	33.3	Absent	Ectocarpus present
41		15	Ectocarpus Present	Absent	8.1	Absent	33.2	Absent	Ectocarpus present

21/07/2019 16:00 1601044  
 29/07/2019 10:30 1604139  
 06/08/2019 17:00 1607219  
 12/08/2019 10:20 1609404  
 14/08/2019 13:55 1610719  
 18/08/2019 15:00 1612051  
 27/08/2019 10:00 1615848  
 01/09/2019 14:10 1617708  
 09/09/2019 10:15 1621325  
 11/09/2019 11:30 1622369

546	90	Ectocarpus Present	Absent	8	Absent	33.6	Absent	Ectocarpus present
31	20	Ectocarpus Present	Absent	8.2	Absent	33.3	Absent	Ectocarpus Present
10	8	Absent	Absent	8.2	Absent	33.9	Absent	Normal
109	26	Ectocarpus Present	Absent	8.2	Absent	34.3	Absent	Ectocarpus Present
638	100	Ectocarpus Present	Absent	7.5	Absent	32.3	Absent	Ectocarpus Present
20	6	Absent	Absent	8.1	Absent	33.5	Absent	Normal
86	12	Ectocarpus Present	Absent	8.2	Absent	33.1	Absent	Ectocarpus present
10	3	Ectocarpus Present	Absent	8.1	Absent	34	Absent	Ectocarpus present
265	50	Absent	Absent	8.2	Absent	33.1	Absent	Normal
10	14	Absent	Absent	8.2	Absent	33.3	Absent	Normal

Number

19

19

DCC ASW 14 121\_BEACH 40535 (40535) Bull Wall Wood Causeway

04/06/2019 13:00 1582453  
 09/06/2019 18:20 1584244  
 17/06/2019 13:20 1587648  
 19/06/2019 13:45 1588808  
 23/06/2019 18:30 1589883  
 01/07/2019 11:45 1592937  
 03/07/2019 14:00 1594172  
 07/07/2019 16:45 1595629  
 15/07/2019 12:35 1598764  
 21/07/2019 16:30 1601045  
 29/07/2019 10:15 1604140  
 06/08/2019 17:20 1607220  
 12/08/2019 10:35 1609405  
 14/08/2019 14:05 1610720  
 18/08/2019 15:30 1612052  
 27/08/2019 09:50 1615849  
 01/09/2019 14:20 1617709  
 09/09/2019 10:05 1621326  
 11/09/2019 11:15 1622370

218	28	Absent	Absent	8.2	Absent	32.4	Absent	Normal
10	8	Absent	Absent	8.5	Absent	31.8	Absent	Normal
538	87	Absent	Absent	8.2	Absent	28.7	Absent	Normal
31	11	Absent	Absent	8.1	Absent	31	Absent	Normal
<10	6	Absent	Absent	8.1	Absent	32.1	Absent	Normal
228	40	Absent	Absent	8.2	Absent	31.4	Absent	Normal
20	2	Absent	Absent	8.3	Absent	33.3	Absent	Normal
31	4	Absent	Absent	8.3	Absent	32.2	Absent	Normal
135	20	Absent	Absent	8.2	Absent	31.4	Absent	Normal
134	5	Absent	Absent	8	Absent	32.5	Absent	Normal
187	50	Absent	Absent	8.2	Absent	32	Absent	Normal
41	8	Absent	Absent	8.1	Absent	31.6	Absent	Normal
404	99	Absent	Absent	8.2	Absent	30.8	Absent	Normal
20	5	Absent	Absent	8.1	Absent	32.5	Absent	Normal
72	15	Absent	Absent	8.2	Absent	34	Absent	Normal
218	71	Absent	Absent	8.2	Absent	31.4	Absent	Normal
52	6	Absent	Absent	8.1	Absent	33.2	Absent	Normal
1169	320	Absent	Absent	8.1	Absent	32.1	Absent	Normal
86	32	Absent	Absent	8.2	Absent	31.6	Absent	Normal

Number

19

19

DCC ASW 15 121\_BEACH 40538 (40538) Poolbeg Outfall Main Discharge

04/06/2019 13:00 1582443  
 09/06/2019 16:05 1584245  
 17/06/2019 11:00 1587666  
 19/06/2019 13:00 1588809  
 23/06/2019 16:00 1589884  
 01/07/2019 12:00 1592938  
 03/07/2019 13:10 1594173  
 07/07/2019 17:00 1595630  
 15/07/2019 13:00 1598765  
 21/07/2019 15:10 1601046  
 29/07/2019 10:50 1604141  
 06/08/2019 15:55 1607221  
 12/08/2019 11:05 1609406  
 14/08/2019 14:35 1610721  
 18/08/2019 13:40 1612042  
 27/08/2019 10:25 1615850  
 01/09/2019 11:50 1617710  
 09/09/2019 10:40 1621327  
 11/09/2019 13:00 1622452

>24196	>2000	Absent	Absent	7.6	Absent	27	Absent	Normal
100	36	Absent	Absent	8	Absent	32	Absent	Normal
1560	440	Absent	Absent	7.9	Absent	30	Absent	Normal
1970	49	Absent	Absent	7.8	Absent	21.8	Absent	Normal
8164	1891	Absent	Absent	7.3	Absent	19	Absent	Normal
43520	4700	Absent	Absent	7.8	Absent	26.1	Absent	Normal
309	1545	Absent	Absent	7.7	Absent	24.2	Absent	Normal
2187	590	Absent	Absent	7.9	Absent	28	Absent	Normal
591	100	Absent	Absent	8	Absent	32.3	Absent	Normal
200	118	Absent	Absent	7.9	Absent	32	Absent	Normal
3873	570	Absent	Absent	7.8	Absent	25.4	Absent	Normal
108	40	Absent	Absent	8	Absent	32.5	Absent	Normal
132	330	Absent	Absent	7.8	Absent	26.4	Absent	Normal
1580	510	Absent	Absent	7.9	Absent	29.7	Absent	Normal
581	240	Absent	Absent	7.9	Absent	29.8	Absent	Normal
6510	360	Absent	Absent	7.6	Absent	20.4	Absent	Normal
2909	460	Absent	Absent	7.9	Absent	28.2	Absent	Normal
>24196	4200	Absent	Absent	7.6	Absent	20.4	Absent	Normal
3640	5300	Absent	Absent	7.6	Absent	30	Absent	Normal

Number

19

19

DCC ASW 16 121\_BEACH 40540 (40540) Half Moon Club S-Side Wall

04/06/2019 13:20 1582444  
 09/06/2019 16:35 1584246  
 17/06/2019 11:40 1587667  
 19/06/2019 13:30 1588810  
 23/06/2019 16:30 1589885  
 01/07/2019 12:20 1592939  
 03/07/2019 13:25 1594174  
 07/07/2019 17:30 1595631  
 15/07/2019 13:10 1598766  
 21/07/2019 15:30 1601047  
 29/07/2019 11:10 1604142  
 06/08/2019 16:20 1607222

<10		5	Absent	Absent	8.2	Absent	33.8	Absent	Normal
<10	<1		Absent	Absent	8.2	Absent	33.5	Absent	Normal
31	21	Absent	Absent	8.2	Absent	30.3	Absent	Normal	
10	4	Absent	Absent	8.1	Absent	32.1	Absent	Normal	
20	1	Absent	Absent	8.1	Absent	33.6	Absent	Normal	
345	38	Absent	Absent	8.1	Absent	32.8	Absent	Normal	
<10	8	Absent	Absent	8.2	Absent	33.3	Absent	Normal	
30	3	Absent	Absent	8.2	Absent	33.2	Absent	Normal	
10	39	Absent	Absent	8.1	Absent	33.9	Absent	Normal	
10	2	Absent	Absent	8	Absent	32.8	Absent	Normal	
20	2	Absent	Absent	8.1	Absent	33.5	Absent	Normal	
10	6	Absent	Absent	8.2	Absent	33.7	Absent	Normal	

12/08/2019 11:35 1609407  
 14/08/2019 15:00 1610722  
 18/08/2019 14:05 1612043  
 27/08/2019 10:45 1615851  
 01/09/2019 12:20 1617711  
 09/09/2019 11:00 1621328  
 11/09/2019 13:30 1622453

20		3	Absent	Absent	8.1	Absent	33.3	Absent	Normal
41		8	Absent	Absent	8.1	Absent	33.2	Absent	Normal
<10		10	Absent	Absent	8.2	Absent	33.9	Absent	Normal
31		11	Absent	Absent	8.2	Absent	33.4	Absent	Normal
<10		2	Absent	Absent	8.1	Absent	34.2	Absent	Normal
2282		330	Absent	Absent	8	Absent	32.6	Absent	Normal
52		9	Absent	Absent	8.1	Absent	33.3	Absent	Normal

Number 19 19

DCC ASW 17\* 121\_BEACH 40545 (40545) Sandymount

SAMPLE DISCOUNTED

04/06/2019 13:40 1582445  
 09/06/2019 17:20 1584247  
 17/06/2019 12:00 1587668  
 19/06/2019 14:05 1588811  
 23/06/2019 16:45 1589886  
 01/07/2019 13:00 1592940  
 03/07/2019 13:45 1594175  
 07/07/2019 16:40 1595632  
 15/07/2019 13:25 1598767  
 21/07/2019 16:00 1601048  
 29/07/2019 11:50 1604143  
 06/08/2019 16:45 1607223  
 12/08/2019 12:05 1609408  
 14/08/2019 15:32 1610723  
 18/08/2019 14:35 1612044  
 27/08/2019 11:00 1615852  
 01/09/2019 12:50 1617712  
 09/09/2019 11:35 1621329  
 11/09/2019 11:30 1622454

441	>2000		Ectocarpus Present	Absent	8.2	Absent	30.2	Absent	Ectocarpus present
<10		1	Absent	Absent	8.2	Absent	35.1	Absent	Normal
20		3	Absent	Absent	8.2	Absent	32.5	Absent	Normal
<10	<1		Absent	Absent	8.2	Absent	34.1	Absent	Normal
20		8	Absent	Absent	8.2	Absent	33.9	Absent	Normal
<10		5	Absent	Absent	8.2	Absent	33.4	Absent	Normal
41		34	Absent	Absent	8.1	Absent	34.7	Absent	Normal
<10		2	Absent	Absent	8.2	Absent	34.4	Absent	Normal
10		1	Absent	Absent	8.1	Absent	35	Absent	Normal
31		13	Absent	Absent	8.1	Absent	33.6	Absent	Normal
<10		3	Absent	Absent	8.1	Absent	34.7	Absent	Normal
<10		8	Absent	Absent	8.3	Absent	34	Absent	Normal
10		8	Absent	Absent	8.2	Absent	32.3	Absent	Normal
31		8	Absent	Absent	8.4	Absent	32.4	Absent	Normal
10		6	Ectocarpus Present	Absent	8.3	Absent	33.5	Absent	Ectocarpus present
487		56	Absent	Absent	8	Absent	34.6	Absent	Normal
10		12	Ectocarpus Present	Absent	8.1	Absent	34.4	Absent	Ectocarpus present
265		50	Ectocarpus Present	Absent	8.2	Absent	32.8	Absent	Ectocarpus present
75		13	Ectocarpus Present	Absent	8.2	Absent	33.5	Absent	Ectocarpus present

Number 18 18

DCC ASW 18\* 121\_BEACH 40550 (40550) Merrion Strand

04/06/2019 13:55 1582446  
 09/06/2019 17:40 1584248  
 17/06/2019 12:25 1587669  
 19/06/2019 14:25 1588812  
 23/06/2019 17:05 1589887  
 01/07/2019 13:10 1592941  
 03/07/2019 14:00 1594176  
 07/07/2019 16:20 1595633  
 15/07/2019 13:50 1598768  
 21/07/2019 16:20 1601049  
 29/07/2019 12:05 1604144  
 06/08/2019 17:00 1607224  
 12/08/2019 12:20 1609409  
 14/08/2019 16:05 1610724  
 18/08/2019 14:55 1612045  
 27/08/2019 11:30 1615853  
 01/09/2019 13:10 1617713  
 09/09/2019 11:50 1621330  
 11/09/2019 11:50 1622455

>24196	>2000		Ectocarpus Present	Absent	8.2	Absent	31.4	Absent	Ectocarpus present
<10		16	Absent	Absent	8.3	Absent	34	Absent	Normal
<10		8	Absent	Absent	8.2	Absent	32.9	Absent	Normal
10		7	Absent	Absent	8.3	Absent	33.8	Absent	Normal
30		54	Absent	Absent	9.1	Absent	9	Absent	Normal
189		15	Absent	Absent	8.2	Absent	33.5	Absent	Normal
97		60	Absent	Absent	8.8	Absent	21.8	Absent	Normal
833	280		Absent	Absent	8.2	Absent	35.1	Absent	Normal
109		5	Absent	Absent	8.1	Absent	35	Absent	Normal
20		19	Absent	Absent	8.1	Absent	33.3	Absent	Normal
63		25	Absent	Absent	8.1	Absent	34.8	Absent	Normal
1334		125	Absent	Absent	8.5	Absent	35	Absent	Normal
20		4	Absent	Absent	8.2	Absent	33.4	Absent	Normal
97		41	Absent	Absent	8.3	Absent	32.8	Absent	Normal
5794	290		Ectocarpus Present	Absent	8.5	Absent	35.9	Absent	Ectocarpus present
211		32	Absent	Absent	8.3	Absent	34.3	Absent	Normal
<10		2	Ectocarpus Present	Absent	8.1	Absent	34.4	Absent	Ectocarpus present
2282	500		Ectocarpus Present	Absent	8.2	Absent	31.3	Absent	Ectocarpus present
2495		145	Ectocarpus Present	Absent	8.2	Absent	33.1	Absent	Ectocarpus present

Number 19 19

**Appendix 7.2 – Priority Substance Assessment**

**Table 7.2.1:** Screening of Effluent

**Table 7.2.2:** Impact on Receiving Waters

**Table 7.2.3:** Screening of Influent

**Table 7.2.4:** Screening of Influent Lines to Ringsend WWTP

### **Ringsend Influent and Effluent Priority Substances Screening, 2019.**

To comply with condition **4.11.1** of Licence D0034-01, 2 sub-samples of the Ringsend composite influent and effluent were analysed in 2019 for a comprehensive suite of parameters from the:

- PRTR test suite
- EPA's 54 parameter test suite (Appendix 1, EPA Guidance on the Screening for Priority Substances for Waste Water Discharge Licences) which was issued on 17/01/11.

### **Summary of SBR Effluent Screening Results:**

**Effluent Sample Reference 1659492 taken on 16/12/19 .**

**See Table 7.2.1.** Many of the parameters tested for the PRTR suite in this effluent sample were reported as below the detection limit.

Parameters from the EPA's Guidance document detected in this effluent sample are highlighted in **Table 7.2.1**. These included low (microgram and sub-microgram per litre) levels of :

**VOCs**: Trichloromethane was detected (1.35 ug/l).

**Cresols** : m,p – Methylphenol was detected (1 ug/l).

**Metals** : The metals Arsenic (1.5 ug/l), Copper (28 ug/l), Zinc (60 ug/l), Mercury (0.05 ug/l), Selenium (0.84 ug/l), Barium (27.3 ug/l), and Cobalt (3 ug/l) were detected.

Results for other general parameters and additional tests were in the normal range for effluent sewage.

See highlighted parameters in **Table 7.2.1**.

**Table 7.2.1. EPA Appendix 1 – Ringsend Effluent Sample 1659492 - 2019 Screening**

**EPA Parameters Screened for in Waste Water Discharges**

No.	Compound	Result	Group of Compounds
1.	Benzene	< 1.00 ug/l	<b>VOC's</b>
2.	Carbon Tetrachloride	< 1.00 ug/l	
3	1,2-Dichloroethane	< 1.00 ug/l	
4	Dichloromethane	< 1.00 ug/l	
	Bromodichloromethane	< 1.00 ug/l	
5	Tetrachloroethylene	< 1.00 ug/l	
6	Trichloroethylene	< 1.00 ug/l	
7	Trichlorobenzenes	< 1.00 ug/l	(1,2,4)
8	Trichloromethane (Chloroform)	<b>1.35 ug/l</b>	
9	Xylenes (all isomers)	< 2.00 ug/l	
10	Ethyl Benzene	< 1.00 ug/l	
11	Toluene	< 1.00 ug/l	
12	Naphthalene	< 1.00 ug/l	<b>PAH's</b>
13	Fluoranthene	< 2.00 ug/l	
14	Benzo(k)fluoranthene	< 2.00 ug/l	
15	Benzo(ghi)perylene	< 2.00 ug/l	
16	Indeno(1,2,3-c,d)pyrene	< 2.00 ug/l	
17	Benzo(b)fluoranthene	< 2.00 ug/l	
18	Benzo(a)pyrene	< 2.00 ug/l	
	Acenaphthene	< 2.00 ug/l	
	Pyrene	< 2.00 ug/l	
	Anthracene	< 2.00 ug/l	
	Fluorene	< 2.00 ug/l	
	Phenanthrene	< 2.00 ug/l	
	Benz(a)anthracene	< 2.00 ug/l	
		<b>&lt; 25.00 ug/l</b>	<b>Total PAH's</b>

No.	Compound	Result	Group of Compounds	
19	Di(2-ethylhexyl)phthalate (DEHP)	< 10.0 ug/l	<b>Plasticisers</b>	
	Diethyl Phthalate	< 2.0 ug/l		
20	Isodrin	< 13 ng/l	<b>Pesticides</b>	
21	Dieldrin	< 12 ng/l		
22	Diuron	< 0.50 ug/l		
23	Isoproturon	< 0.50 ug/l		
24	Atrazine	< 0.044 ug/l		
25	Simazine	< 0.054 ug/l		
26	Glyphosate	< 1 ug/l		
27	Mecoprop	< 0.04 ug/l		
28	2,4-D	< 0.05 ug/l		
29	MCPA	< 0.05 ug/l		
30	Linuron	< 0.50 ug/l		
31	Dichlobenil	< 9 ng/l		
32	2,6-Dichlorobenzamide	N/A*		
	Diazinon	< 0.012 ug/l		
	Dimethoate	< 0.020 ug/l		
33	PCB's (Sum of 7)	< 0.070 ug/l	<b>PCB's</b>	
34	Phenols	< 1.5 ug/l	<b>Phenols</b>	
	m,p- Methylphenol	<b>0.65 ug/l</b>		<b>Cresols</b>
	o- Methylphenol	< 2 ug/l		
35	Lead (Total as Pb)	< 6 ug/l	<b>Metals</b>	
36	Arsenic (Total as As))	<b>1.5 ug/l</b>		
37	Copper (Total as Cu)	<b>28 ug/l</b>		

No.	Compound	Result	Group of Compounds
38	Zinc (Total as Zn)	60 ug/l	
39	Cadmium (Total as Cd)	< 0.60 ug/l	
40	Mercury (Total as Hg)	0.05 ug/l	
41	Chromium (Total as Cr)	< 2 ug/l	
42	Selenium (Total as Se)	0.84 ug/l	
43	Antimony (Total as Sb)	< 1.6 ug/l	
44	Molybdenum (Total as Mo)	< 3 ug/l	
45	Tin (Total as Sn)	< 7 ug/l	
	Organo-Tin	< 0.3 ug/l	
46	Barium (Total as Ba)	27.3 ug/l	
47	Boron (Total as B)	< 0.23 mg/l	
48	Cobalt (Total as Co)	3 ug/l	
49	Vanadium (Total as V)	< 4.00 ug/l	
50	Nickel (Total as Ni)	< 3 ug/l	
51	Fluoride (as F)	0.39 mg/l	General
52	Chloride (as Cl)	330 mg/l	
53	TOC (as C)	-	
54	Cyanide (Total as CN)	< 9 ug/l	
	<b>(Sample 1659476)</b>		
55	Conductivity	1528 uS/cm (20 degrees C)	Additional Tests
56	Hardness (mg/l CaCO3)	N/A	
57	pH	7.7	

### Assessment of the Significance of the Discharge SW1 on Receiving Water Quality – 2019

A summary of effluent screening results is presented below with a limited assessment of the significance of the discharge on receiving water. Note that the SBR effluent results are sampled at the licensed point of discharge (SW1) and that a mixing zone boundary has not been defined in WWDL D0034-01. SBR Effluent from SW1 receives a significant dilution within the undefined near field mixing zone before receiving water standards are applicable.

Chromium (Total), Copper and Zinc were the only metals screened in the effluent sample that exceeded the EQS's set for the receiving waters. Diazinon was close to the annual average (AA) EQS.

A minimum dilution factor of 2 to 6 in the near field mixing zone allows for compliance with the EQS's for specific pollutants which are set as an annual average (AA).

This assessment does not indicate a significant impact from the specific pollutants listed for the receiving waters outside the near field of the SW1 discharge point.

**Table 7.2.2 Assessment of the Significance of the Discharge SW1 on Receiving Water Environmental Quality Standards for Specific Pollutants (Table 10, S.I. No. 272 of 2009)**

Specific Pollutant Parameter	AA-EQS (ug/l)	Effluent 1659492 (16/12/19)
		SW1
Arsenic	20	1.5
Chromium VI	0.6	< 2
Copper	5	28
Cyanide	10	< 9
Diazinon	0.01	< 0.012
Dimethoate	0.8	< 0.020
Fluoride	1,500	390
Glyphosate	-	< 1
Linuron	0.7	< 0.50
Mancozeb	2	-
Monochlorobenzene	25	< 1
Phenols	8	< 1.5
Toluene	10	< 1.0
Xylenes	10	< 2.0
Zinc	40	60

\* = Total Chromium which is > Chromium VI

## Ringsend Influent Screening, 2019

To comply with condition **4.11.2 of Licence D0034-01**, a sample of the Ringsend influent was analysed during 2019 (on 16/12/19) – same date as the effluent sample reported above, for agglomeration regulation purposes.

Investigation of the sources of any dangerous substances detected in monitoring of the influent was carried out by monitoring the 4 incoming lines to the plant on 16/12/19.

Samples were tested for :

- PRTR test suite
- EPA's 54 parameter test suite (Appendix 1, EPA Guidance on the Screening for Priority Substances for Waste Water Discharge Licenses ) issued on 17/01/11.

### **Summary of Influent Screening Results:**

#### **2019 – Influent Sample Reference 1659491 of 16/12/19.**

See **Table 7.2.3**. Many of the parameters tested for the PRTR suite in this influent sample were reported as below the detection limit.

Parameters from the EPA's Guidance document detected in this influent sample included low (sub-microgram and microgram per litre) concentrations of :

- **VOCs** : Tri-chloromethane (3.76 ug/l),
- **BTEX Compounds** : Toluene (1.1 ug/l).
- **PAH's** : Naphthalene (2.02 ug/l) was detected. All other PAH's were reported at <40.0 ug/l.
- **Herbicides / Pesticides** : Glyphosate (1.10 ug/l).
- **Phenols**: Phenol (85.2 ug/l).
- **Cresols**: M,p-Methylphenol was detected (114 ug/l).
- **Metals**: The metals Arsenic (1.7 ug/l), Copper (67 ug/l), Zinc (121 ug/l), Chromium (3 ug/l), Molybdenum (4 ug/l), Barium (36.3 ug/l), Boron (0.26 mg/l) and Nickel (6 ug/l) were detected.

See highlighted parameters in **Table 7.2.3**.

Results for general parameters and additional tests were in the normal range for influent sewage.

**Table 7.2.3 - EPA Appendix 1 – Ringsend Influent Sample 1659491 – 2019 PRTR Screening**

**EPA Parameters Screened for in Waste Water Discharges**

No.	Compound	Result	Group of Compounds
1.	Benzene	< 1.00 ug/l	<b>VOC's</b>
2.	Carbon Tetrachloride	< 1.00 ug/l	
3	1,2-Dichloroethane	< 1.00 ug/l	
4	Dichloromethane	< 1.00 ug/l	
	Bromodichloromethane	< 1.00 ug/l	
5	Tetrachloroethylene	< 1.00 ug/l	
6	Trichloroethylene	< 1.00 ug/l	
7	Trichlorobenzenes	< 1.00 ug/l	
8	Trichloromethane	<b>3.76 ug/l</b>	
9	Xylenes (all isomers)	< 2.00 ug/l	
10	Ethyl Benzene	< 1.00 ug/l	
11	Toluene	<b>1.1 ug/l</b>	
12	Naphthalene	<b>2.02 ug/l</b>	<b>PAH's</b>
13	Fluoranthene	<40.0 ug/l	
14	Benzo(k)fluoranthene	< 40.0 ug/l	
15	Benzo(ghi)perylene	< 40.0 ug/l	
16	Indeno(1,2,3-c,d)pyrene	< 40.0 ug/l	
17	Benzo(b)fluoranthene	< 40.0 ug/l	
18	Benzo(a)pyrene	< 40.0 ug/l	
	Acenaphthene	< 40.0 ug/l	
	Pyrene	< 40.0 ug/l	
	Anthracene	< 40.0 ug/l	
	Fluorene	< 40.0 ug/l	
	Phenanthrene	< 40.0 ug/l	
		<b>&lt; 442.02 ug/l</b>	<b>Total PAH's*</b>

No.	Compound	Result	Group of Compounds	
19	Di(2-ethylhexyl)phthalate (DEHP)	< 200.0 ug/l	<b>Plasticisers</b>	
	Diethyl Phthalate	< 40.0 ug/l		
20	Isodrin	< 26 ng/l	<b>Pesticides</b>	
21	Dieldrin	< 22 ng/l		
22	Diuron	< 0.50 ug/l		
23	Isoproturon	< 0.50 ug/l		
24	Atrazine	< 0.087 ug/l		
25	Simazine	< 0.108 ug/l		
26	Glyphosate	<b>1.1 ug/l</b>		
27	Mecoprop	< 0.16 ug/l		
28	2,4-D	< 0.20 ug/l		
29	MCPA	< 0.20 ug/l		
30	Linuron	< 0.50 ug/l		
31	Dichlobenil	< 17 ng/l		
32	2,6-Dichlorobenzamide	N/A		
	Diazinon	< 0.023 ug/l		
	Dimethoate	< 0.029 ug/l		
33	PCB's (Sum of 7)	< 0.136 ug/l	<b>PCB's</b>	
34	Phenols	<b>85.2 ug/l</b>	<b>Phenols</b>	
	m,p- Methylphenol	<b>114 ug/l</b>		<b>Cresols</b>
	o- Methylphenol	< 40.0 ug/l		
35	Lead (Total as Pb)	< 6 ug/l	<b>Metals</b>	
36	Arsenic (Total as As)	<b>1.7 ug/l</b>		
37	Copper (Total as Cu)	<b>67 ug/l</b>		
38	Zinc (Total as Zn)	<b>121 ug/l</b>		

No.	Compound	Result	Group of Compounds
39	Cadmium (Total as Cd)	< 0.6 ug/l	
40	Mercury (Total as Hg)	< 0.01 ug/l	
41	Chromium (Total as Cr)	<b>3 ug/l</b>	
42	Selenium (Total as Se)	0.75 ug/l	
43	Antimony (Total as Sb)	< 1.6 ug /l	
44	Molybdenum (Total as Mo)	<b>4 ug/l</b>	
45	Tin (Total as Sn))	< 7.0 ug/l	
	Organo-Tin	< 0.30 ug/l	
46	Barium (Total as Ba)	<b>36.3 ug/l</b>	
47	Boron (Total as B)	<b>0.26 mg/l</b>	
48	Cobalt (Total as Co)	< 2 ug/l	
49	Vanadium (Total as V)	< 4.00 ug/l	
50	Nickel (Total as Ni)	<b>6 ug/l</b>	
51	Fluoride (as F)	0.48 mg/l	<b>General</b>
52	Chloride	260 mg/l	
53	TOC	N/A	
54	Cyanide	< 9 ug/l	
	<b>(sample ( 1659474 )</b>		
55	Conductivity	1613 uS/cm (20 degrees C)	<b>Additional Tests</b>
56	Hardness (mg/l CaCO3)	N/A	
57	pH	7.5	

## Summary of Influent Lines Screening Results:

### 2019 – Influent Lines - Sample References 1659493, 1659494, 1659495 and 1659496 all sampled on 16/12/19.

To isolate the source of parameters detected in the Influent, samples were taken from the 4 main influent feeder lines on 16/12/19 as follows:

- 1514431: Dun Laoghaire – West Pier
- 1514330: Dodder Valley Sewer - UCD FM-10
- 1514432: North Dublin Drainage System – Sutton Sump
- 1514218: Ringsend – Main Lift Pumping Station

See **Table 7.2.4**. These samples were tested for the PRTR test suite. Many of the parameters in the influent feeder line samples were reported as below the detection limit.

Parameters detected in the 4 feeder lines have been compared with those detected in the influent sample (see **Table 7.2.3** above).

#### **1659493 : Dun Laoghaire – West Pier**

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (3.32 ug/l).

Phenols (22.6 ug/l) and the cresol m,p-Methyl Phenol (44.5 ug/l) were detected in this sample.

The metals Lead (10 ug/l), Arsenic (2 ug/l), Copper (37 ug/l), Zinc (60 ug/l), Mercury (0.03 ug/l) Selenium (1.2 ug/l) and Barium (29.2 ug/l) were detected.

See highlighted parameters in **Table 7.2.4**.

#### **1659494: Dodder Valley Sewer - UCD FM-10**

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (2.7 ug/l).

Phenol was detected at 51.8 ug/l and the cresol m,p- Methyl Phenol at 72.6 ug/l.

The metals Arsenic (1.5 ug/l), Copper (28 ug/l), Zinc (60 ug/l), Selenium (1.6 ug/l), Tin (7.00 ug/l), and Barium (22.2 ug/l ) were detected.

See highlighted parameters in **Table 7.2.4**.

#### **1659495: North Dublin Drainage System – Sutton Sump**

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (4.57 ug/l).

Phenols (44.5 ug/l) and the cresol m,p- Methyl Phenol (115 ug/l) were detected.

The metals Arsenic (1.7 ug/l), Copper (88 ug/l), Zinc (180 ug/l), Selenium (1.9 ug/l), Barium (36.2 ug/l) and Nickel (10 ug/l) were detected in this sample.

See highlighted parameters in **Table 7.2.4**.

#### **1659496: Ringsend – Main Lift Pumping Station**

Only 1 parameter from the Volatile Organic Carbons suite was detected in this sample - Trichloromethane (3.6 ug/l).

The PAH Naphthalene (10.2 ug/l) was detected in this sample.

Phenol (9.29 ug/l) and the cresol m,p-Methylphenol (48.5 ug/l) were detected in this sample.

The metals Arsenic (2.9 ug/l), Copper (34 ug/l), Zinc (584 ug/l), Chromium (3 ug/l), Selenium (0.86 ug/l), Molybdenum (9 ug/l), Barium (36.4 ug/l), Boron (0.24 mg/l) and Nickel 10 ug/l) were detected.

See highlighted parameters in **Table 7.2.4**

#### **Measures to Reduce Detected Priority Substances**

Ongoing reviews of trade effluent licenses and consents will be carried out in the catchments upstream of the 4 influent lines to the Ringsend WWTP to reduce detected priority substances.

**Table 7.2.4 - EPA Appendix 1 – Ringsend Influent Inflows - 2019 PRTR Screening**

**EPA Parameters Screened for in 4 Waste Water Influent Lines to the Ringsend WWTP**

No.	Compound	1659493 Dun Laoire West Pier	1659494 UCD FM 10 (Dodder)	1659495 Sutton Sump	1659496 Ringsend Main Lift
1.	Benzene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
2.	Carbon Tetrachloride	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
3	1,2-Dichloroethane	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
4	Dichloromethane	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
5	Tetrachloroethylene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
6	Trichloroethylene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
7	Trichlorobenzene (1,2,4)	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
8	Trichloromethane	<b>3.32 ug/l</b>	<b>2.7 ug/l</b>	<b>4.57 ug/l</b>	<b>3.6 ug/l</b>
9	Xylenes (all isomers)	<2.00 ug/l	<2.00 ug/l	<2.00 ug/l	<2.00 ug/l
10	Ethyl Benzene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
11	Toluene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l
12	Naphthalene	<1.00 ug/l	<1.00 ug/l	<1.00 ug/l	<b>10.2 ug/l</b>
13	Fluoranthene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
14	Benzo(k)fluoranthene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
15	Benzo(ghi)perylene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
16	Indeno(1,2,3-c,d)pyrene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
17	Benzo(b)fluoranthene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
18	Benzo(a)pyrene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
	Acenaphthene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
	Pyrene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
	Anthracene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
	Fluorene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
	Phenanthrene	<40 ug/l	<20 ug/l	<20 ug/l	<20 ug/l
	Total PAH's	<b>&lt;441 ug/l</b>	<b>&lt;221 ug/l</b>	<b>&lt;221 ug/l</b>	<b>&lt; 230.2 ug/l</b>

No.	Compound	1659493 Dun Laoire West Pier	1659494 UCD FM 10 (Dodder)	1659495 Sutton Sump	1659496 Ringsend Main Lift
19	Di(2-ethylhexyl)phthalate (DEHP)	<200 ug/l	< 100 ug/l	< 100 ug/l	< 100 ug/l
	Di-ethylphthalate	<40 ug/l	< 20 ug/l	<20 ug/l	<20 ug/l
20	Isodrin	<26 ng/l	< 26 ng/l	< 26 ng/l	< 13 ng/l
21	Dieldrin	<22 ng/l	< 22 ng/l	< 22 ng/l	< 12 ng/l
22	Diuron	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
23	Isoproturon	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
24	Atrazine	<0.087 ug/l	< 0.087 ug/l	< 0.087 ug/l	< 0.044 ug/l
25	Simazine	<0.108 ug/l	< 0.108 ug/l	< 0.108 ug/l	< 0.054 ug/l
26	Glyphosate	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l
27	Mecoprop	<0.08 ug/l	< 0.16 ug/l	< 0.16 ug/l	< 1.60 ug/l
28	2,4-D	<0.10 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 2.00 ug/l
29	MCPA	<0.10 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 2.00 ug/l
30	Linuron	<0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
31	Dichlobenil	<17 ng/l	< 17 ng/l	< 17 ng/l	< 9 ng/l
32	2,6-Dichlorobenzamide	N/A	N/A	N/A	N/A
	Diazinon	<0.023 ug/l	<0.023 ug/l	<0.023 ug/l	<0.012 ug/l
	Dimethoate	<0.029 ug/l	<0.029 ug/l	<0.029 ug/l	<0.020 ug/l
33	PCB's (Sum of 7)	< 0.136 ug/l	< 0.136 ug/l	< 0.136 ug/l	< 0.070 ug/l
34	Phenols	<b>22.6 ug/l</b>	<b>51.8 ug/l</b>	<b>44.5 ug/l</b>	<b>9.29 ug/l</b>
34	m,p- Methylphenol	<b>44.5 ug/l</b>	<b>72.6 ug/l</b>	<b>115 ug/l</b>	<b>48.5 ug/l</b>
	o- Methylphenol	< 40 ug/l	< 20 ug/l	< 20.0 ug/l	< 20.0 ug/l
35	Lead	<b>10 ug/l</b>	< 6.0 ug/l	< 6.0 ug/l	< 6.0 ug/l
36	Arsenic	<b>2 ug/l</b>	<b>1.5 ug/l</b>	<b>1.7 ug/l</b>	<b>2.9 ug/l</b>
37	Copper	<b>37 ug/l</b>	<b>28 ug/l</b>	<b>88 ug/l</b>	<b>34 ug/l</b>
38	Zinc	<b>60 ug/l</b>	<b>60 ug/l</b>	<b>180 ug/l</b>	<b>584 ug/l</b>
39	Cadmium	<0.6 ug/l	< 0.6 ug/l	< 0.6 ug/l	< 0.6 ug/l

No.	Compound	1659493 Dun Laoire West Pier	1659494 UCD FM 10 (Dodder)	1659495 Sutton Sump	1659496 Ringsend Main Lift
40	Mercury	0.03 ug/l	<0.01 ug/l	< 0.01 ug/l	<0.01 ug/l
41	Chromium	<2 ug/l	<2 ug/l	<2 ug/l	3 ug/l
42	Selenium	1.2 ug/l	1.6 ug/l	1.9 ug/l	0.86 ug/l
43	Antimony	<1.6 ug/l	<1.6 ug/l	<1.6 ug/l	< 1.6 ug/l
44	Molybdenum	<3 ug/l	<3 ug/l	<3 ug/l	9 ug/l
45	Tin (Total)	<7 ug/l	7 ug/l	< 7 ug/l	< 7 ug/l
46	Barium	29.2 ug/l	22.2 ug/l	36.2 ug/l	36.4 ug/l
47	Boron	< 0.23 mg/l	< 0.23 mg/l	< 0.23 mg/l	0.24 mg/l
48	Cobalt	< 2 ug/l	< 2 ug/l	< 2 ug/l	< 2 ug/l
49	Vanadium	< 4 ug/l	< 4 ug/l	< 4 ug/l	< 4 ug/l
50	Nickel	< 3 ug/l	< 3 ug/l	10 ug/l	10 ug/l
51	Fluoride	0.3 mg/l	0.52 mg/l	0.57 mg/l	0.53 mg/l
52	Chloride	95 mg/l	60 mg/l	210 mg/l	490 mg/l
53	TOC	-	-	-	-
54	Cyanide	< 9 ug/l	< 9 ug/l	< 9 ug/l	< 9 ug/l
		(sample 1659487)	(sample 1659488)	(sample 1659489)	(sample 1659490)
55	Conductivity	848	678	1214	2122
56	Hardness (mg/l CaCO <sub>3</sub> )	-	-	-	-
57	pH	7.6	7.6	7.5	7.6

## Appendix 7.3 - Toxicity Leachate Management Report

Leachate received by tanker at the Ringsend WWTP is managed using a system of application forms, consignment notes, monitoring and invoicing. Leachate is also discharged to sewer and this is managed by consent to discharge. A total volume of **67,721** cubic metres of leachate was received by tanker in 2019 and a further **146,512** was received by sewer from Dunsink (Fingal County Council) as tabulated below:

Landfill Source	Local Authority	Leachate Annual Volume 2019 (m <sup>3</sup> )	PE*	Daily % Influent to WWTP
Ballynagran (by tanker)	Wicklow County Council	28,216	343.57	0.016%
Kerdiffstown (by tanker)	Kildare County Council	10,967	133.54	0.006%
Bord Na Mona Drehid Landfill (by tanker)	Kildare County Council	10,649	129.67	0.006%
Knockharley Landfill (by tanker)	Meath County Council	12,821	156.12	0.007%
Rampere Landfill (by tanker)	Wicklow County Council	59	1	0.000%
Dunsink Landfill Leachate (delivered by sewer network)	Fingal County Council	146,512	1,784	0.083%
<b>Total</b>		<b>209,224</b>	<b>2,547.9</b>	<b>0.121%**</b>

\* PE = m<sup>3</sup>/year /0.225 x 365

\*\* % Load to WWTP = m<sup>3</sup>/year x 100 / current Hydraulic Capacity (m<sup>3</sup>/yr)

## Appendix 7.4 - Final Effluent Toxicity Assessment

A treated SBR effluent sample 1659497 taken on 16/12/19 from the Ringsend Plant was tested for aquatic toxicity by ENVA.

Results show a value of <1 TU for testing with *Vibrio fischeri* (30 min EC50)

Results show a value of < 1 TU for testing with *Brachionus Plicatilis* (48 hour LC50)

This complies with the licence limit of 5 TU.

Toxicity Testing Report on behalf of  
TMS Environmental

Sampling Date – 16<sup>th</sup> December 2019

#### Sample Details

TMS Environmental Limited requested toxicity testing on behalf of their client, Dublin City Council, on their final effluent in December 2019.

The customer collected a composite sample over a 24 hour period on Monday, the 16<sup>th</sup> of December, and the sample was collected by Enva on Tuesday the 17<sup>th</sup> December for analysis.

The sample was labelled as "1659497 – Ringsend: New Treatment Works – SBR Effluent.", and was to be tested on the following species:

- 30 Minutes EC50 to *Vibrio fischeri*
- 48 Hours LC50 to *Brachionus Plicatilis*

#### Methods

**Method 1:** ENVCM.136: Based on ISO 11348-3:2007 Determination of the inhibitory effect of water sample on the light emission of *Vibrio fischeri*.

ISO 11348 describes three methods for determining the inhibition of the luminescence emitted by the marine bacterium *Vibrio fischeri* (NRRL B-11177). ISO 11348-3:2007 specifies a method using freeze-dried bacteria.

This method is applicable to waste water, fresh water (surface and ground water), sea and brackish water.

**Method 2:** ENVCM.137: Rotifer *Brachionus plicatilis*: Based on ASTM E1440-91.

This guide describes procedures for obtaining laboratory data concerning the acute toxicity of chemicals and aqueous effluents released into estuarine or marine waters. Acute toxicity is measured by exposing *Brachionus* newly hatched from cysts to a series of toxicant concentrations under controlled conditions.

The *Brachionus plicatilis* rotifer is specific to sea and brackish water.

Client Information

Contact Name	Marian Brady	Address	TMS Environmental Ltd, 53, Broomhill Drive, Tallaght, Dublin 24
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Certification Details

Certificate Number	060120202001083	Enva Lab ID	2001083
Date Received	17 <sup>th</sup> December 2019	Certificate Date	06 <sup>th</sup> January 2020
Order Number	D-19-11059	Test Date	17 <sup>th</sup> December 2019

Sample Information

Sampled By	Customer
Sampling Procedure	Composite
Storage Conditions	Refrigerated
Temperature (°C)	27°C
pH (at 25°C)	7.37
Dissolved Oxygen (mg/L)	4.97
Dissolved Oxygen (% Saturation)	61%
Conductivity (µs/cm at 25°C)	1660
Salinity (ppt at 20°C)	0.7

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Aquatic Toxicity Test Results

Test Parameters	Concentration (% Vol./Vol.)	Toxic Units	95% Confidence Limits (% Vol./Vol.)	Method of Calculation
30 min EC50 to <i>Vibrio fischeri</i>	100	<1	N/A	Microtox
48 LC50 to <i>Brachionus plicatilis</i>	100	<1	N/A	Rotifer LC50 Calculation Programme

Conclusions

All tests performed were deemed to be valid as they met all of the criteria specified in the guidelines.

Reported By

Alan O'Driscoll

Alan O'Driscoll  
Account Manager  
Enva Ireland, Cork

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## Appendix 7.5 - Met Eireann Orange and Red Alerts affecting Ringsend WWTP

Below tables the 2019 Met Eireann Orange and Red Weather Alert dates and the corresponding dates where the effluent treatment performance was negatively affected.

Date	Met Eireann Orange and Red Alerts	Effluent Treatment Performance Affected
17/01/2019	Low Temperature	TSS – 98 mg/l
23/01/2019	Snow/Ice	CBOD- 77 mg/l, COD – 330 mg/l, TSS – 220 mg/l
29/01/2019	Snow/Ice	CBOD – 68 mg/l, COD – 341 mg/l TSS – 230 mg/l
30/01/2019	Snow/Ice	TSS – 77 mg/l
17/12/2019	Low Temperature	TSS - 56