Annual Environmental Report 2017

Agglomeration Name:	**Ringsend**
Licence Register No.	**D0034-01**

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Appendices

1. Executive Summary and Introduction to the 2017 AER

1.1. Summary Report on 2017

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.

Specified reports are included as an appendix to the AER as follows:

- Storm Water Overflow Assessment (**Appendix 7.4**)
- Priority Substances Assessment (**Appendix 7.6**)
- Toxicity / Leachate Management Report (**Appendix 7.7**)
- Final Effluent Toxicity Assessment (**Appendix 7.8**)

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

The agglomeration is served by a wastewater treatment plant with a Plant Capacity PE of 1.64 million. The treatment process includes the following:

- Preliminary treatment (including screening / grit removal)
- Primary treatment
- Secondary treatment - SBR and Nereda Pilot Plant
- Tertiary treatment – UV treatment (during the bathing season)
- Sludge treatment

The final effluent from the Primary Discharge Point was non-compliant with the following Emission Limit Values in 2017 for the following parameters:

- cBOD
- COD
- Total Suspended Solids
- Total Nitrogen
- Total Phosphorus
- Faecal coliforms (E.coli)

The effluent parameters pH and Toxicity complied with the ELVs during 2017.

15,787 tonnes sludge (as tonnes dry solids) were removed from the wastewater treatment plant as dewatered sludge cake (1,600 tonnes) / Biofert dried sludge pellets (16,395 tonnes equivalent to 14,274 tonnes dry solids). Sludge was transferred to Greenstar and Peadar Byrne.

The following improvement works were undertaken during 2017:

Dublin City Council Functional Area

There were no major capital or operational changes undertaken in 2017.

South Dublin County Council Functional Area

There were no major capital projects undertaken in 2017.

Fingal County Council Functional Area

There were no major capital projects undertaken in 2017.

Dún Laoghaire Rathdown County Council Functional Area

There were no major capital projects undertaken in 2017.

Meath County Council Functional Area

- In 2017 electrical contractor control boxes were raised out of the wet well sumps in Ashbourne PS and Kilbride PS.
- Leaking cable ducts sealed in Kilbride PS
- Sealing of leaking cable ducts is currently 60% complete at Ashbourne PS.
- Drains around the perimeter of Ashbourne PS were blocked causing the site to flood. These were jet cleared in 2017.

Annual Statement of Measures for each functional area are included in **Appendix 7.1**.

2. Monitoring Reports Summary 2017

2.1. Summary report on influent monitoring

Table 2.1 - Influent Monitoring Summary *(exclusive of unusual weather conditions)*

	cBOD (mg/l)	COD (mg/l)	SS (mg/l)	TP (mg/l)	TN (mg/l)	Hydraulic Loading (m^3/d)
Number of Samples	143	246	246	102	102	
Annual Max.	504	1307	916	9.9	52.5	897,120
Annual Mean	284	569	276	6.2	39.9	400,672

Other inputs in the form of sludge / leachate are added to the WWTP *before* the influent monitoring point. Other inputs are detailed in Section 3.6.

Significance of results

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

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

2.2. Discharges from the agglomeration

Table 2.2 - Effluent Monitoring Summary

	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Total P (mg/l)	Total N (mg/l)	pH	Toxicity (TU)	Comment
WWDL ELV (*Schedule A*)	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	143 ***	246***	246***	102 *	102*	246***	1	
Number of sample results above WWDL ELV	61	60	168	102	99	0	0	Composite samples taken except for toxicity
Number of sample results above ELV with Condition 2 Interpretation included	23	20	47	102	87	0	0	Composite samples taken except for toxicity
Annual Mean (for parameters where a mean ELV applies)	N/A	N/A	N/A	4.45	18.0	N/A	N/A	
Overall Compliance (Pass/Fail)	Fail	Fail	Fail	Fail	Fail	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.*
***111-125 samples therefore 10 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 28 non-complaint results allowed of the lower tier ELV, once the max ELV is breached then all exceedances thereafter are reportable.*

Table 2.2 *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 (*Schedule A*)	-	-	-	-	100,000	-	-	
ELV with Condition 2 Interpretation included	-	-	-	-	120,000	-	-	
Number of sample results	246	246	246	102	52	44	246	
Number of sample results above WWDL ELV/not achieving min % reduction	-	-	-	-	2	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)	15.13	10.96	2.50	6 (<10)	N/A	N/A	52	
Overall Compliance (Pass/Fail)	N/A	N/A	N/A	N/A	Fail	N/A	N/A	

Significance of results

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There were 61 samples non-compliant with the ELV in relation to cBOD. The non-compliance is due to inadequate treatment. There were 60 samples non-compliant with the ELV in relation to COD. The non-compliance is due to inadequate treatment. There were 168 samples non-compliant with the ELV in relation to TSS. The non-compliance is due to inadequate treatment. 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 99 samples non-compliant with the ELV for TN. The non-compliance was due to inadequate treatment. The WWTP effluent was compliant with 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 Bathing Season. There was a breach of the Condition 2 ELV on 27/06/2017 and a Schedule A ELV breach on the 13/07/2017.

The impact on receiving waters is assessed further in **Section 2.3**.

2.3. Ambient Monitoring Summary

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	Liffey U/S Islandbridge	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 point	Liffey Estuary Upper	Unknown	No	No	No	No	Moderate	Yes Impacts in the near field and the plume of the sewage discharge – see "*Significance of Results*" section below. Liffey Estuary tidal
Downstream monitoring point	Liffey Estuary Lower	Unknown	**Yes**	No	No	No	Moderate	Yes Impacts in the near field and the plume of the sewage discharge – see "*Significance of Results*" section below. Liffey Estuary tidal
Downstream monitoring point	Tolka Estuary	Unknown	No	No	No	No	Moderate	Yes Impacts of the sewage discharge plume and the Tolka River inflow – see "*Significance of Results*" section below. Tolka Estuary tidal
Downstream monitoring point	Dublin Bay	Unknown	No	No	No	No	Good	No See "*Significance of Results*" section below.
Downstream monitoring point	Bathing Waters Dollymount Bathing Zone Sandymount Merrion	Unknown	**Yes**	No	No	No	(2017 EPA) Good Poor Poor	 Ectocarpus noted on many dates. *Significance of Results*" section below. - Investigations Ongoing

The results for the upstream and downstream monitoring are included as in **Appendix 7.2** (2,3,4 and 5).

Significance of results

- The WWTP was non-compliant with the ELV's set in the wastewater discharge licence as detailed in **Section 2.2.**
- 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 WFD characterisation process concluded that the Ringsend WWTP is a significant pressure on the Liffey Estuary Lower water body (IE_EA_090_0300). This water body is at moderate ecological status due to fish status. The water body has been designated as '*at risk*' due to DIN levels, though this does not affect the overall ecological status. Nutrient pollution (DIN) is indicated as a reason why the WWTP is a significant pressure. However, the levels of DIN in the estuary are not likely to affect the fish status which is the only driver of the moderate ecological status.
- Other potential causes of deterioration in water quality relevant to this area are upstream riverine pollutants, combined sewer overflows, exfiltration from sewers, urban runoff 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***)
- 11 additional monitoring points on the Liffey and Tolka Estuaries (Surface and Depth)
- 9 monitoring locations in Dublin Bay (Surface and Depth)
- 8 shoreline locations, 3 of which are EC designated bathing waters (Dollymount Bathing Zone, Sandymount and Merrion Strands).

See map of monitoring locations agreed with the EPA in **Appendix 7.2:** ***Figure 7.2.1***.

See all monitoring data for 2017 in **Appendix 7.2.**

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 of Schedule 3 of the Urban Wastewater Regulations, SI 254 of 2001. The European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI 272 of 2009), set 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 2017 are tabulated below:

Survey No. and Month 2017	Date	High Tide Time	Height (m OD)	Low Tide Time	Height (m OD)	Tidal Status during Survey
1. April	Not Sampled					
2. May	04/05/17	07.11	3.62	13.03	0.95	High to Ebb
	24/05/17	10.59	4.08	04.21	0.62	Mid Flow to High
	25/05/17	11.47	4.21	05.07	0.41	Mid Flow to High
3. June	07/06/17	11.30	3.75	04.48	1.11	Mid Flow to Mid-Ebb
	08/06/17	12.06	3.74	05.27	1.02	Mid Flow
4. July	19/07/17	08.15	3.73	14.14	0.98	High to Mid Ebb
	20/07/17	09.23	3.80	15.18	0.90	High to Mid Ebb
5. August	16/08/17	06.39	3.68	12.39	1.13	High to Mid-Ebb
	17/08/17	07.57	3.63	13.54	1.18	High to Mid-Ebb
6. September	20/09/17	12.39	3.98	05.57	0.40	Mid-Flow to High

2.3.1. Marine Monitoring Summary – ASW2 to ASW10

A total of 6 surveys were carried out in the Liffey and Tolka Estuaries during 2017 at the designated locations in the licence, tabulated below:

EPA Map Code	Licence Code	Sampling Point
		Liffey Estuary Lower
	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
		Liffey
DB000	**ASW6**	Liffey City, Downstream Islandbridge Weir
DB010	**ASW7**	Liffey City, Heuston Station, Upstream of Camac Outfall
	ASW8	Liffey City, Winetavern Street Bridge
		Liffey Estuary Lower
DB210	**ASW9**	Liffey (Surface), Downstream of East Link Toll Bridge
		Tolka
DB310	**ASW10**	Tolka, Downstream of Annesley Bridge

Refer to **Appendix 7.2:** ***Table 7.2.2*** for the Marine Monitoring Water Quality Data: ASW2 – ASW10.

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

- ASW3D where the DO was slightly depleted (77% Sat.) on 04/05/17 at depth.
- DO values at ASW10S exceeded the upper DO limit at 134% on 07/06/17 at surface.

All BOD values were compliant with transitional water quality limits.

Five exceedances of Molybdate Reactive Phosphate (MRP) standards occurred in the near field of the Ringsend discharge at ASW2, ASW3 and ASW4. The non-compliant median MRP results were as follows:

Location	MRP 2017 Median Result	SI 272 Standard	Comment
		60 µg/l as P (median) at 0-17% PSU to 40 µg/l as P (median) at 35% PSU	
ASW2 (Surface)	178 µg/l as P		Close to SW1 Outfall within the Mixing Zone
ASW2 (Depth)	117 µg/l as P		Close to SW1 Outfall within the Mixing Zone
ASW3 (Surface)	321 µg/l s P		Close to SW1 Outfall within the Mixing Zone
ASW3 (Depth)	52 µg/l as P		Close to SW1 Outfall within the Mixing Zone
ASW4 (Surface)	156 µg/l as P		Close to SW1 Outfall within the Mixing Zone
ASW5 (Surface)	67 µg/l as P		Close to SW1 Outfall within the Mixing Zone
ASW10 (Surface)	86 µg/l as P		Upstream River Pollution

2.3.2. Marine Monitoring – Transitional Water Monitoring – Points Agreed with EPA

A total of 6 surveys were carried out in the Liffey and Tolka Estuaries during 2017, at 11 locations agreed with the EPA, tabulated below:

EPA Map Code	Sampling Point
	Liffey Estuary Upper
DB 020	Matt Talbot Bridge
	Liffey Estuary Lower
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
	Tolka
DB 300	Upstream of Drumcondra Bridge
	Tolka Estuary

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 SI 272 of 2009 for the above locations is presented below and complete water quality data is presented in **Appendix 7.2: *Table 7.2.3*.**

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

A BOD Saline result exceeded the limit of 4 mg/l O2 at **DB320 (Surface)** on 20/07/17 (**69 mg/l O2**).

2 dissolved oxygen (lower limit) exceedances occurred at the following location:

- **DB020D** - 04/05/17 (71% Saturation) and 24/05/17 (75% Saturation).

No dissolved oxygen (upper limit) exceedances occurred.

16 Molybdate Reactive Phosphate (MRP) exceedances occurred at **7** locations as follows

Location	MRP 2017 Median Result	SI 272 Standard	Comment
	Liffey Estuary		
DB020 (Depth)	**53 µg/l P**	< 40 µg/l P	SW1 Discharge and riverine impacts
DB410 (Surface)	**281 µg/l P**		SW1 Discharge Impact
DB410 (Depth)	**45 µg/l P**		SW1 Discharge Impact
DB420 (2 x Surface)	**99 µg/l P**		SW1 Discharge and riverine impacts
	Tolka Estuary		
DB300	**84 µg/l P**		Riverine impacts
DB320 (Surface)	**102 µg/l P**		Riverine and tidal impacts
DB320 (Depth)	**99 µg/l P**		Riverine and tidal impacts
DB330 (Surface)	**87 µg/l P**		SW1 Discharge and riverine impacts
DB330 (Depth)	**79 µg/l P**		SW1 Discharge and riverine impacts
DB330 (Composite)	**120 µg/l P**		SW1 Discharge and riverine impacts
DB340 (Surface)	**59 µg/l P**		SW1 Discharge and riverine impacts
DB340 (Depth)	**52 µg/l P**		SW1 Discharge and riverine

			impacts
DB 340 (Composite)	**44µg/l P**		SW1 Discharge and riverine impacts
DB 350 (Surface)	**138 µg/l P**		SW1 Discharge and riverine impacts
DB 350 (Depth)	**111 µg/l P**		SW1 Discharge and riverine impacts
DB 350 (Composite)	**72 µg/l P**		SW1 Discharge and riverine impacts

2.3.3. Marine Monitoring Summary – Coastal Water Monitoring – Dublin Bay 2017 – Points agreed with EPA

A total of 4 surveys were carried out at 9 locations in Dublin Bay during 2017. These locations – 6 coastal waters and 3 Irish Sea locations (*), agreed with the EPA, are tabulated below:

See map in **Appendix 7.2: *Figure 7.2.1***. All monitoring data is included in **Appendix 7.2: *Table 7.2.4***.

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 were taken at all other times.

A summary of coastal water quality compliance with SI 272 of 2009 for the above locations is presented below and complete water quality data is presented in **Appendix 7.2: *Table 7.2.4***.

Monitoring data for 2017 shows full compliance with temperature, dissolved oxygen (lower) and dissolved oxygen (upper).

The Dissolved Inorganic Nitrogen (DIN) standards for coastal waters (High Status) were complied with at all 9 sampling locations on all survey dates.

The median chlorophyll High to Good limit (cold acetone extraction = < 2.5 µg/l) was complied with at all 9 sampling locations in 2017.

There were no other impacts on coastal and Irish Sea water quality during surveys carried out in 2017.

2.3.4. Shoreline Monitoring – 2017 Bathing Season

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

Shoreline sampling was carried out at 8 locations during the 2017 bathing season:

- ASW 11 - Dollymount North,
- **ASW 12 - Dollymount Bathing Zone***
- ASW 13 - Dollymount South
- ASW 14 - Bull Wall Wood Causeway
- ASW 15 - Poolbeg Outfall (Main)
- ASW 16 - Half Moon Club Southside
- **ASW 17 – Sandymount Strand***
- **ASW 18 – Merrion Strand***

A summary of bathing water quality compliance with SI No. 79 of 2008 for the above locations, three of which are **designated*** is presented below and complete water quality data is presented in **Appendix 7.2: *Table 7.2.5***.

In Summary:

Bathing water status has been determined by the EPA for the year 2017. The Status of the different designated locations is also available on the EPA Beach website.

Designated bathing waters at Dollymount (Bathing Zone) and Sandymount Strand were allocated **GOOD** and **SATISFACTORY** status respectively. Merrion Strand continues to be classified as **POOR** status. Investigative monitoring is ongoing.

Designated Bathing Water Status 2017

Site Location	**ASW 12**	**ASW 17**	**ASW 18**
No. of samples (non-investigative)	20	20	20
2017 Annual Status	**Good**	**Poor**	**Poor**

The remaining 5 locations are not designated bathing waters.

Monitoring between 29/05/17 and 11/09/17 showed microbiological results (see **Appendix 7.2: *Table 7.2.5)*** that indicate a 2017 annual status summarised below:

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

Non-Designated Bathing Waters: Single Sample Status Assessment

Location	Number of samples	Parameter	%			
			Excellent	Good	Sufficient	Poor
ASW11	19	IE	78.95	10.53	10.53	-
		EC	78.95	15.79	5.26	-
ASW13	20	IE	75	5	5	15
		EC	65	5	5	25
ASW14	20	IE	85	-	-	15
		EC	70	10	-	20
ASW15*	20	IE	NA	NA	NA	NA
		EC	NA	NA	NA	NA
ASW16	20	IE	90	-	-	10
		EC	95	-	-	5

**Poolbeg Outfall is not a bathing area and is monitored to check the impact of the Ringsend discharge plume.*

2.4. Pollutant Release and Transfer Register (PRTR) – report for previous year

The PRTR summary sheets are included in **Appendix 7.3**.

3. Operational Reports Summary

3.1. Treatment Efficiency Report

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:-

Table 3.1 - Treatment Efficiency Report Summary

	cBOD (t/yr)*	COD (t/yr)*	SS (t/yr)*	Total P (t/yr)*	Total N (t/yr)*
Influent mass loading (t/year)	39,979.4	81,290.2	39,871.3	874.5	5,633.2
Effluent mass emission (t/year)	5,239.1	19,414.4	10,650.5	656.6	2,604.4
% Efficiency (% reduction of influent load)	86.9%	76.1%	73.3%	24.9%	53.8%

**flow weighted average loadings*

3.2. Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (m^3/day) PEAK	959,040
Hydraulic Capacity – Design / As Constructed (m^3/day) DWF	397,440
Hydraulic Capacity – Current loading (m^3/day) 2017 MEAN	400,672
Hydraulic Capacity - Maximum loading (m^3/day) 2017 (22/11/17)	897,120
Hydraulic Capacity – Remaining (m^3/day)	558,368
Organic Capacity - Design / As Constructed (PE)	1,640,000
Organic Capacity - Current loading (PE)	2,190,649
Organic Capacity – Remaining (PE)	None – Plant Over Capacity
Will the capacity be exceeded in the next three years?	Yes

3.3. Extent of the Agglomeration Summary Report

In this section Irish Water is required to report on the amount of urban waste water generated within the agglomeration. It does not include any waste water collected and treated in a private system and discharged to water under a Section 4 Licence issued under the Water Pollution Acts 1977 (as amended):

Dublin City Council Functional Area

Table 3.3a - Extent of Agglomeration Summary Report

	% of P.E. load generated in the agglomeration
Load generated in the agglomeration that is collected in the sewer network	100%
Load collected in the agglomeration that enters treatment plant	Unknown
Load collected in the sewer network but discharged without treatment	Unknown

South Dublin County Council Functional Area

Table 3.3b- Extent of Agglomeration Summary Report

	% of P.E. load generated in the agglomeration
Load generated in the agglomeration that is collected in the sewer network	100%
Load collected in the agglomeration that enters treatment plant	Unknown
Load collected in the sewer network but discharged without treatment	Unknown

Fingal County Council Functional Area

Table 3.3c - Extent of Agglomeration Summary Report

	% of P.E. load generated in the agglomeration
Load generated in the agglomeration that is collected in the sewer network	100%
Load collected in the agglomeration that enters treatment plant	Unknown
Load collected in the sewer network but discharged without treatment	Unknown

Dún Laoghaire Rathdown County Council Functional Area

Table 3.3d - Extent of Agglomeration Summary Report

	% of total load generated in the agglomeration
Load generated in the agglomeration that is collected in the sewer network	100%
Load collected in the agglomerations that enters treatment plant	99.03%
Load collected in the sewer network but discharges without treatment	0.97%

See below

	Load generated in the agglomeration (m^3)	Estimated/ Measured Data
A. Volume generated in the agglomeration that is collected in the sewer network	15,250,000	Measured + Estimated
B. Volume collected in the agglomeration that enters treatment plant	15,101,940	Measured
C. Volume collected in the sewer network but discharged without treatment (includes SWO, EO and any discharges that are not treated)	148,050	EO 100,000m^3 estimate CSO 48,050m^3 estimate
D. % of volume generated in the agglomeration that is discharged without treatment. D=(C/A*100)	0.97%	

Note: *Flow to Ringsend via the West Pier Pump Station measured at 12,217,454m^3. Flows from County Main and Dodder Valley Sewer estimated at 3,000,000m^3. Total rounded to 15,250,000m^3.*

Meath County Council Functional Area

Table 3.3e - Extent of Agglomeration Summary Report

	% of total load generated in the agglomeration
Load generated in the agglomeration that is collected in the sewer network	100%
Load collected in the agglomerations that enters treatment plant	Unknown
Load collected in the sewer network but discharges without treatment	Unknown

3.4. Complaints Summary

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

Dublin City Council Functional Area

Table 3.4a - Complaints Summary Table

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
7	Investigation Pollution Incident - Below Ground Waste Water	0	7
19	Investigation Sewage Flooding - Below Ground Waste Water	0	19

South Dublin County Council Functional Area

Table 3.4b - Complaints Summary Table

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
265	Investigation Sewage Flooding - Below Ground Waste Water	2	263
8	Investigation Pollution Incident - Below Ground Waste Water	0	8

Fingal County Council Functional Area

Table 3.4c - Complaints Summary Table

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
1	Investigation Pollution Incident - Below Ground Waste Water	0	1
47	Investigation Sewage Flooding - Below Ground Waste Water	0	47

Dún Laoghaire Rathdown County Council Functional Area

Table 3.4d - Complaints Summary Table

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
79	Overflow operation due to sewer blockage or heavy rain.	0	79
1	Investigation Pollution Incident - Below Ground Waste Water	0	1

Meath County Council Functional Area

Table 3.4e - Complaints Summary Table

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
1	Investigation Pollution Incident - Below Ground Waste Water	0	1
26	Investigation Sewage Flooding - Below Ground Waste Water	0	26

3.5. Reported Incidents Summary

A summary of reported incidents from 2017 is included in **Tables 3.5a-e.**

Dublin City Council Functional Area

Table 3.5a. Summary of Overall Incidents

Table 3.5.1a - Summary of Incidents

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted	Reported to EPA (Yes/No)	Closed (Y/N)
Uncontrolled Release INCI012117	Overflow to the River Tolka at Glasnevin Bridge.	Blocked Sewer	1	No	Sewer blockage cleared, area cleaned	IFI, DCC	Yes	Yes
Uncontrolled Release INCI012196	Overflow to rainwater gully outside Rathvilly Drive, which discharges to the Tolka river.	Blocked Sewer	1	No	Blockage cleared	IFI, DCC	Yes	Yes
Uncontrolled Release INCI012233	Overflow to the River Liffey due to pump breakdown at Ringsend WWTP – On the 05/06/17 and 08/06/17.	Plant or equipment breakdown at WWTP	1	Yes	Pumps repaired	IFI, Mins. For Ag, Food and Marine, BIM, SFPA, MI, FSAI, DCC. Dept. of Ag.	Yes	Yes
Uncontrolled Release INCI012373	Storm water overflow at Ringsend WWTP to the Liffey estuary. On the 26/06/17, 31/07/17 & 14/08/17.	Adverse Weather	1	Yes	SWO ceased once adverse weather subsided. Temporary bathing prohibition put in place at Dollymount Strand and North Bull Island.	BIM, MI, FSAI, SFPA, Mins. For Ag, Food and the Marine, IFI, Dept. of Ag, DCC	Yes	No
Uncontrolled Release INCI012646	Overflow to River Dodder due to sewer blockage at Beaver Row, Clonskeagh.	Blocked Sewer	1	No	Blockage cleared	IFI, DCC	Yes	Yes
Uncontrolled Release INCI012816	Emergency overflow at Violet Hill Pumping Station, Finglas Road, Dublin 11.	Emergency overflow caused by pump failure	1	No	Pumps repaired	IFI, DCC	Yes	Yes

Uncontrolled Release INCI012946	Overflow to maintained grass area and rainwater gullies within Poppintree Park which discharge into a large man-made pond.	Blocked Sewer	1	No	Blockage cleared and area cleaned before sewage entered the pond.	IFI, DCC	Yes	No
Uncontrolled Release INCI012961	Overflow to the River Poddle via a combined sewer overflow at the junction of Kimmage Road Lower and Fortfield Road.	Blocked Sewer	1	No	Blockage cleared.	IFI, DCC	Yes	No
Uncontrolled Release INCI012994	Overflow to the River Liffey at Castleforbes Pumping Station.	Emergency overflow caused by power failure	1	No	Discharge ceased once power restored.	IFI, DCC	Yes	Yes
Breach of ELV INCI008791	Recurring breaches in effluent discharge cBOD, COD, TSS, TN, TP ELVs in 2017 and breaches of Faecal coliforms (E.coli)) on 27/06/17 & 13/07/17.	WWTP upgrade required to meet ELV Breach of Condition 2 ELV for Faecal coliform (E. coli) on 27/06/17 occurred during a major storm event which lead to excessive loads entering the WWTP. The UV plant was fully operational, but was impacted by poor effluent due to the storm overloading. Breach of Faecal coliform (E. coli) on 13/07/17. Cause unknown and difficult to attribute to anything other than a high loading of E Coli on the UV plant at the time of sampling, which was still achieving a very good kill rate	1	Yes	Extension of the Ringsend WWTWs is planned.	BIM, MI, FSAI, SFPA, Mins. For Ag, Food and the Marine, IFI, Dept. of Ag, DCC	Yes	No

Uncontrolled Release INCI010720	Overflow at Ailesbury Rd PS on 21/02/17, 27/05/17, 08/06/17, 14/08/17, 21/10/17 & 22/11/17	SWO design not meeting DoEHLG Criteria	1	Yes	Temporary bathing prohibition issued for Sandymount Strand. Electronic signage on the beach automatically activated when the overflow operated to notify bathers. Notice placed on Dublin City Council's website to inform the general public that the bathing. Under-voltage relay was repaired.	BIM, MI, FSAI, SFPA, Mins. For Ag, Food and the Marine, IFI, Dept. of Ag, DCC	Yes	No

Table 3.5.2a - Summary of Overall Incidents

Number of Incidents in 2017 *	11
Number of Incidents reported to the EPA via EDEN in 2017 *	11
Explanation of any discrepancies between the two numbers above	N/A

***** *Recurring incidents are treated as one single incident and all recurring incidents are reported under the relevant Incident Report on EDEN.*

South Dublin County Council Functional Area

Table 3.5.1b - Summary of Incidents

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted Note	Reported to EPA (Yes/No)	Closed (Y/N)
Spillage/Uncontrolled Release INCI011675	Discharge to River Dodder via manhole in Templeogue Village and Springfield.	Blocked Sewer	1	No	Blockage cleared	IFI, SDCC	Yes	Yes
Uncontrolled Release INCI011934	Overflow to Kilnamanagh Stream at Treepark, via a manhole at the junction between Treepark Road and Tamarick Close.	Blocked Sewer	1	No	Blockage cleared, stream visibly assessed, no cleaning deemed necessary.	IFI, SDCC	Yes	Yes
Spillage INCI011942	Spillage at Redwood lawns and Redwood Close from overflowing sewer.	Blocked Sewer	1	No	Blockage cleared, area cleaned.	IFI, SDCC	Yes	Yes
Uncontrolled Release INCI012185	Uncontrolled release to the River Dodder at Springfield Templeogue.	Broken Sewer Pipe	1	No	Pipe repaired	IFI, SDCC	Yes	Yes
Spillage INCI012207	Sewage overflow to the surface water drains at Scholarstown Park, South Dublin.	Blocked Sewer	1	No	Blockage cleared and area cleaned.	IFI, SDCC	Yes	Yes
Spillage INCI012209	Sewage overflow at properties in Beverly Green and Beverly Park, during heavy rain.	Blocked Sewer	1	No	Blockage cleared and spillages cleaned.	IFI, SDCC	Yes	Yes

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted Note	Reported to EPA (Yes/No)	Closed (Y/N)
Spillage INCI012210	Sewage overflow to two gardens in Monksfield lawns, Clondalkin.	Blocked Sewer	1	No	Blockage cleared and areas cleaned.	IFI, SDCC	Yes	Yes
Spillage INCI012212	Overflow to ground at Fonthill Rd, Lucan Heights.	Blocked Sewer	1	No	Blockage cleared and area cleaned.	SDCC	Yes	Yes
Spillage INCI012596	Sewage overflow to garden at Woodford Downs, Clondalkin.	Blocked Sewer	1	No	Blockage cleared	IFI, SDCC	Yes	Yes
Spillage INCI012774	Sewage overflow at property at The Coppice, Palmerstown.	Blocked Sewer	1	No	Blockage cleared and area cleaned.	SDCC	Yes	Yes
Spillage INCI012773	Sewage overflow from manhole at The Old Rectory, Lucan, during heavy rainfall.	Adverse Weather	1	No	Overflow ceased once rainfall subsided, area cleaned	IFI, SDCC	Yes	Yes
Spillage INCI012993	Overflow of foul sewage onto the road from two manholes on De Selby Rise, Blessington Road, Tallaght and at a property in De Selby Lane.	Blocked Sewer	1	No	Blockage cleared and area cleaned	SDCC	Yes	Yes
Uncontrolled Release/Spillage INCI013215	Overflow to the River Dodder at manhole no. 8602 on the lower Dodder Road.	Broken Sewer Pipe	1	No	Arrangements made for weir to be replaced	IFI, SDCC	Yes	No
Uncontrolled Release/Spillage	Sewage overflow to road and back gardens at	Blocked Sewer	1	No	Blockage cleared and area cleaned	IFI, SDCC	Yes	Yes

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted Note	Reported to EPA (Yes/No)	Closed (Y/N)
INCI013486	Glenvara Park, Knocklyon, Dublin 16. Distance from the Rover Dodder, 1km.							

Table 3.5.2b - Summary of Overall Incidents

Number of Incidents in 2017	14
Number of Incidents reported to the EPA via EDEN in 2017	14
Explanation of any discrepancies between the two numbers above	N/A

Fingal County Council Functional Area

Table 3.5.1c - Summary of Incidents

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted	Reported to EPA (Yes/No)	Closed (Y/N)
Uncontrolled Release INCI011577	Emergency overflow at Burrow Road Pumping Station	Emergency overflow caused by pump failure	1	No	Pumps lifted and cleared	FCC, IFI, BIM, FSAI, MI, Mins. AFM, SFPA	Yes	Yes
Uncontrolled Release INCI011641	Emergency overflow from Santry Pump Station	Emergency overflow caused by pump failure	1	No	Pumps lifted and cleared	IFI, FCC	Yes	Yes
Uncontrolled Release INCI012000	Overflow from Castleknock Village PS to the river Tolka (SW55)	Emergency overflow caused by ragging or blocking	1	No	Blockage cleared	FCC, IFI	Yes	Yes
Uncontrolled Release INCI012157	Emergency overflow from Portmarnock Bridge pump station on the 20th of May 2017 from 23.15-02.00 discharging to the Sluice River.	Emergency overflow caused by power failure	1	No	Normal operations resumed when the power returned	IFI, Dept. Ag, BIM, MI, FSAI, FCC	Yes	Yes
Uncontrolled Release INCI012158	Emergency overflow from Sutton Strand PS	Emergency overflow caused by ragging or blocking	1	No	Pumps lifted and cleared	IFI, Dept. Ag, BIM, SFPA, MI, FSAI, FCC	Yes	Yes
Uncontrolled Release	Emergency overflow from Burrow Road Pump Station	Emergency overflow caused by power failure	1	No	Pumps lifted and cleared	FCC, IFI, Dept. Ag, BIM, SFPA,	Yes	Yes

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted	Reported to EPA (Yes/No)	Closed (Y/N)
INCI012174						MI, FSAI		
Uncontrolled Release INCI012520	Sewer blockage on branch sewer near 9C trunk sewer at Mulhuddart bridge.	Blocked Sewer	1	No	Blockage cleared	FCC, IFI	Yes	Yes
Uncontrolled Release INCI012680	SWO from the Portmarnock Strand PS.	Adverse Weather	1	No	The overflow ceased once rainfall subsided	FCC, Dept. Ag., BIM, SFPA, MI, FSAI	Yes	Yes
Uncontrolled Release INCI012909	Emergency overflow from Baldoyle Road pump station to the Irish Sea.	Emergency overflow caused by ragging or blocking	1	No	Pumps reset remotely. Pumps lifted and cleared.	IFI, Dept. Ag, BIM, SFPA, MI, FSAI	Yes	Yes
Uncontrolled Release INCI013405	Overflow to the River Tolka from the foul sewer at Mulhuddart.	Adverse Weather	1	No	Pumping of flood waters from area flooding premises to the river	FCC, IFI	Yes	Yes
Uncontrolled Release INCI013607	Uncontrolled release from Portmarnock Bridge Pump station to the Sluice River	Emergency overflow caused by ragging or blocking	1	No	Pumps lifted and cleared	FCC, IFI	Yes	Yes
Uncontrolled Release INCI010279	Overflow at Portmarnock Bridge Pumping Station due to heavy rainfall and subsequent pump blockage due. There is currently no facility to measure and record the	Inadequate Infrastructure	1	No	Blockage cleared, pumps reset.	FCC, IFI	Yes	Yes

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted	Reported to EPA (Yes/No)	Closed (Y/N)
	volume of overflow events from the pumping station.							
Uncontrolled Release INCI008147	Discharge to Doldrum Bay of partially treated effluent to the beach. The outfall to the Irish sea is beyond repair.	Broken Sewer Pipe	1	Yes	No interim mitigation measures are possible beyond signage, due to access issues.	None	Yes	No

Table 3.5.2c- Summary of Overall Incidents

Number of Incidents in 2017	13
Number of Incidents reported to the EPA via EDEN in 2017	13
Explanation of any discrepancies between the two numbers above	N/A

Dún Laoghaire Rathdown County Council Functional Area

Table 3.5.1d - Summary of Incidents

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted	Reported to EPA (Yes/No)	Closed (Y/N)
Spillage/Uncontrolled Release INCI011599	Overflow from foul manhole in Grange Downs, Rathfarnham to the road into gully and the Little Dargle River.	Blocked Sewer	1	No	Sewer unblocked and the surrounding area washed down.	IFI, SDCC	Yes	Yes
Uncontrolled Release INCI011439	Overflow at Merrion Grove which, drained into surface water gully connected to Trimleston stream.	Blocked Sewer	1	No	Line jetted and blockage cleared	IFI, DCC, DLR	Yes	Yes
Spillage/Uncontrolled Release INCI012708	Overflow from CSO adjacent to Blackrock DART station, due to large grease deposits in sewer at Idron Terrace.	Blocked Sewer	1	No	Blockage cleared by jetting	IFI, Dept. of Ag, BIM, SFPA, MI, FSAI, DLR	Yes	Yes
Uncontrolled Release INCI012714	Overflow from St Helens Pump station, Booterstown to the Trimleston Stream during heavy rainfall.	SWO exceptional rainfall and overflow expected	1	No	Overflow ceased once adverse weather ended.	IFI, Dept. of Ag, BIM, SFPA, MI, FSAI, DLR	Yes	No
Spillage INCI012764	Overflow to Carysfort Maretimo Stream, which in turn outfalls to sea at Blackrock.	Broken Sewer Pipe	1	No	Repair of broken sewer, blockage cleared	IFI, DLR	Yes	Yes
Spillage INCI012449	Sewer Leakage into the Irish Sea at	Broken Sewer	1	No	Floor and	Dept. of Ag.,	Yes	Yes

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted	Reported to EPA (Yes/No)	Closed (Y/N)
	Dalkey South.	Pipe			benching replaced with rapid hardening cement.	BIM, SFPA, MI, FSAI		
Uncontrolled Release INCI008159	Activation of Long and Short Sea Outfall at West Pier PS - adjacent to bathing water used year round	SWO exceptional rainfall and overflow expected	1	Yes	The public is advised of the overflow via an electronic message board.	Dept. of Ag, BIM, SFPA, MI, FSAI	Yes	No
Uncontrolled Release INCI011439	Overflow at Merrion Grove which, drained into surface water gully connected to Trimleston stream.	Blocked Sewer	1	No	Line jetted and blockage cleared	IFI, DCC, DLR	Yes	Yes

Table 3.5.2d - Summary of Overall Incidents

Number of Incidents in 2017	8
Number of Incidents reported to the EPA via EDEN in 2017	8
Explanation of any discrepancies between the two numbers above	N/A

Meath County Council Functional Area

Table 3.5.1e - Summary of Incidents

Incident Type (e.g. Non-compliance, Emission, spillage, pollution incident)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted.	Reported to EPA (Yes/No)	Closed (Yes/No)
Spillage/Uncontrolled Release INCI012065	Overflow from manhole at the back of Deerpark Housing Estate, Ashbourne. After investigation, the plant operator confirmed that the overflow event had occurred as reported. The spillage escaped into an existing drainage ditch which discharges to the River Broadmeadow.	EO caused by ragging or blocking	1	No	Blockage cleared and spillage cleaned up.	IFI	Yes	Yes
Uncontrolled Release INCI012186	Emergency overflow at Castle Street Pumping Station, Ashbourne, during adverse rainfall.	EO caused by ragging or blocking	1	No	Blockages cleared and pumps reset.	IFI	Yes	No
Uncontrolled Release INCI012625	Emergency overflow at Deerpark pumping station, Ashbourne.	EO caused by pump failure	1	No	Airlock cleared from the forward feed pumps. This subsequently lowered the level in the storm tanks	IFI	Yes	Yes

Incident Type (e.g. Non-compliance, Emission, spillage, pollution incident)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted.	Reported to EPA (Yes/No)	Closed (Yes/No)
					and the overflow stopped.			
Uncontrolled Release INCI012647	Emergency overflow at Kilbride pumping station.	EO caused by pump failure	1	No	Duty pump reset and standby pump replaced.	IFI	Yes	Yes
Uncontrolled Release INCI012737	Emergency overflow at Milltown pumping station to the river Broadmeadow.	EO caused by power failure	1	No	Pumps reset by caretaker	IFI	Yes	Yes
Uncontrolled Release INCI013357	Emergency overflow at Castle street pumping station Ashbourne Co. Meath.	EO caused by ragging or blocking	1	No	Pumps lifted and cleared	IFI	Yes	No
Uncontrolled Release INCI013429	Emergency overflow at Ratoath pumping station. The manhole in front of the pumping station entrance overflowed into a tributary the river Broad meadow	EO caused by pump failure	1	No	Pumps reset	IFI	Yes	No
Uncontrolled Release INCI013412	An Emergency overflow occurred at Castle Street pumping station, Ashbourne, Co. Meath.	EO caused by ragging or blocking	1	No	Pumps lifted and cleared	IFI	Yes	No

Table 3.5.2e - Summary of Overall Incidents

Number of Incidents in 2017	8
Number of Incidents reported to the EPA via EDEN in 2017	8
Explanation of any discrepancies between the two numbers above	N/A

3.6. Sludge/Other inputs to the WWTP

'Other inputs' to the Ringsend waste water treatment plant are summarised in **Table 3.6** below.

Table 3.6 - Other Inputs

Input type	**m^3/year**	**PE**	**% of load to WWTP Per Day**	**Included in Influent Monitoring (Y/N)?**	**Is there a leachate/sludge acceptance procedure for the WWTP? (Y/N)**	**Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)**
Domestic /Septic Tank Sludge*	700	9 PE/day From Volume	<0.0005 % (PE)	Yes	Yes	Yes
Industrial Sludge **Commercial Sludge**	35,905 33,624	438 410	0.024% (PE) 0.022% (PE)	Yes	Yes	Yes
Landfill Leachate (delivered by tanker) – Ballynagran Landfill – Wicklow County Council	20,775	293 PE/day from Volume	0.014% (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Kerdiffstown Landfill – Kildare County Council	11,144	136 PE/day from Volume	0.007 % (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill Leachate (delivered by tanker) – Dreher Landfill, Kildare County Council Bord Na Mona	13,597	166 PE/day From volume	0.009% (PE)	Yes	Yes - Tanker Waste Consignment Note System	Yes
Landfill leachate (delivered by tanker) Rampere Landfill,	108	2 PE / day From volume	<0.0002%		Yes - Tanker Waste Consignment Note System	Yes

Input type	m^3/year	PE	% of load to WWTP Per Day	Included in Influent Monitoring (Y/N)?	Is there a leachate/sludge acceptance procedure for the WWTP? (Y/N)	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
Wicklow County Council						
Landfill Leachate (delivered by sewer network) Dunsink Civic Amenity – Fingal County Council	104,182	1,269 PE /day from volume	0. 069% (average daily PE)	Yes	Licence consent	Yes
Other (specify) Value Engineering	N/A					

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

4. Infrastructural Assessment and Programme of Improvements

4.1. Storm Water Overflow Identification and Inspection Report

Dublin City Council Functional Area

The Storm Water Overflow Summary Report, **Tables 4.1.1a** and **4.1.2a** are shown overleaf. **Table 4.1.1a** has been updated in 2017 to include new information available from the City Centre Sewerage Scheme. The 86 CSOs highlighted in blue are those that relate to the city centre catchment, the 21 CSOs highlighted in red have been identified as 'not a CSO', and the 122 CSOs highlighted in grey fall outside the city centre catchment. Refer to **Appendix 7.4** for Storm Water Overflows which occurred from SW2 in the Ringsend WWTP in 2017.

Table 4.1.1a- SWO Identification and Inspection Summary Report

SWO Code	Grid Reference		Included in S.4 of WWDL	DECLG Assessment Criteria				No. of Times Activated in 2017	Total Volume Discharged in 2017 (m^3)	Total Volume Discharged in 2017 (PE)	Measured/ Estimated	
PT_CD	EASTING	NORTHING		Q1	Q2	Q3	Q4		Volume Emitted			STC25 Ref
CSO36DCC	317234	234294	Y	No	Unknown	Unknown	No	81	30723	Unknown	E	SO17342203
CSO49DCC	313699	234415	Y	No	Unknown	Unknown	No	86	115611	Unknown	E	SO13346404
CSO84DCC	315139	234124	Y	No	Unknown	Unknown	No	63	286323	Unknown	E	SO15341109
CSO47DCC	315278	234216	Y	No	Unknown	Unknown	No	90	64648	Unknown	E	SO15342204
CSO51DCC	315102	233451	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO15331433
CSO69DCC	310913	233836	Y	No	Unknown	Unknown	No	3	8	Unknown	E	SO10339801
CSO34DCC	316933	235409	Y	No	Unknown	Unknown	No	65	67871	Unknown	E	SO16359411
CSO1DCC	314772	234232	Y	No	Unknown	Unknown	No	87	152207	Unknown	E	SO14347206
CSO48DCC	315133	234184	Y	No	Unknown	Unknown	No	84	78487	Unknown	E	SO15341117
CSO33DCC	317191	234633	Y	No	Unknown	Unknown	No	39	8100	Unknown	E	SO17341601
CSO72DCC	312286	233530	Y	No	Unknown	Unknown	No	2	49	Unknown	E	SO12332506
CSO89DCC	317775	234427	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO17347411
CSO14DCC	316849	234337	Y	No	Unknown	Unknown	No	65	24974	Unknown	E	SO16348302
CSO80DCC	314205	234270	Y	No	Unknown	Unknown	No	35	23250	Unknown	E	SO14342204
CSO5DCC	317054	235998	Y	No	Unknown	Unknown	No	92	100057	Unknown	E	SO17360001
CSO11DCC	316107	234398	Y	No	Unknown	Unknown	No	6	2221	Unknown	E	SO16341310
CSO73DCC	317455	235389	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO17354303
CSO2DCC	314663	234263	Y	No	Unknown	Unknown	No	72	76883	Unknown	E	SO14346214
CSO66DCC	313731	234212	Y	No	Unknown	Unknown	No	48	30834	Unknown	E	SO13347206
CSO83DCC	313953	234344	Y	No	Unknown	Unknown	No	89	114045	Unknown	E	SO13349307
CSO62DCC	317394	234266	Y	No	Unknown	Unknown	No	69	24955	Unknown	E	SO17343203
CSO7DCC	314962	233226	Y	No	Unknown	Unknown	No	70	22101	Unknown	E	SO14339210
CSO15DCC	312958	234298	Y	No	Unknown	Unknown	No	45	62354	Unknown	E	SO12349204
CSO65DCC	313820	234224	Y	No	Unknown	Unknown	No	43	37760	Unknown	E	SO13348206
CSO60DCC	315398	233788	Y	No	Unknown	Unknown	No	11	747	Unknown	E	SO15333701
CSO87DCC	316865	234654	Y	No	Unknown	Unknown	No	42	8441	Unknown	E	SO16348605
CSO35DCC	316885	233670	Y	No	Unknown	Unknown	No	68	47881	Unknown	E	SO16338601

SWO Code	Grid Reference		Included in S.4 of WWDL	DECLG Assessment Criteria				No. of Times Activated in 2017	Total Volume Discharged in 2017 (m^3)	Total Volume Discharged in 2017 (PE)	Measured/ Estimated	
PT_CD	EASTING	NORTHING		Q1	Q2	Q3	Q4		Volume Emitted			STC25 Ref
CSO10DCC	313533	233809	Y	No	Unknown	Unknown	No	34	21943	Unknown	E	SO13335803
CSO71DCC	310510	234079	Y	No	Unknown	Unknown	No	40	15679	Unknown	E	SO10345001
CSO26DCC	312632	233616	Y	No	Unknown	Unknown	No	14	1516	Unknown	E	SO12336604
CSO46DCC	315717	234317	Y	No	Unknown	Unknown	No	20	11738	Unknown	E	SO15347306
CSO29DCC	315417	234244	Y	No	Unknown	Unknown	No	41	5356	Unknown	E	SO15344205
CSO23DCC	316108	234474	Y	No	Unknown	Unknown	No	35	5431	Unknown	E	SO16341406
CSO76DCC	311757	233212	Y	No	Unknown	Unknown	No	89	11854	Unknown	E	SO11337206
CSO45DCC	315551	234270	Y	No	Unknown	Unknown	No	22	6225	Unknown	E	SO15345206
CSO19DCC	316857	236017	Y	No	Unknown	Unknown	No	28	3609	Unknown	E	SO16368009
CSO25DCC	314580	234294	Y	No	Unknown	Unknown	No	51	31757	Unknown	E	SO14345210
CSO28DCC	313210	233631	Y	No	Unknown	Unknown	No	14	2209	Unknown	E	SO13332616
CSO50DCC	315113	233446	Y	No	Unknown	Unknown	No	40	10003	Unknown	E	SO15331414
CSO27DCC	315533	234142	Y	No	Unknown	Unknown	No	2	3	Unknown	E	SO15345113
CSO21DCC	315487	234037	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO15344011
CSO82DCC	317299	235411	Y	No	Unknown	Unknown	No	20	6878	Unknown	E	SO17353415
CSO18DCC	316852	236022	Y	No	Unknown	Unknown	No	3	407	Unknown	E	SO16368001
CSO8DCC	316161	236672	Y	No	Unknown	Unknown	No	2	61	Unknown	E	SO16361609
CSO74DCC	312533	233579	Y	No	Unknown	Unknown	No	37	4374	Unknown	E	SO12335507
CSO70DCC	310244	234243	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO10342201
CSO68DCC	310355	234122	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO10343105
CSO78DCC	314686	234201	Y	No	Unknown	Unknown	No	24	8180	Unknown	E	SO14346205
CSO24DCC	314430	234315	Y	No	Unknown	Unknown	No	41	8435	Unknown	E	SO14344316
CSO43DCC	313387	233674	Y	No	Unknown	Unknown	No	15	1310	Unknown	E	SO13333602
CSO6DCC	314959	233223	Y	No	Unknown	Unknown	No	70	22101	Unknown	E	SO14339210
CSO61DCC	315322	233808	Y	No	Unknown	Unknown	No	6	195	Unknown	E	SO15333801
CSO20DCC	313539	233798	Y	No	Unknown	Unknown	No	2	12	Unknown	E	SO13335709
CSO38DCC	312690	234346	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO12346304
CSO13DCC	314893	234204	Y	No	Unknown	Unknown	No	36	8319	Unknown	E	SO14348209
CSO9DCC	316043	236686	Y	No	Unknown	Unknown	No	15	349	Unknown	E	SO16360601

SWO Code	Grid Reference		Included in S.4 of WWDL	DECLG Assessment Criteria				No. of Times Activated in 2017	Total Volume Discharged in 2017 (m^3)	Total Volume Discharged in 2017 (PE)	Measured/ Estimated	
PT_CD	EASTING	NORTHING		Q1	Q2	Q3	Q4		Volume Emitted			STC25 Ref
CSO12DCC	316024	234360	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO16340308
CSO17DCC	312966	234298	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO12349202
CSO37DCC	312015	233665	Y	No	Unknown	Unknown	No	3	19	Unknown	E	SO12330604
CSO3DCC	315862	234379	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO15348308
CSO40DCC	309728	234678	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO09347603
CSO41DCC	314987	234131	Y	No	Unknown	Unknown	No	5	894	Unknown	E	SO14349101
CSO44DCC	316904	236073	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO16369001
CSO52DCC	317843	233804	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO17338807
CSO53DCC	309604	234376	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO09346312
CSO55DCC	312990	233670	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO12339609
CSO57DCC	313022	233676	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO13330605
CSO58DCC	313064	233680	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO13330604
CSO59DCC	314244	234324	Y	No	Unknown	Unknown	No	23	2734	Unknown	E	SO14342308
CSO67DCC	310350	234128	Y	No	Unknown	Unknown	No	7	3309	Unknown	E	SO10343107
CSO77DCC	314492	234246	Y	No	Unknown	Unknown	No	1	84	Unknown	E	SO14344202
CSO79DCC	314322	234267	Y	No	Unknown	Unknown	No	1	27	Unknown	E	SO14343207
CSO85DCC	315136	234112	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO15341103
Not Applicable	317371	235907	Y	No	Unknown	Unknown	No	2	76	Unknown	E	SO17353903
Not Applicable	313217	233706	Y	No	Unknown	Unknown	No	14	331	Unknown	E	SO13332705
Not Applicable	310278	234430	Y	No	Unknown	Unknown	No	2	38	Unknown	E	SO10342403
Not Applicable	317235	235455	Y	No	Unknown	Unknown	No	11	2654	Unknown	E	SO17352412
Not Applicable	313375	233124	Y	No	Unknown	Unknown	No	18	4167	Unknown	E	SO13333107
Not Applicable	317667	234933	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO17346901
Not Applicable	317628	234924	Y	No	Unknown	Unknown	No	1	871	Unknown	E	SO17346909
Not Applicable	317494	234699	Y	No	Unknown	Unknown	No	1	1909	Unknown	E	SO17344601
Not Applicable	312970	234365	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO12349301
Not Applicable	310814	233884	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO10338801
Not Applicable	308816	234950	Y	No	Unknown	Unknown	No	24	1653	Unknown	E	SO08348915
Not Applicable	313272	233611	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO13332604

SWO Code	Grid Reference		Included in S.4 of WWDL	DECLG Assessment Criteria				No. of Times Activated in 2017	Total Volume Discharged in 2017 (m^3)	Total Volume Discharged in 2017 (PE)	Measured/ Estimated	
PT_CD	EASTING	NORTHING		Q1	Q2	Q3	Q4		Volume Emitted			STC25 Ref
Not Applicable	314162	233929	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO14331902
CSO88DCC	317683	234884	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17346807
CSO81DCC	317303	235416	Y	No	Unknown	Unknown	No	20	6878	Unknown	E	SO17353415
CSO32DCC	317182	234623	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17341607
CSO30DCC	312010	233527	Y	No	Unknown	Unknown	No	3	19	Unknown	E	SO12330604
CSO22DCC	311516	232830	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO11325805
CSO4DCC	317065	235991	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17350906
CSO75DCC	312545	233667	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO12335605
CSO63DCC	314704	234412	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO14347406
CSO105DCC	317843	233804	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO17338807
CSO16DCC	312966	234298	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO12349202
CSO54DCC	312990	233670	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO12339609
CSO56DCC	313022	233676	Y	No	Unknown	Unknown	No	0	0	Unknown	E	SO13330605
CSO64DCC	314700	234516	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO14347510
Not Applicable	311915	236281	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO11369201
Not Applicable	313857	233351	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13338304
Not Applicable	313909	233340	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13339307
Not Applicable	312628	235825	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO12356809
Not Applicable	312810	235654	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO12358608
Not Applicable	312536	235894	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO12355807
Not Applicable	317075	235588	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17350508
Not Applicable	311497	233703	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO11334707
CSO186DCC	317881	232507	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17328507
CSO180DCC	318107	232850	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18321802
CSO171DCC	317550	232447	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17325401
CSO176DCC	317639	232519	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17326503
CSO168DCC	318139	233413	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18331407
CSO156DCC	322127	237601	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO22371604
CSO184DCC	317824	232486	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17328405

SWO Code	Grid Reference		Included in S.4 of WWDL	DECLG Assessment Criteria				No. of Times Activated in 2017	Total Volume Discharged in 2017 (m^3)	Total Volume Discharged in 2017 (PE)	Measured/ Estimated	
PT_CD	EASTING	NORTHING		Q1	Q2	Q3	Q4		Volume Emitted			STC25 Ref
CSO118DCC	316968	236195	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO16369104
CSO103DCC	310784	232218	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO10327207
CSO128DCC	321116	237636	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO21371602
CSO188DCC	314451	230170	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO14304105
CSO102DCC	310741	232270	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO10327205
CSO153DCC	313415	238521	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13383501
CSO164DCC	323611	238744	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO23386705
CSO173DCC	317827	231358	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17318310
CSO181DCC	315892	232164	Y	Yes	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO15328193
CSO152DCC	321004	236217	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO2130202
CSO169DCC	317909	232497	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17329403
CSO112DCC	315347	237184	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO15373102
CSO134DCC	318903	237248	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18378205
CSO142DCC	323129	238499	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO23381414
CSO177DCC	314416	231521	Y	Yes	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO14314503
CSO93DCC	319319	231456	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19313502
CSO94DCC	310380	232486	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO10323401
CSO125DCC	318032	236337	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18360302
CSO147DCC	322791	238174	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO22387104
CSO190DCC	317176	230639	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17301604
CSO119DCC	317476	236267	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17364203
CSO182DCC	314820	232377	Y	Yes	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO14328311
CSO140DCC	322306	241250	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO22413204
CSO107DCC	318741	232076	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18327003
CSO141DCC	321150	238284	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO21381202
CSO146DCC	315371	237860	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO15373801
CSO161DCC	315285	239290	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO15394203
CSO97DCC	319373	230608	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19303601
CSO178DCC	314413	231521	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO14314501

SWO Code	Grid Reference		Included in S.4 of WWDL	DECLG Assessment Criteria				No. of Times Activated in 2017	Total Volume Discharged in 2017 (m^3)	Total Volume Discharged in 2017 (PE)	Measured/ Estimated	
PT_CD	EASTING	NORTHING		Q1	Q2	Q3	Q4		Volume Emitted			STC25 Ref
CSO167DCC	317890	231357	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17318301
CSO124DCC	317564	236640	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17365601
CSO187DCC	316306	230383	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO16303302
CSO150DCC	321216	238352	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO21382304
CSO136DCC	318559	237699	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18375603
CSO170DCC	317699	231474	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17316403
CSO114DCC	315933	237459	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO15379403
CSO120DCC	317288	237032	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17372001
CSO189DCC	316956	230477	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	
CSO131DCC	320166	237863	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO20371802
CSO175DCC	317743	231303	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17317302
CSO151DCC	313201	236289	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13362202
CSO139DCC	313685	238438	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13386401
CSO101DCC	319921	230594	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19309504
CSO90DCC	311589	231731	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO11315707
CSO98DCC	319373	230608	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19303603
CSO126DCC	319927	235869	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19359806
CSO197DCC	316297	237050	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO16372001
CSO130DCC	316652	238118	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO16383101
CSO31DCC	315899	236809	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO15368802
CSO135DCC	313840	237484	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13378401
CSO129DCC	314692	238454	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO14386402
CSO157DCC	313270	238784	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13382701
CSO100DCC	313421	232721	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13324701
CSO104DCC	313403	232803	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13324801
CSO106DCC	319384	231534	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19313502
CSO109DCC	317414	238590	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17384504
CSO122DCC	319420	239940	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19394906
CSO132DCC	312746	239249	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	

SWO Code	Grid Reference		Included in S.4 of WWDL	DECLG Assessment Criteria				No. of Times Activated in 2017	Total Volume Discharged in 2017 (m^3)	Total Volume Discharged in 2017 (PE)	Measured/ Estimated	
PT_CD	EASTING	NORTHING		Q1	Q2	Q3	Q4		Volume Emitted			STC25 Ref
CSO133DCC	313170	238854	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13381805
CSO143DCC	314316	238253	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO14383203
CSO144DCC	320761	238396	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO20387301
CSO149DCC	313240	238954	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13381805
CSO154DCC	322130	239548	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO22391501
CSO155DCC	321529	237974	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO21375901
CSO158DCC	323132	241110	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	
CSO160DCC	313721	237669	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13377607
CSO162DCC	321555	235735	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO21355703
CSO163DCC	314106	237565	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO14371501
CSO165DCC	320130	235782	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO20351704
CSO166DCC	317562	230767	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17305702
CSO174DCC	317852	231363	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17318310
CSO179DCC	318132	233429	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18331410
CSO183DCC	316790	230086	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	In South Dublin CC
CSO185DCC	316609	232018	Y	Yes	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO16325007
CSO195DCC	314828	229637	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	In South Dublin CC
CSO196DCC	314817	229635	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	In South Dublin CC
CSO42DCC	315978	236912	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO15369902
CSO91DCC	311398	230549	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	
CSO92DCC	313440	232441	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13324405
CSO95DCC	318880	233947	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18338911
CSO96DCC	313725	232628	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13327607
CSO99DCC	313291	229848	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13292801
Not Applicable	318105	232849	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18321802
Not Applicable	317326	233389	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17333303
Not Applicable	318249	230834	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18302806
Not Applicable	317785	231204	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17317203
Not Applicable	315273	237272	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO15372202

SWO Code	Grid Reference		Included in S.4 of WWDL	DECLG Assessment Criteria				No. of Times Activated in 2017	Total Volume Discharged in 2017 (m^3)	Total Volume Discharged in 2017 (PE)	Measured/ Estimated	
PT_CD	EASTING	NORTHING		Q1	Q2	Q3	Q4		Volume Emitted			STC25 Ref
Not Applicable	318892	237254	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO18378205
Not Applicable	319051	237218	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19370201
Not Applicable	319029	237382	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19370306
Not Applicable	321437	236402	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO21364410
Not Applicable	319242	235931	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19352902
Not Applicable	321196	236118	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO21361101
Not Applicable	319348	237237	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19373202
Not Applicable	316237	236869	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO16362801
Not Applicable	317482	236223	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17364201
Not Applicable	317527	236397	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17365302
Not Applicable	317858	236891	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17368804
Not Applicable	315674	237839	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO15376802
Not Applicable	320457	237749	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO20374701
Not Applicable	322654	239351	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO22396301
Not Applicable	323087	239136	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO23390101
Not Applicable	313840	237484	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO13378401
Not Applicable	319444	237359	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19374302
Not Applicable	314609	237773	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO14376708
Not Applicable	312837	239706	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO12398709
Not Applicable	317275	236972	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17362907
Not Applicable	319687	233798	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO19336701
Not Applicable	317083	240679	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	In Fingal
Not Applicable	320743	236300	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO20367301
Not Applicable	317339	236668	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17363605
Not Applicable	317840	236426	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO17368401
Not Applicable	320292	236509	Y	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	N/A	SO20362507

Table 4.1.2a - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m^3/yr)?	Data not available
How much sewage was discharged via SWOs in the agglomeration in the year (P.E.)?	Data not available
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2017?	Data not available
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO assessment includes the requirements of Schedule A3 & C3	Yes, where applicable
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	No

South Dublin County Council Functional Area

Table 4.1.1b- 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)	Compliance with DoEHLG Criteria	No. of times activated in 2017 (No. of events)	Total volume discharged in 2017(m^3)	Total volume discharged in 2017(P.E.)	Estimated /Measured data
SDCCPS01	702432X,735066Y	Lucan Spa PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS01	702432X,735066Y	Lucan Spa PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS02	703221X,735072Y	Lucan Low Level PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS03	703964X,734515Y	Esker Lane PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS04	707012X,735193	Quarryvale PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS05	708588X,734325Y	Johnstown PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS06	703073X,732117Y	Grange Castle PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS07	706856X, 732230Y	Ballymanagin PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS08	700098X,728983Y	Peamount PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS09	701184X,728875Y	Newcastle PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS10	701532X,727416Y	Tay Lane PS	Low	Compliant	1	Unknown	Unknown	E
SDCCPS11	712281X,729622Y	Whitehall PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS12	711483X,728060Y	Spawell PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS13	707631X,735459Y	King's Hospital PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS14	704673X,732849Y	Lynches Lane PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS15	704314X,732587	Kishogue PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS16	708002X,730773Y	St Brigids PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS17	707770X, 729780Y	Belgard PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS18	705601X,727665Y	Ard Mor PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS19		College Drive	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS21	701651X,734384Y	Tobermaclugg PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCPS22		Adamstown PS	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSN01		Lucan Siphon	Low	Compliant	Unknown	Unknown	Unknown	N/A

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High / Medium / Low)	Compliance with DoEHLG Criteria	No. of times activated in 2017 (No. of events)	Total volume discharged in 2017(m^3)	Total volume discharged in 2017(P.E.)	Estimated /Measured data
		(Liffey) - St Eds Muncher						
SDCCSN02		Templeogue Siphon (Dodder)	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSN03		Owendoher Siphon	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSN04		UCD (Belfield) Siphon	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSN05		Ringsend Siphon	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSN06		Kilvere	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSW015		Milltown Overflow	Low	Compliant	3	Unknown	Unknown	N/A
SDCCSWO01		Perrystown Tank	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO02		Treepark Road	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO03		Airton Road	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO04		Avonmore Road	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO05		Brookfield Cottage	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO06		Harris Trucks	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO07		St Peter's Road	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO08		Castle View Road	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO09		Aylmer Road	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO10		Kimmage Road West	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO11		Springfield Avenue	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO12		Loreto Terrace	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO13		Oldcourt Manor	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSWO14		Stewarts Hospital	Low	Compliant	Unknown	Unknown	Unknown	N/A
SDCCSW016		Glenvara	Low	Compliant	Unknown	Unknown	Unknown	N/A

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High / Medium / Low)	Compliance with DoEHLG Criteria	No. of times activated in 2017 (No. of events)	Total volume discharged in 2017(m^3)	Total volume discharged in 2017(P.E.)	Estimated /Measured data
SDCCSW017		Mount Carmel	Low	Compliant	3	Unknown	Unknown	E
SDCCSW018	310207.37X, 27496.47Y	Glenview Park	Low	To be Assessed	Unknown	Unknown	Unknown	N/A

Table 4.1.2b - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m^3/yr)?	Unknown
How much sewage was discharged via SWOs in the agglomeration in the year (P.E.)?	Unknown
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2017?	Unknown
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	SDCCSW018 to be assessed.
The SWO assessment includes the requirements of Schedule A3 & C3	Yes
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	N/A

Fingal County Council Functional Area

Table 4.1.1c - SWO Identification and Inspection Summary Report

A Storm Water Overflow Identification & Inspection report is not required.

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High / Medium / Low)	Compliance with DoEHLG Criteria	No. of times activated in 2017 (No. of events)	Total volume discharged in 2017(m^3)	Total volume discharged in 2017 (P.E.)	Estimated /Measured data
Fingal- SW21	317088E, 240688N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW22	318083E, 241519N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal-SW23	331227E, 241541N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal-SW26	324686E, 240383N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal-SW27	324837E, 239149N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal-SW32	324858E, 244368N	A3	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal SW33	323560E, 242484N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal-SW34	323855E,	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High / Medium / Low)	Compliance with DoEHLG Criteria	No. of times activated in 2017 (No. of events)	Total volume discharged in 2017(m^3)	Total volume discharged in 2017 (P.E.)	Estimated /Measured data
	243158N							
Fingal- SW35	323969E, 241503N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal-SW37	324179E, 240115N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW38	324387E, 239355N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW39	323228E. 239139N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal-SW40	323086E, 239133N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal-SW41	323299E, 238441N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal-SW42	326312E, 238143N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW43	325886E, 239468N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW44	326155E, 239701N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High / Medium / Low)	Compliance with DoEHLG Criteria	No. of times activated in 2017 (No. of events)	Total volume discharged in 2017(m^3)	Total volume discharged in 2017 (P.E.)	Estimated /Measured data
Fingal- SW45	327347E, 239672N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal-SW46	327789E, 239464N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW47	328391E, 239452N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW48	328800E, 239337N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW49	328711E, 239308N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW50	306076E, 243269N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW51	308577E, 238545N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW52	308318E, 238766N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW53	309614E, 238262N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW54	308007E, 238729N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High / Medium / Low)	Compliance with DoEHLG Criteria	No. of times activated in 2017 (No. of events)	Total volume discharged in 2017(m^3)	Total volume discharged in 2017 (P.E.)	Estimated /Measured data
Fingal- SW55	308950E, 237336N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A
Fingal- SW56	306505E, 237441N	Yes	Not assessed	Not assessed	Unknown	Unknown	Unknown	N/A

Table 4.1.2c - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m^3/yr)?	Unknown
How much sewage was discharged via SWOs in the agglomeration in the year (P.E.)?	Unknown
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2017?	Unknown
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	Not assessed
The SWO assessment includes the requirements of Schedule A3 & C3	Not assessed
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	N/A

Dún Laoghaire Rathdown County Council Functional Area

A summary of the significance and operation for 2017 is included below.

Table 4.1.1d- SWO Identification and Inspection Summary Report

WWDL Name/Code for the Storm Water Overflow	X co-ord Irish Grid Reference	Y co-ord Irish Grid Reference	Compliance with DoEHLG Criteria	Significance of the overflow (High / Medium / Low)	Included in Schedule A4 of the WWDL	No Times activated in 2017	Total Volume discharged in 2017(m^3)	Total Volume discharged in 2017 (PE)*	Estimated/ Measured Data
DLRCC/B5/R/001	317559	230769	See Table below	Low	Yes	0	0	0	Estimated
DLRCC/B5/R/002	316935	230487	See Table below	Low	Yes	0	0	0	Estimated
DLRCC/B5/R/003	319999	230505	See Table below	Low	Yes	0	0	0	Estimated+ Measured
DLRCC/B5/R/004	319406	229488	See Table below	Low	Yes	3	300	5	Estimated+ Measured
DLRCC/B5/R/005	316783	230085	SDCC	Low	SDCC	SDCC	SDCC	SDCC	SDCC
DLRCC/B5/R/006	316689	230050	SDCC	Low	SDCC	SDCC	SDCC	SDCC	SDCC
DLRCC/B5/R/007	315556	229632	See Table below	Low	Yes	3	3000	47	Estimated
DLRCC/B5/R/008	315434	229529	See Table below	Low	Yes	1	0	0	Estimated
DLRCC/B5/R/009	315522	229162	See Table below	Medium	Yes	1	50	1	Estimated
DLRCC/B5/R/010	316969	229568	See Table below	Low	Yes	0	0	0	Estimated
DLRCC/B5/R/011	316987	229386	See Table below	Low	Yes	0	0	0	Estimated
DLRCC/B5/R/012	316984	229359	See Table below	Low	Yes	0	0	0	Estimated
DLRCC/B5/R/013	316940	229706	See Table below	Low	Yes	1	300	5	Estimated
DLRCC/B5/R/014	319938	230443	See Table below	Low	Yes	2	100	2	Estimated

WWDL Name/Code for the Storm Water Overflow	X co-ord Irish Grid Reference	Y co-ord Irish Grid Reference	Compliance with DoEHLG Criteria	Significance of the overflow (High / Medium / Low)	Included in Schedule A4 of the WWDL	No Times activated in 2017	Total Volume discharged in 2017(m^3)	Total Volume discharged in 2017 (PE)*	Estimated/ Measured Data
DLRCC/B5/R/015	320280	230216	See Table below	Low	Yes	2	400	5	Estimated
DLRCC/B5/R/016	320631	230024	See Table below	Low	Yes	2	400	5	Estimated
DLRCC/B5/R/017	320837	229937	See Table below	Medium	Yes	10	2500	40	Estimated
DLRCC/B5/R/018	321247	229477	See Table below	Low	Yes	0	0	0	Estimated
DLRCC/B5/R/019	321124	229395	See Table below	Low	Yes	0	0	0	Estimated
DLRCC/B5/R/020	321567	229551	See Table below	Low	Yes	0	0	0	Estimated
DLRCC/B5/R/021	319142	227929	See Table below	Low	Yes	3	300	5	Estimated
DLRCC/B5/R/022	320736	228221	See Table below	Low	Yes	0	0	0	Estimated
DLRCC/B5/R/023	321681	229019	See Table below	Low	Yes	1	100	2	Estimated
DLRCC/B5/R/024	321681	229019	See Table below	Low	Yes	1	100	2	Estimated
DLRCC/B5/R/025	321806	229409	See Table below	Low	Yes	0	0	0	Estimated
DLRCC/B5/R/026	322033	228395	See Table below	Low	Yes	2	200	3	Estimated
DLRCC/B5/R/027	322573	228364	See Table below	Low	Yes	2	300	5	Estimated
DLRCC/B5/R/028	324953	228312	See Table below	Low	No	10	40,000	626	Estimated

*PE = volume/0.175*365

SWO Identification and Inspection Summary Table B

Code	Criteria Q1	Criteria Q2	Criteria Q3	Criteria Q4	Formula A Compliance
DLRCC/B5/R/001	No	No	No	No	Pre 1990
DLRCC/B5/R/002	No	No	No	No	Pre 1990
DLRCC/B5/R/003	No	No	No	No	Pre 1990
DLRCC/B5/R/004	No	No	No	No	Pre 1990
DLRCC/B5/R/005	No	No	No	No	Pre 1990
DLRCC/B5/R/006	SDCC	SDCC	SDCC	SDCC	Pre 1990
DLRCC/B5/R/007	SDCC	SDCC	SDCC	SDCC	Pre 1990
DLRCC/B5/R/008	No	No	No	No	Pre 1990
DLRCC/B5/R/009	Yes	Yes	No	No	Pre 1990
DLRCC/B5/R/010	No	No	No	No	Pre 1990
DLRCC/B5/R/011	No	No	No	No	Pre 1990
DLRCC/B5/R/012	No	No	No	No	Pre 1990
DLRCC/B5/R/013	No	No	No	No	Pre 1990
DLRCC/B5/R/014	No	No	No	No	Pre 1990
DLRCC/B5/R/015	No	No	No	No	Pre 1990
DLRCC/B5/R/016	No	No	No	No	Pre 1990
DLRCC/B5/R/017	No	Yes	No	No	Pre 1990
DLRCC/B5/R/018	No	No	No	No	Pre 1990
DLRCC/B5/R/019	No	No	No	No	Pre 1990
DLRCC/B5/R/020	No	No	No	No	Pre 1990
DLRCC/B5/R/021	No	No	No	No	Pre 1990
DLRCC/B5/R/022	No	No	No	No	Pre 1990
DLRCC/B5/R/023	No	No	No	No	Pre 1990
DLRCC/B5/R/024	No	No	No	No	Pre 1990
DLRCC/B5/R/025	No	No	No	No	Pre 1990
DLRCC/B5/R/026	No	No	No	No	Pre 1990
DLRCC/B5/R/027	No	No	No	No	Pre 1990
DLRCC/B5/R/028	No	No	No	No	Unassessed

The information above is based on a mixture of monitoring and experience operations staff and as such is a best estimate of current conditions.

Table 4.1.2d - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m^3/yr)?	48,050
How much sewage was discharged via SWOs in the agglomeration in the year (P.E.)?	752
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2017?	Approx. 1.7%
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	No. SDCCSW018 to be assessed.
The SWO assessment includes the requirements of Schedule A3 & C3	Yes
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	No

Meath County Council Functional Area

In 2014, Meath County Council completed the Contract 5 Ashbourne/Ratoath and Kilbride sewer rehabilitation project. A SWO identification and inspection report was prepared in the 2016 AER for the Deerpark Pumping Station (S.W 1 Meath), Millennium Park Pumping Station (S.W. 3 Meath) and the Ratoath Pumping Station (S.W 5 Meath). A SWO identification and inspection report has been prepared for Milltown Pumping Station (S.W.2), Castle Street Pumping Station (S.W.4), Moulden Bridge Pumping Station (S.W.6), Kilbride Pumping Station (S.W.7) and Cherry Tree Drive Pumping Station (S.W.8). See **Appendix 7.4**.

Table 4.1.1e - 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/Med/ Low)	Compliance with DoEHLG criteria	No. of times activated in 2017 (No. of events)	Total volume discharged in 2017 (m^3)	Total volume discharged in 2017 (P.E.)	Estimated / Measured data
S.W 1 Meath	307000 251960	Yes	Low	Compliant	Unknown	Unknown	Unknown	Unknown
S.W 2 Meath	307220 251800	Yes	Low	Compliant	Unknown	Unknown	Unknown	Unknown
S.W 3 Meath	306100 252760	Yes	Low	Compliant	Unknown	Unknown	Unknown	Unknown
S.W 4 Meath	305890 252230	Yes	Low	Compliant	Unknown	Unknown	Unknown	Unknown
S.W 5 Meath	302640 251610	Yes	Low	Compliant	Unknown	Unknown	Unknown	Unknown
S.W 6 Meath	303240 251560	Yes	Low	Compliant	Unknown	Unknown	Unknown	Unknown
S.W 7 Meath	306676 245818	Yes	Low	Compliant	Unknown	Unknown	Unknown	Unknown
S.W 8 Meath	306330 246270	Yes	Low	Compliant	Unknown	Unknown	Unknown	Unknown

Table 4.1.2e - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m^3/yr)?	Unknown
How much sewage was discharged via SWOs in the agglomeration in the year (P.E.)?	Unknown
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2017?	Unknown
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	Unknown
The SWO assessment includes the requirements of relevant WWDL Schedules (Yes/No)	N/A
Have the EPA been advised of any additional SWOs / changes to Schedules A/C under Condition 1.7?	N/A

4.2. Report on progress made and proposals being developed to meet the improvement programme requirements

Condition 5 of the licence requires the licensee to prepare and implement an improvement programme to maximise the effectiveness and efficiency of the work as specified in Condition 5.1.

Dublin City Council Functional Area

Table 4.2.1a Specified Improvement Programme Summary

Specified Improvement Programmes	Licence Schedule (A or C)	Licence Completion Date	Date Expired?	Status of Works	Comments	Licensee Timeframe for Completing Works
Improvement Programme for Primary Discharge						
Upgrade waste water treatment plant and ancillary works in accordance with Condition 5.5	C.1	22nd December 2015	Yes	Part-commenced	The Project consists of three main elements as follows: **'Surgical Insertion' Works** The Surgical Works include upgrades to the sludge handling facilities, odour control capacity & site electrical upgrades. These works are to be completed in 2018. **Capacity Upgrade** The Capacity Upgrade contract was signed in December 2017. Detailed design is under way and site works commenced on 31st January 2018. The Capacity Upgrade is to be commissioned by Q1 2020. **SBR Retrofit** Retrofitting AGS technology to the existing treatment tanks is to commence in Q3 2019 (subject to ABP consent). The new SID application to omit the LSOT is to be submitted to ABP in Q2 2018.	Element 2 Capacity Upgrade Project – to complete end 2019. Element 3 SBR Retrofit Works to commence in late 2018 (subject to ABP consent). Plant capacity expected to meet demand and License requirements in late 2021/early 2022.

Specified Improvement Programmes	Licence Schedule (A or C)	Licence Completion Date	Date Expired?	Status of Works	Comments	Licensee Timeframe for Completing Works
Upgrade storm water storage tank at WWTP as necessary	C.1	Not applicable	Not applicable	Not applicable	There are no current plans to upgrade the storm water storage tanks at the Works. This position being reviewed as part of WwTW Detailed Design	Not applicable
City Centre Sewerage Scheme (CCSS)	C.3	None specified	Not applicable	In progress	N/A	Hydraulic model construction and verification complete. Final report due in 2018.
North Docklands Sewerage Scheme	C.4	None specified	Not applicable	Work on Site	95%	
Rathmines and Pembroke (R&P) Scheme now renamed as *'Rathmines – Pembroke and Grand Canal Tunnel Drainage Area Study'*	C.3	None specified	Not applicable		At TOR stage for Consultant Appointment.	

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

Table 4.2.2a Improvement Programme Summary

Improvement Identifier	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date	Comments
WWTP Upgrade	WWTP Upgrade	WWTP (Condition 5.2)	Contract documents being finalised and going to tender in Q2 2018	Late 2021/early 2022 to meet demand and License requirements - subject to IW planning approval.	WWTP (Condition 5.2)

1.2.3 Upgrades to Ringsend Wastewater Treatment Works

Irish Water's Project Strategy is to:

1. Complete on-going Surgical Works.
2. Install Capacity Upgrade – the Capacity Upgrade (400,000PE) will be designed and constructed for nutrient removal using Aerobic Granular Sludge (AGS) technology to increase capacity and to produce a higher quality effluent.
3. Omit Long Sea Outfall Tunnel (LSOT) by installing the AGS technology in both the Capacity Upgrade and in the existing treatment tanks. (Requires new Planning Consent).

Surgical Works were commenced prior to the transfer of the project to Irish Water. The Surgical Works include upgrades to the sludge handling facilities, odour control capacity & site electrical upgrades.

Irish Water has demonstrated that the AGS technology will achieve the required compliance and capacity objectives at Ringsend WwTP using a two-step process proving strategy.

- Process Proving Step 1 (PPS1) was completed June 2016. The final effluent quality from PPS1 demonstrated that the technology will achieve the required effluent standards for the Ringsend Plant.
- Process Proving Step 2 (PPS2), which involved installing the AGS technology in one of the existing treatment tanks has been operational since June 2017 and is achieving the required effluent standards. PPS2 has been signed off by Irish Water as demonstrating that the AGS technology will achieve the required effluent standards and that it will scale up successfully for the Ringsend WwTP.
- Also associated with PPS2 is the investigation of the AGS hybrid technology which has the potential to achieve capacity and compliance objectives without the requirement to convert all existing treatment tanks to the AGS process. This element of PPS2 will take up to a year to verify its capability.

The 400,000 p.e. Capacity Upgrade Design Build (DB) contract was signed at the end of 2017. Design is ongoing and the Contractor is mobilising at the end of January 2018. The Capacity Upgrade is to be completed & commissioned in Q1 2020.

Irish Water will be submitting a new Strategic Infrastructure Development (SID) application and accompanying Environmental Impact Assessment Report (EIAR) to An Bord Pleanála in Spring 2018. The application will seek permission to carry out works to facilitate the use of the AGS technology in the existing treatment tanks and to omit construction of the Long Sea Outfall Tunnel. Retrofitting the AGS technology to the existing treatment tanks is to commence in 2019 (subject to ABP consent).

1.2.4 North Docklands Sewerage Scheme

The Docklands Drainage Area Plan (DAP) produced in 2006 identified that there was a need to upgrade the existing water and drainage facilities in the North Docklands Area. The Docklands DAP identified that a new pumping station at Spencer Dock with rising mains to convey flows across to Ringsend Wastewater Treatment Works was the only viable solution to meet future drainage demand of new development in the north docklands area. The scheme was originally conceived as Serviced Land Initiative Scheme (SLI) rolling over into the WSIP 2007 - 2009. The remaining contracts still outstanding were extended into the DECLG WSIP 2010 – 2013. Following a series of design and scope changes the delivery strategy devised for the North Docklands

Sewerage Scheme (NDSS) (previously referred to as the Spencer Dock Sewerage Scheme) was to split the overall scheme into four contracts. The title of each element (listed hereunder) reflects the current position:

Contract 1 - Spencer Dock Pumping Station (SDPS) Remaining works titled NDSS Contract 4C – Completed and in operation
Contract 2 - Dublin Docklands Rising Mains Sewerage Scheme - Completed
Contract 3 - Liffey Services Installation Contract (LSIC) - Completed

Contract 4 - Network Upgrade -Split into two contracts - 4A: Completed and in operation
4B: All construction woks complete

SDZ North Docklands Ancillary Water Services Infrastructure (AWSI) Project: On going. This project is to allow new connections in the area. currently at scope finalisation/Tender over next 6 months.

When all Docklands Contracts are completed the necessary drainage infrastructure will be in place to adequately deal with the current and future sustainable development of the North Docklands Area. Furthermore, it will reduce CSO spills and flooding risk in the north docklands. The engineering solution has been designed to compliment drainage infrastructural requirements envisaged by the new Dublin City Council Strategic Development Zone (SDZ) Plan and CIE Master Development Plan.

1. **The Sherriff Street 1200 mm diameter Incoming Sewer**: Completed and fully in operation.

2. New Wapping Street Twin Rising Mains and Overflow Sewer to connect to contract 2. Completed and fully in operation.

3. Mayor Street Rising Main Rehabilitation works
Mayor Street sewer rehab works undergoing further route selection required – expected completion Q4 2018.

4. Final commissioning of Mechanical and Electrical Plant and handover of the pumping station. Complete and fully in operation.

Completion of Contract 4B was the last remaining element providing the necessary drainage infrastructure to facilitate new development and upgrade existing sewerage infrastructure to transfer flows to the pumping station from Sheriff Street Upper and Castleforbes Road. It involved 740 metres of combined gravity sewer using trenchless construction methods (433 metres of 1500mm diameter, and 307 metres of 1200mm diameter using micro tunnelling) including 7 drive and reception pits. The Contract included for substantial associated works and extensive accommodation works involving diversion of existing utilities at all shaft and open cut manhole locations. The Project transferred to Irish Water in January 2014. The contract was awarded in December 2016 and completed in December 2017 with minor snagging work scheduled for the following months.

SDZ North Docklands Ancillary Water Services Infrastructure (AWSI) Project

This Project will see the delivery of the remaining infrastructure requirements to service the SDZ including watermains, remaining subsidiary foul sewers and surface water sewers. The Preliminary Wastewater Report produced by the Consulting Engineers (appointed by Irish Water) has recently been updated to take account of current operating conditions in the network. Limited work is necessary on the drainage network (mainly

remediation & repair) but a lift pumping station is considered necessary to alleviate potential flooding, caused in large part by tide-locking of the network. Documents are being drafted by Irish Water for budget approval for the next stages and for the appointment of Consulting Engineers to carry out detailed design of the infrastructure identified in the Report. This project is at scope finalisation/Tender over next 6 months.

South Dublin County Council Functional Area

There are no Specified Improvement Programmes for the South Dublin County Council portion of the Ringsend agglomeration as detailed in Schedules A3 and C of the WWDL.

Table 4.2.1b - Specified Improvement Programme Summary

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule (A or C)	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works ((i) Not Started; (ii) At planning stage; (iii) Work ongoing on-site; (iv) Commissioning Phase; (v) Completed; (vi) Delayed)	% Construction Work Completed	Timeframe for Completing the Work	Comments
None							

The SDCC Improvement Programme is included in **Appendix 7.5**.

Table 4.2.2b - Improvement Programme Summary

Improvement Identifier	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date	Comments
None					

Fingal County Council Functional Area

The Improvement Programme is included in **Appendix 7.5**.

Table 4.2.1c - Specified Improvement Programme Summary

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule (A or C)	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works ((i) Not Started; (ii) At planning stage; (iii) Work ongoing on-site; (iv) Commissioning Phase; (v) Completed; (vi) Delayed)	% Construction Work Completed	Timeframe for Completing the Work	Comments
Discharge S4 Fingal to the Irish Sea to be discontinued Doldrum Bay	A	31/12/2011	Y	Proceeding to detailed design. Project plans to transfer existing flows *via* pumped and gravity mains to the Sutton Catchment via 2no. Pump Stations.	0%	End of Q1 2020	
Discharge to cease: S5 Fingal to the Irish Sea	A	27/10/2010	Y	Completed	100%		

There are no improvements identified under Condition 5.2.

Table 4.2.2 - Improvement Programme Summary

Improvement Identifier / Name	Improvement Description	Improvement Source	Progress (% complete)	Expected Completion Date	Comments
None					

Dún Laoghaire Rathdown County Council Functional Area

Table 4.2.1d - Specified Improvement Programme Summary

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule (A or C)	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works ((i) Not Started; (ii) At planning stage; (iii) Work ongoing on-site; (iv) Commissioning Phase; (v) Completed; (vi) Delayed)	% Construction Work Completed	Timeframe for Completing the Work	Comments
None							

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

Table 4.2.2d - Improvement Programme Summary

Improvement Identifier	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date	Comments
Dun Laoghaire Sewerage Scheme Phase 1	Contract 2e - Moreen Environs Foul Sewer Upgrade, Phase 4	Removal of deficiencies in capacity	0	Q4 2019	At design stage ongoing.
Dun Laoghaire Sewerage Scheme Phase 1	Contract 2 - Network Upgrade Sandyford/Still organ Improvement-Tunnel	Removal of deficiencies in capacity	0	Q4 2019	Tenders received. Assessment underway
Goatstown Rehab Project	Sewer Rehab	Increase in Capacity	0	Q2 2019	At design stage
Churchtown landscape Rd	Sewer Rehab	Increase in Capacity	0	Q1 2019	Tenders out Q3 2017
Condition 5.2	Sewer Integrity Tool Used	Sewer Integrity Tool (Condition 5.2).	100		Completed.
Condition 4 & 5.2	SWO assessment	SWO assessment (Condition 4 & 5.2).	100		Based on estimated spill numbers and local knowledge of Drainage Staff.

Meath County Council Functional Area

There are no specified improvement works listed in schedule A or C of the WWDL and therefore a specified improvement programme summary is not required.

Table 4.2.1e - Specified Improvement Programme Summary

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule (A or C)	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works ((i) Not Started; (ii) At planning stage; (iii) Work ongoing on-site; (iv) Commissioning Phase; (v) Completed; (vi) Delayed)	% Construction Work Completed	Timeframe for Completing the Work	Comments
None							

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

Table 4.2.2e - Improvement Programme Summary

Improvement Identifier	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date	Comment
(MCC) Install bigger sump drainage pumps	Install bigger sump drainage pumps a) at Ashbourne PS b) at Kilbride PS		a) 100% b) 100%		Completed
(MCC) Raise pumps electrical contractor control boxes out of the wet well sumps	Raise pumps electrical contractor control boxes out of the wet well sumps; a) at Ashbourne PS b) at Kilbride PS		a) 100% b) 100%	Completed 2017	Completed
(MCC) 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		a) 60% b) 100%	a) Unknown b) Unknown	Crack on walls and under the air vessel, in Deerpark Ashbourne PS, have not yet been sealed

4.3. Sewer Integrity Tool

Dublin City Council Functional Area

As reported last year, as part of the City Centre Sewerage Scheme, a modified Sewer Integrity Tool was developed and piloted. The pilot indicated the extreme complexity in applying the Sewer Integrity Tool to an agglomeration with more than 900 km of foul and combined sewer and that the full application of the Sewer Integrity Tool to each of the catchments within the agglomeration would require considerable time, funding and resources. There has been no further progress on this issue in 2017.

South Dublin County Council Functional Area

The sewer network in South Dublin portion of the Ringsend agglomeration is sub-divided and managed as two catchments within the agglomeration. These catchments are the Dodder Valley Sewer (DVS) and the 9B sewer.

The details of the Sewer Integrity Risk Assessment of the South Dublin Portion were included in Appendix 7.4b of 2014 AER and the following table summarises the outcome of that risk assessment as calculated by the EPA guidance document assessment tool.

Table 4.3b - Sewer Integrity Risk Assessment Tool Summary

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	**Risk Assessment Rating (High, Medium, Low)**	**Risk Assessment Score**	**Comment**
Hydraulic Risk Assessment Score	Medium	73	
Environmental Risk Assessment Score	Medium	385	
Structural Risk Assessment Score	High	130	
Operation & Maintenance Risk Assessment Score	Low	60	
Overall Risk Score for the agglomeration	High	648	

Fingal County Council Functional Area

Due to the nature of the agglomeration, two different Sewer Integrity Risk Assessment Tools have been completed. See Appendix 7.6 of the 2015 for Sewer Integrity Tool Output for the North Fringe Sewer Catchment and the 9C Catchment.

4.3(c1) North Fringe Sewer Catchment

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	**Risk Assessment Rating (High, Medium, Low)**	**Risk Assessment Score**	**Comment**
Hydraulic Risk Assessment Score	High	130	
Environmental Risk Assessment Score	Low	180	

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	Risk Assessment Rating (High, Medium, Low)	Risk Assessment Score	Comment
Structural Risk Assessment Score	High	150	
Operation & Maintenance Risk Assessment Score	Medium	112	
Overall Risk Score for the agglomeration	High	572	

4.3(c2) 9C Catchment

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	Risk Assessment Rating (High, Medium, Low)	Risk Assessment Score	Comment
Hydraulic Risk Assessment Score	Medium	57	
Environmental Risk Assessment Score	Low	50	
Structural Risk Assessment Score	Medium	65.292	
Operation & Maintenance Risk Assessment Score	Medium	88	
Overall Risk Score for the agglomeration	Low	260.292	

Dún Laoghaire Rathdown County Council Functional Area

The details of the Sewer Integrity Risk Assessment of the West Pier East Catchment were included in Appendix 7.4 of 2014 AER. The following table summarises the outcome of that risk assessment.

Table 4.3d - Sewer Integrity Risk Assessment Tool Summary

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	Risk Assessment Rating (High, Medium, Low)	Risk Assessment Score	Comment
Hydraulic Risk Assessment Score	Medium Risk	67	
Environmental Risk Assessment Score	Low Risk	158	
Structural Risk Assessment Score	High Risk	140	High score here because the condition of the network is not known. So high risk assumed.
Operation & Maintenance Risk Assessment Score	Low Risk	74	
Overall Risk Score for the agglomeration	Low Risk	439	

Meath County Council Functional Area

The details of the Sewer Integrity Risk Assessment of the Meath functional area were included in Appendix 6.2 of 2014 AER. The following table summarises the outcome of that risk assessment.

Table 4.3e - Sewer Integrity Risk Assessment Tool Summary

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	**Risk Assessment Rating (High, Medium, Low)**	**Risk Assessment Score**	**Comment**
Hydraulic Risk Assessment Score	High	150	
Environmental Risk Assessment Score	Low	138	
Structural Risk Assessment Score	High	135	
Operation & Maintenance Risk Assessment Score	High	158	
Overall Risk Score for the agglomeration	High	581	

As reported last year, as part of the City Centre Sewerage Scheme, a modified Sewer Integrity Tool was developed and piloted. The pilot indicated the extreme complexity in applying the Sewer Integrity Tool to an agglomeration with more than 900 km of foul and combined sewer and that the full application of the Sewer Integrity Tool to each of the catchments within the agglomeration would require considerable time, funding and resources. There has been no further progress on this issue in 2017.

5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required in AER or outstanding from previous AER	Report Included in AER	Reference to relevant section of AER
Priority Substances Assessment	Yes	Yes	Summary of finding in **Table 5.1**. Full report in **Appendix 7.6**.
Drinking Water Abstraction Point Risk Assessment	No	No	N/A
Habitats Impact Assessment	No	No	N/A
Shellfish Impact Assessment	No	No	N/A
Pearl Mussel Report	No	No	N/A
Toxicity/Leachate Management	Yes	Yes	Summary of findings in **Table 5.2**. Full report in **Appendix 7.7**.
Toxicity of Final Effluent Report	Yes	Yes	Summary of findings in **Table 5.3**. Full report in **Appendix 7.8**
Small Streams Risk Score	No	No	N/A

Licence Specific Reports Summary of Findings

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report
Priority Substances Assessment	Yes	On-going review of licenced discharges to sewers in the catchment of Ringsend WWTP. Priority substances detected in effluent should have no negative impacts outside the near field of the discharge due to dilution.
Drinking Water Abstraction Point Risk Assessment	N/A	
Habitats Impact Assessment	N/A	
Shellfish Impact Assessment	N/A	
Pearl Mussel Report	N/A	
Toxicity/Leachate Management	No	Annual leachate volume at Ringsend is not significant at **149,806** cubic metres. This constitutes **411** cubic metres per day (**0.102 % v/v**) based on the 2017 mean daily influent volume of **404,015** cubic metres.
Toxicity of Final Effluent Report	No	The toxicity of the Final Effluent complied well with the ELV for all species tested.
Small Streams Risk Score	N/A	Effluent Discharge to Liffey Estuary.

5.1. Priority Substances Assessment

The Priority Substances Assessment report is included in **Appendix 7.6**. A summary of the findings of this report is included below.

Table 5.1 - Priority Substance Assessment Summary

	Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.
Does the assessment use the Desk Top Study Method or Screening Analysis to determine if the discharge contains the parameters in Appendix 1 of the EPA guidance	Desk Top Study *and* Screening Analysis
Does the assessment include a review of Trade inputs to the works?	Yes
Does the assessment include a review of other inputs to the works?	Yes
Does the report include an assessment of the significance of the results where a listed material is present in the discharge? (e.g. impact on the relevant EQS standard for the receiving water)	Yes
Does the assessment identify that priority substances may be impacting the receiving water?	No – only in the near field of the discharge.
Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?	Yes – reduction of all priority pollutants in licensed trade effluent discharges in the agglomeration.

5.2. Toxicity/Leachate Management

The Toxicity / Leachate Management Assessment report is included in **Appendix 7.7**. A summary of the findings of this report is included below.

Table 5.2 - Toxicity / Leachate Management Report Summary

Is a Toxicity / Leachate Management Report required in the AER (or outstanding from previous AER)	Yes
What % of the total influent for the year is leachate?	0.102 % of annual load (volume)
Does leachate addition exceed 4% ((volume) of the influent load at any time?	No
Maximum leachate loading rate (based on 100 cubic metres)	0.15% of daily load (volume)
Does the leachate study identify any constituents of the material that present an environmental risk?	No
List leachate constituent identified and impact (*insert a row for each constituent)*	N/A
Has the WWTP suitability to treat the leachate been assessed?	No
What are the results of the assessment	N/A
Has the study identified the max and operational loadings (mass, volume and rate of addition) for leachate to the WWTP?	N/A
Is there a monitoring programme for the priority substances identified above?	Yes
Have trigger and action levels for the concentration of identified leachate constituents been established to prevent impact on the receiving water?	Yes
Does the Improvement Programme for the agglomeration include any procedural and/or infrastructural works to reduce the impacts of leachate acceptance on the operation of the WWTP?	No

5.3. Toxicity of the Final Effluent Assessment Summary

The Toxicity / Leachate Management Assessment report is included in **Appendix 7.8**. A summary of the findings of this report is included below.

Table 5.3 - Toxicity of the Final Effluent Assessment Summary

Is a Toxicity report required? (Condition 4)	Yes
Has the study been carried out against 4 species in 3 trophic levels?	No (2 species) Fish toxicity carried out and reported in 2015.
Does the report identify that the discharge is toxic to any of the species in the study?	No
List species impacted	N/A
Does the Improvement Programme for the agglomeration include any procedural and/or infrastructural works to reduce the toxicity of the final discharge?	No

Toxicity test results show effluent aquatic toxicity complies well with the licence limit of 5 TU.

6. Certification and Sign Off

Table 6.1 - Summary of AER Contents

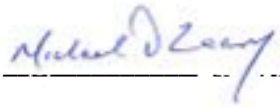
Does the AER include an executive summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for consideration of a technical amendment / review of the licence?	Yes
List reason e.g. additional SWO identified *(insert lines as required)* *Irish Water will be seeking a review of the license in relation to the proposed upgrade of treatment works and network*	
Is there a need to request/advise the EPA of any modifications to the existing WWDL? Refer to Condition 1.7 (changes to works/discharges) & Condition 4 (changes to monitoring location, frequency etc.)	Yes
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements *(insert lines as required):* *Upgrade in capacity of waste water treatment works* *Changes to ambient monitoring requirements*	
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request):	Yes
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	Yes

Declaration by Irish Water

The AER contains the following;

- Introduction and background to 2017 AER
- Monitoring reports summary.
- Operational reports summary.
- Infrastructural Assessment and Programme of Improvements.
- Licence specific reports.
- Certification and Sign Off
- Appendices

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

Signed:  Date: 06/03/2018

Michael O'Leary
Acting Head of Environmental Regulation

7. Appendices

Appendix 7.1 - Annual Statements of Measures
Appendix 7.2 - Ambient Monitoring Summary
Appendix 7.3 - PRTR Summary Sheets
Appendix 7.4 - Storm Water Overflow Assessment
Appendix 7.5 - Specified Improvement Programme
Appendix 7.6 - Priority Substances Assessment
Appendix 7.7 - Toxicity Leachate Management Report
Appendix 7.8 - Final Effluent Toxicity Assessment

Appendix 7.1

Annual Statement of Measures

Dublin City Council Functional Area

The potential sources of environmental damage are discharges from the surface water overflows and the emergency overflows from the pump stations in the network. Pump stations are visited every day by Drainage Inspectors who are also notified by text message when an emergency overflow is activated and respond as a soon as is practicable to remove the cause of the overflow.

Additional measures have been taken in 2017 in relation to prevention of environmental damage summarized in the table below. The need for measures to prevent environmental damage is reviewed on an annual basis.

Statement of Measures					
Risk Score	**Mitigation measure to be taken**	**Outcome**	**Action**	**Date for completion**	**Owner/Contact Person**
12	Measure the most common contaminant - hydrocarbons on-line	Early warning given of hydrocarbons present in incoming sewage, preventing major contaminant reaching secondary treatment.	Hydrocarbons monitor to be installed in common inlet channel/screen house.	May 2018	Plant Operator (CAW) Plant OM Manager
12	Upgrade of on site communications network	No communication issues.	Upgrade of on site communications network as a part of the plant extension project.	As per project programme	Irish Water
12	Increased plant capacity and process resilience against severe weather - mainly low temperature and heavy wind conditions	Treatment Process resistant to severe weather impact - low temperature and heavy winds.	Plant's secondary treatment extension, covers or wind deflectors to be installed on current secondary treatment tanks (SBR's). This is being reconsidered in light of the AGS installation and PPS2 results	Increase Plant Capacity to complete as per project programme Wind deflectors/ covers under review as AGS process less susceptible to wind	Irish Water
16	Biological nutrient removal to take place at WwTW.	No eutrophication of sensitive water bodies.	Long Sea Outfall Tunnel to be designed, constructed and commissioned.	Under review - New Capacity Upgrade to include nutrient removal (as per project programme), also plans to retrofit existing SBR's to remove nutrients and eliminate need for LSOT are being developed.	Irish Water
4	Product not to be transported in trailers even with a minor cover damage.	No spillages on site or during transport.	All trailers in use to be re-checked before filled, staff training.	Training programme in place	Plant Operator (CAW) Plant OM Manager

Statement of Measures					
Risk Score	**Mitigation measure to be taken**	**Outcome**	**Action**	**Date for completion**	**Owner/Contact Person**
4	Biocake loading bay to be enclosed, product not to be transported in trailers even with a minor cover damage	No spillages on site or during transport.	Biocake loading bay to be designed and constructed, all trailers in use to be re-checked before filled, staff training.	July 2018	Plant Operator (CAW) Plant OM Manager/Irish water

South Dublin County Council Functional Area

The general nature of measures identified include:

- Preventative maintenance at local pumping stations which support reduced adverse WWTP impact and failure
- Enhanced local pumping station capacity complemented by reduced number of system chokes which will contribute to minimization of effluent spills by a range of measures which include replacement of key pumps by chopper type pumps to cope with the variety of material arriving at pumping station facilities
- Regular inspection of storage tanks will identify potential risk of leakage from same.

Fingal County Council Functional Area

Mitigation measure to be taken	Date for completion
Regular sump cleaning.	On going
Routine maintenance, provision and monitoring of telemetry system, ongoing staff training.	On going
Pump station improvements ongoing - electrical panel reviews, control panel upgrades, chain replacements, alarm review.	Ongoing

Dún Laoghaire Rathdown County Council Functional Area

The potential sources of environmental damage are discharges from the surface water overflows and the emergency overflows from the pump stations in the network. Pump stations are visited every day by Drainage inspectors who are also notified by text message when an emergency overflow is activated and respond as a soon as is practicable to remove the cause of the overflow.

No additional measures have been taken in 2017 in relation to prevention of environmental damage. The need for measures to prevent environmental damage is reviewed on an annual basis.

Meath County Council Functional Area

In 2017 electrical contractor control boxes were raised out of the wet well sumps in Ashbourne PS and Kilbride PS. Leaking cable ducts were sealed in Kilbride PS. Sealing of leaking cable ducts is currently 60% complete at Ashbourne PS. There is a crack on the wall and under the air vessel yet to be sealed. Surface water flowing into site was also found to come through the site gate and the drains around the perimeter of Ashbourne PS were blocked causing the site to flood. These have now been jetted clear.

No additional measures have been taken in 2017 in relation to prevention of environmental damage. The need for measures to prevent environmental damage is reviewed on an annual basis.

Appendix 7.2

Ambient Monitoring Summary

Figure 7.2.1 Dublin Ambient Sampling Points Map

2017

Appendix 7.2.2 Transitional Water Body Monitoring 2017

Report for Samples Taken During the Period: 01/04/2017 - 31/10/2017

Customer DCC	Test List	Sampling Point	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	Temperature °C	TON µg/l as N
			Surface Water Objectives for Transitional Water Bodies - SI 272 of 2009				< 4.0 mg/l 95%-ile			0% PSU 70% - 130% 35% PSU 80% - 120%		0 -17% PSU < 60 ug/l P (median) 35% PSU < 40 ug/l P (median)				
			Compliant													
			Non-Compliant													
EPA Code																
ASW 2S	123_ESTUAR	130842	(130842) Liffey Estuary Lower, 25m North of Poolbeg Wall - Surface Sample	04/05/2017 11:32	1284194	1296	2	3.2	2086	96	3.5	407	28.98	939	12.7	790
				24/05/2017 11:21	1293230	496	4	0.9	1696	101	1.3	554	24.75	11620	16.85	1200
				07/06/2017 07:40	1298569	506	1	0.8	803	93	0.6	196	28.79	1025	13.93	297
				20/07/2017 09:18	1316807	366	2	2.4	629	100	2.8	160	30.73	543	17.46	263
				16/08/2017 09:23	1327823	86	<1	1.5	147	100	2.9	46	32.36	483	16.36	61
				20/09/2017 09:22	1342193	170	<1	2.8	289	92	2	55	32.42	487	14.82	119
												178				
ASW 2D		130843	(130843) Liffey Estuary Lower, 25m North of Poolbeg Wall - Depth Sample	04/05/2017 11:34	1284195	1224	2	2.5	2014	94	5.5	454	28.93	681	12.75	790
				24/05/2017 11:23	1293231	161	1	1.7	516	104	1.1	166	33.6	694	12.36	355
				07/06/2017 07:45	1298570	319	1	1.6	530	95	0.7	127	32.62	710	13.15	211
				20/07/2017 09:20	1316808	239	1	1.7	379	98	2.9	107	33.57	319	16.37	140
				16/08/2017 09:26	1327824	54	<1	1.9	98	100	1.9	35	32.69	420	15.95	44
				20/09/2017 09:25	1342194	92	<1	1.6	154	98	2.7	39	33.51	315	14.51	62
												117				
ASW 3S		130844	(130844) Liffey Estuary Lower, 50m North of Poolbeg Wall - Surface Sample	04/05/2017 11:48	1284196	1560	3	4.9	2399	96	1.3	467	28.55	845	12.74	839
				24/05/2017 11:07	1293239	499	1	1.7	807	103	0.8	144	31.03	605	14.4	308
				07/06/2017 07:51	1298571	449	<1	1.1	692	98	0.7	175	30.02	840	13.68	243
				20/07/2017 09:57	1316809	1967	3	2.1	3239	99	1.1	607	24.22	1899	17.67	1272
				16/08/2017 10:10	1327826	119	<1	1.9	213	98	3.2	47	31.5	591	15.98	94
				20/09/2017 10:04	1342195	1418	2	1.1	2130	97	2.1	596	26.27	1755	15.55	712
												321				
ASW 3D		130845	(130845) Liffey Estuary Lower, 50m North of Poolbeg Wall - Depth Sample	04/05/2017 11:51	1284197	1039	3	4.8	1675	77	3.5	378	31	602	12.42	636
				24/05/2017 11:06	1293240	162	<1	3	254	102	1.2	53	33.61	197	12.31	92
				07/06/2017 07:55	1298572	140	<1	0.7	220	99	0.8	50	33.79	283	12.74	80
				20/07/2017 10:02	1316810	65	<1	1.8	65	102	1.4	34	33.8	125	15.67	<40
				16/08/2017 10:12	1327827	67	<1	1.3	67	99	5.3	36	33.16	431	15.89	<40
				20/09/2017 10:06	1342196	138	<1	2.1	234	98	1.5	70	33.73	388	14.38	96
												52				

ASW 4S	130846 (130846) Liffey Estuary Lower, 75m North of Poolbeg Wall - Surface Sample	04/05/2017 12:01	1284198	196		1	3.9	607	101	3	176	30.9	257	12.4	411
		24/05/2017 10:52	1293241	265	<1		1.7	419	104	1	84	32.33	324	13.41	154
		07/06/2017 08:25	1298573	349	<1		0.9	541	99	0.5	136	31.26	621	13.27	192
		20/07/2017 09:06	1316811	98		1	1.5	171	101	2.5	50	32.64	208	16.77	73
		16/08/2017 08:46	1327828	695		1	2	1075	101	1.2	260	28.46	1584	16.95	380
		20/09/2017 12:12	1342197	466	<1		2	704	99	1.4	209	30.98	788	15.26	238
											156				
ASW 4D	130847 (130847) Liffey Estuary Lower, 75m North of Poolbeg Wall - Depth Sample	04/05/2017 12:00	1284199	21		1	3.6	283	99	6.6	92	32.25	29	12.05	262
		24/05/2017 10:54	1293242	44	<1		1.8	44	106	1.1	26	33.61	70	12.42	<40	
		07/06/2017 08:27	1298574	142	<1		0.9	221	100	0.7	50	33.24	261	12.88	79
		20/07/2017 09:07	1316812	27	<1		1.6	27	102	1.3	18	33.84	92	15.66	<40	
		16/08/2017 08:48	1327829	69	<1		1.2	69	100	2.3	34	33.71	402	15.6	<40	
		20/09/2017 12:14	1342198	107	<1		2.3	189	98	1.5	58	33.76	379	14.33	82
											42				
ASW 5S	130848 (130848) Liffey Estuary Lower, 100m North of Poolbeg Wall - Surface Sample	04/05/2017 12:00	1284200	49	<1		0.9	232	101	3.3	92	32.57	168	11.81	183
		24/05/2017 10:35	1293243	208	<1		1.3	376	104	1.1	74	31.83	363	14.34	168
		07/06/2017 08:06	1298575	223	<1		3.1	406	98	<0.1	90	31.14	581	13.31	183
		20/07/2017 08:52	1316813	100		1	2.1	176	101	1.3	48	32.49	229	16.29	76
		16/08/2017 08:30	1327830	74	<1		1.5	150	101	2.4	29	32.13	497	15.97	76
		20/09/2017 10:17	1342199	120	<1		2	207	98	0.8	59	33.08	383	14.56	87
											67				
ASW 5D	130849 (130849) Liffey Estuary Lower, 100m North of Poolbeg Wall - Depth Sample	04/05/2017 12:12	1284201	93	<1		2	296	102	3.7	92	32.6	153	11.9	203
		24/05/2017 10:39	1293244	80	<1		2.3	150	105	1.5	37	33.58	142	12.45	70
		07/06/2017 08:08	1298576	154	<1		1.1	259	99	0.7	53	33.43	337	12.83	105
		20/07/2017 08:55	1316814	62	<1		1.9	103	102	1.7	35	33.69	148	15.78	41
		16/08/2017 08:35	1327831	49	<1		1.9	98	98	2.1	30	32.93	431	16.05	49
		20/09/2017 10:27	1342200	47	<1		2.1	98	98	1.3	36	33.76	313	14.34	51
											37				
ASW 6S	40063 (40063) Liffey City D/S Islandbdg Weir	04/05/2017 09:00	1284147	<5		1	4.9	2613	96	3.9	<5	0.1	1742	12.7	2613
		24/05/2017 08:45	1293015	19		1	2.3	1996	95	2.6	34	0	2874	11.7	1977
		07/06/2017 13:30	1298671	26	<1		5.2	1924	103	4.4	46	0	4326	14.9	1898
		20/07/2017 10:00	1316841	93		1	0.7	2851	90	3.9	34	0	2334	18.3	2758
		16/08/2017 05:45	1327341	59		1	2.2	1281	91	3.2	58	0	3909	15.9	1222
		20/09/2017 11:15	1342208	31	<1		2.9	3326	102	1.2	40	0.1	4985	14.9	3295
											37				
ASW 7S	40067 (40067) Liffey City Heuston Stn u/s Camac	04/05/2017 09:30	1284148	<5	<1		2.7	2446	95	2.2	<5	0.1	1835	12.5	2446
		24/05/2017 08:55	1293016	25		1	1.5	1886	90	3.1	46	3.9	2969	16	1861
		07/06/2017 13:45	1298672	42	<1		3.2	1724	102	2.2	47	1.7	4058	14.6	1682
		20/07/2017 10:50	1316842	153		2	7.3	1214	95	10	72	0.6	3516	16.6	1061
		16/08/2017 06:00	1327342	60		1	2.8	1300	88	3.8	57	0.1	4142	16.1	1240
		20/09/2017 11:25	1342209	57	<1		1.3	1801	99	2.7	50	1.1	5338	14.8	1744
											49				

ASW 8S	40072	(40072) Liffey City Winetav St Bridge	04/05/2017 09:40	1284149	<5	4	2.5	2140	94	25	<5	2.5	2019	12.5	2140
			24/05/2017 09:10	1293017	61	2	11.3	759	94	5.4	70	8	1377	15	698
			07/06/2017 13:55	1298673	64	1	2.2	1567	101	2.9	53	6.6	3885	14.8	1503
			20/07/2017 11:10	1316843	708	3	3.2	2239	89	6.1	267	10.2	1991	17.6	1531
			16/08/2017 06:20	1327343	75	1	2.7	1302	86	3.4	57	1.1	3837	16.1	1227
			20/09/2017 11:35	1342210	82	<1	0.9	1619	96	1.2	52	8.7	3957	14.9	1537
											55				
ASW 9S	40457	(40457) Liffey (S) D/S Toll Bridge	04/05/2017 10:00	1284150	<5	1	2.1	1861	103	1.9	<5	9.2	1602	12.1	1861
			24/05/2017 09:30	1293018	48	<1	1.1	1142	93	1.5	58	20.9	1898	15.1	1094
			07/06/2017 14:05	1298674	79	<1	1.3	1302	101	1.3	50	10.9	3029	15.2	1223
			20/07/2017 11:30	1316844	300	2	3.7	771	94	1.4	49	19.6	2384	17.2	471
			16/08/2017 06:35	1327344	13	<1	2.8	1039	86	3.1	10	5	3756	15.2	1026
			20/09/2017 11:55	1342211	125	<1	2.1	823	98	1.4	51	20.5	2508	14.8	698
											50				
ASW 10S	45082	(45082) Tolka River D/S Annesley Bridge	04/05/2017 10:10	1284151	<5	1	4.9	1841	113	5	<5	0	1319	11.8	1841
			24/05/2017 10:10	1293019	99	1	3	1489	88	8.3	113	1.4	5931	15.7	1390
			07/06/2017 14:35	1298675	50	1	3.1	1635	134	4.4	96	0.2	7655	14.9	1585
			20/07/2017 12:20	1316845	487	3	14.1	2354	105	8.9	166	4.4	5266	16.4	1867
			16/08/2017 07:15	1327345	99	2	2.1	1320	83	3.4	62	0.1	7708	14.8	1221
			20/09/2017 12:35	1342212	51	1	3.1	1540	102	4.2	75	0.7	5738	14.4	1489
											86				

2017

Appendix 7.2.3 Transitional Water Body Monitoring : Points Agreed by the EPA DB-020 to DB-420

Report for Samples Taken During the Period: 01/04/2017 - 31/10/2017

Customer	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 Temper °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
DCC			Surface Water Objectives for Transitional Water Bodies - SI 272 of 2009				< 4.0 mg/l					0% PSU			0 -17% PSU						
			Compliant				95%-ile					70% - 130%			< 60 ug/l P (median)						
			Non-Compliant									25% PSU			25% PSU						
EPA Code												80% - 120%			< 40 ug/l P (median)						
DB 020	123_ESTUAR		130870 (130870) Liffey Estuary Upper, Liffey at Matt Talbot Bridge - Surface Sample	04/05/2017 09:21	1284202	26	1			3.1	2392	94		2.1	23	2.09		1901		12.74	2364
				24/05/2017 08:20	1293245	52	1			0.9	731	90		4	64	23.2		2446		14.14	658
				07/06/2017 10:50	1298577	73	1			1.3	1491	98		1.7	52	6.74		3708		14.61	1420
				20/07/2017 10:58	1316815	76	1			2.8	1171	94		3	48	14.61		2088		17.3	1103
				16/08/2017 11:23	1327832	80	<1			1.9	962	89		2.3	56	9.43		3052		16.22	877
				20/09/2017 08:39	1342201	79	<1			1.2	1376	87		1.4	52	12.81		3344		14.09	1297
															52						
			130871 (130871) Liffey Estuary Upper, Liffey at Matt Talbot Bridge - Depth Sample	04/05/2017 09:24	1284203	194	2			13.5	1766	71		12.8	75	31.12		1196		11.1	1566
				24/05/2017 08:33	1293246	115	1			5.3	539	79		5	80	32.43		921		12.79	424
				07/06/2017 10:51	1298578	62	<1			1.9	503	93		1	46	32.76		1201		13.67	443
				20/07/2017 11:01	1316816	115	2			12.2	260	91		3.9	37	32.71		228		16.64	145
				16/08/2017 11:27	1327833	96	1			2.3	705	78		3.5	52	32.04		2671		16.28	612
				20/09/2017 08:42	1342202	126	<1			1.9	685	86		1.3	53	32.31		1518		14.45	556
															53						
DB 120			130800 (130800) Liffey Estuary Lower, Dodder Grand Canal Basin- Surface Sample	04/05/2017 09:41	1284184	<5	1			0.8	1566	96		2.6	<5	4.97		1624		11.53	1566
				24/05/2017 07:55	1293221	71	1			4.7	679	88		2.4	55	20.08		1489		14.33	599
				07/06/2017 10:25	1298560	90	<1			1.3	609	92		1.7	56	19.08		2138		14.57	519
				20/07/2017 11:15	1316797	103	2			6.7	362	97		4.1	45	24.74		1361		17.18	259
				16/08/2017 11:06	1327814	116	1			2.9	1755	88		4	89	9.37		4873		15.66	1645
				20/09/2017 08:24	1342184	121	<1			1.3	1056	85		1.7	56	13.51		3875		13.93	935
															53						
			130801 (130801) Liffey Estuary Lower, Dodder Grand Canal Basin- Depth Sample	04/05/2017 09:41	1284185	<5	1			6.7	1047	96		4.4	27	13.18		1227		12.14	1047
				24/05/2017 07:58	1293222	76	<1			4.9	505	88		3	48	31.63		1638		13.1	429
				07/06/2017 10:37	1298561	100	<1			2.2	364	97		<0.1	42	32.51		1066		13.63	264
				20/07/2017 11:18	1316798	131	3			6.6	344	118		22.5	43	32.34		1027		17.24	213
				16/08/2017 11:12	1327815	112	1			3.7	787	82		3.4	48	11.49		4844		15.71	675
				20/09/2017 08:26	1342185	114	<1			1.9	842	89		1.6	56	22.79		2652		14.29	728
															45						
DB 210			130810 (130810) Liffey Estuary Lower, East Link Toll Bridge - Surface Sample	04/05/2017 09:55	1284186	<5	<1			0.8	1731	103		1.5	<5	7.49		1604		11.83	1716
				24/05/2017 07:35	1293223	73	2			0.8	1129	93		1.8	68	28.5		1785		13.3	1053
				07/06/2017 10:22	1298562	93	<1			<0.1	805	97		3.1	48	19.3		2295		14.46	707
				20/07/2017 11:26	1316799	70	1			2	411	103		4.9	34	22.8		1957		17.16	341
				16/08/2017 10:47	1327816	110	1			2	780	92		2.9	50	8.04		3048		16.27	670
				20/09/2017 08:05	1342186	124	1			0.8	971	88		1.3	55	18.19		2653		14.06	847
															48						
			130811 (130811) Liffey Estuary Lower, East Link Toll Bridge - Depth Sample	04/05/2017 09:56	1284187	<5	<1			4.4	1119	96		2.9	41	31.48		933		11.17	1119
				24/05/2017 07:33	1293224	76	<1			2.7	409	96		2.3	44	33.17		648		12.93	335
				07/06/2017 10:23	1298563	94	<1			1.5	255	98		0.9	35	33.03		526		13.33	161
				20/07/2017 11:32	1316800	87	<1			2.8	164	96		3.6	38	33.3		285		16.95	77
				16/08/2017 10:54	1327817	108	<1			2.2	1060	88		1.6	57	32.76		664		16.06	958
				20/09/2017 08:12	1342187	108	<1			1.2	479	96		0.8	46	32.97		1148		14.58	368
															43						

DB 220		130820 (130820) Liffey Estuary Lower, RO RO Ramp No. 5 (Old TW Outfall) - Surface Sample	04/05/2017 10:36	1284188	99	2			3.1	527	112		3	99	30.56		426		17.86	428
			24/05/2017 09:10	1293225	63	<1			2.1	177	105		1.1	38	32.16		286		15.48	114
			07/06/2017 10:01	1298564	71	1			0.9	442	100		0.8	41	27.16		1167		14.61	371
			20/07/2017 10:27	1316801	81	1			2.8	357	104		2.1	44	28.95		522		17.26	276
			16/08/2017 10:26	1327818	114	<1			2.4	303	101		1.1	45	31.96		862		18.35	189
			20/09/2017 09:00	1342188	79	<1			1.7	240	98		0.8	44	31.38		626		16.07	161
														44						
		130821 (130821) Liffey Estuary Lower, RO RO Ramp No. 5 (Old TW Outfall) - Depth Sample	04/05/2017 10:35	1284189	<5	<1			1.1	371	100		8.6	62	31.36		175		11.84	371
			24/05/2017 09:14	1293226	38	<1			2.8	38	103		1.5	28	33.59		108		12.53	<40
			07/06/2017 10:02	1298565	71	<1			1.3	256	100		0.5	35	33.04		577		13.12	185
			20/07/2017 10:30	1316802	66	<1			2	149	101		1.6	34	33.49		219		16.15	83
			16/08/2017 10:30	1327819	92	<1			2.1	182	100		1.3	39	33.16		545		15.85	90
			20/09/2017 09:07	1342189	138	<1			1.1	273	97		1.3	60	32.13		544		14.77	135
														37						
DB 410		130830 (130830) Liffey Estuary Lower, Ringsend Cascade - Surface Sample	04/05/2017 11:21	1284190	349	2			4.8	838	103		2.3	246	30.2		353		12.4	489
			24/05/2017 11:32	1293227	1470	2			1.5	2059	102		1	288	28.88		1220		15.35	589
			07/06/2017 08:55	1298566	721	2			0.5	1132	100		1.1	332	28.57		1231		14.31	437
			20/07/2017 10:13	1316803	448	2			0.9	830	102		3.1	174	30.18		664		17.59	382
			16/08/2017 09:01	1327820	650	2			1.9	1040	100		1.8	274	28.83		1520		16.78	390
			20/09/2017 11:47	1342190	1681	3			1.7	2469	98		1.2	673	25.07		1983		15.76	788
														281						
		130831 (130831) Liffey Estuary Lower, Ringsend Cascade - Depth Sample	04/05/2017 11:22	1284191	119	1			4.7	471	91		3	114	31.14		300		12.35	352
			24/05/2017 11:34	1293228	182	<1			3.1	281	104		0.9	54	33.62		208		12.3	99
			07/06/2017 08:57	1298567	89	<1			0.9	143	101		0.7	34	33.78		182		12.74	54
			20/07/2017 10:14	1316804	85	<1			1.2	85	102		4.1	36	33.79		141		15.67	<40
			16/08/2017 09:02	1327821	58	<1			1.1	98	100		2.6	34	33.73		387		15.6	40
			20/09/2017 12:03	1342191	145	<1			1.9	244	98		1.9	76	33.76		399		14.35	99
														45						
DB 420		130840 (130840) Liffey Estuary Lower, Poolbeg Lighthouse - Surface Sample	04/05/2017 10:59	1284192	126	1			3.1	385	99		4.1	125	32.13		263		11.98	259
			20/07/2017 09:32	1316805	147	<1			2	229	98		1.2	72	32.98		220		16.05	82
														99						
		130841 (130841) Liffey Estuary Lower, Poolbeg Lighthouse - Depth Sample	04/05/2017 11:01	1284193	<5	<1			3.7	< 15	105		7.2	9	33.39		45		11.65	<10
			20/07/2017 09:36	1316806	21	<1			1.2	21	103		2	16	33.88		104		15.62	<40
														13						
DB 420	123A_ESTUA	130839 (130839) Liffey Estuary Lower, Poolbeg Lighthouse - Composite Sample	24/05/2017 10:00	1293229	24	<1	107.9	12.2	2.9	24		106	0.6	25		33.66	73	12.7		<40
			07/06/2017 09:00	1298568	46	<1	102.8	12.7	0.8	46		100.2	0.4	12		33.9	70	12.7		<40
			16/08/2017 09:49	1327822	14	<1	103.9	15.9	1.7	14		104.6	1.1	14		33.57	245	15.8		<40
			20/09/2017 09:38	1342192	25	<1	97.3	14.3	2.1	69		98.1	0.9	25		33.76	292	14.4		44
														20						

DB 300	123_ESTUAR	45076 (45076) Tolka River U/S Drumcondra Bridge	04/05/2017 10:20	1284152	<5	1			5	1856	113		9.5	<5	0.1		1339		12	1856
			24/05/2017 10:30	1293020	114	2			5.7	1657	97		13.6	88	0.2		5775		15.3	1543
			07/06/2017 14:45	1298676	58	1			<0.1	1591	108		<0.1	99	0.1		7385		14.4	1533
			20/07/2017 12:30	1316846	199	3			4.3	1889	102		8.7	82	0		5561		16.2	1690
			16/08/2017 07:40	1327346	76	1			1.7	1932	93		2.9	85	0.1		9931		15	1856
			20/09/2017 12:45	1342213	28	<1			3.9	1487	108		3	74	0.1		6694		14.9	1459
														84						
DB 320		130900 (130900) Tolka Estuary at East Point Business Park Bridge - Surface Sample	04/05/2017 10:30	1284153	<5	3			35.6	1251	94		67.8	50	9.9		836		12.1	1251
			24/05/2017 09:45	1293021	400	2			6	1284	85		5.7	126	17.9		3667		15.5	884
			07/06/2017 14:15	1298677	75	<1			2.7	933	122		2.1	84	19.4		3975		14.5	858
			20/07/2017 12:10	1316847	796	69			6.1	2103	85		5	214	15.3		3672		16.8	1307
			16/08/2017 07:00	1327347	73	1			3.4	1861	80		5.3	85	2.8		9068		14.7	1788
			20/09/2017 12:25	1342214	378	4			1.2	1359	92		3.3	119	14.2		3837		15.5	981
														102						
		130901 (130901) Tolka Estuary at East Point Business Park Bridge - Depth Sample	04/05/2017 10:40	1284154	<5	3			36.7	1311	90		76.8	23	9.9		1851		12.1	1311
			24/05/2017 09:55	1293022	422	2			8	1365	91		6.5	105	18.2		3708		15.7	943
			07/06/2017 14:25	1298678	64	2			8	862	122		5.9	87	19.6		3781		15.2	800
			20/07/2017 12:00	1316848	594	2			6.5	1741	91		5.7	193	16.7		3506		16.8	1147
			16/08/2017 06:50	1327348	121	2			3.9	1756	80		4.4	92	1.6		7350		14.6	1635
			20/09/2017 12:10	1342215	293	1			<0.1	833	92		26.5	123	23.8		1906		15.1	540
														99						
DB 330		130910 (130910) Tolka Estuary, Castle Ave. - Surface Sample	24/05/2017 10:18	1293247	165	<1			1.9	403	96		0.9	87	30.64		509		14.58	238
			07/06/2017 09:26	1298579	95	<1			0.4	300	98		2	45	30.76		592		13.64	205
			20/07/2017 08:31	1316817	367	2			2.1	828	89		6	181	26.64		1395		15.97	461
			16/08/2017 08:09	1327834	147	1			2.7	317	90		1.7	70	29.51		904		16.07	170
			20/09/2017 11:22	1342203	264	<1			2	455	95		2.6	112	31.51		656		15.03	191
														87						
		130911 (130911) Tolka Estuary, Castle Ave. - Depth Sample	24/05/2017 10:21	1293248	136	1			2.3	335	98		1.5	79	31.7		437		14.02	199
			07/06/2017 09:28	1298580	90	<1			0.9	268	99		0.9	43	31.81		508		13.54	178
			20/07/2017 08:33	1316818	188	1			3.6	374	96		3.8	106	32.09		428		16.9	186
			16/08/2017 08:13	1327835	143	1			2.3	295	85		3.7	70	30.63		847		16.28	152
			20/09/2017 11:26	1342204	215	<1			2.4	386	95		1.1	98	32.27		597		14.78	171
														79						
		130912 (130912) Tolka Estuary, Castle Ave. - Composite Sample	04/05/2017 08:48	1284204	270	1	94.2	12.4	2.7	463	96.8		2.2	120	31.67		200		12.1	193
														120						

DB 340		130920	(130920) Tolka Estuary, Clontarf Boat Club - Surface Sample	20/07/2017 07:55	1316819	102	1			2.3	160	99		0.9	52	32.93		165		16.33	58
				16/08/2017 07:54	1327836	129	1			2.4	273	95		1.3	59	30.14		790		16.02	144
				20/09/2017 10:37	1342205	188	<1			3.5	332	96		2.3	78	32.14		544		14.87	144
															59						
		130921	(130921) Tolka Estuary, Clontarf Boat Club - Depth Sample	20/07/2017 07:57	1316820	99	<1			1.7	150	99		1.4	51	33.29		165		16.44	51
				16/08/2017 07:57	1327837	100	1			1.2	221	97		2.8	52	32.44		695		16.01	121
				20/09/2017 10:39	1342206	113	<1			2.1	208	97		2.8	56	33.24		412		14.55	95
															52						
	123A_ESTUA	130922	(130922) Tolka Estuary, Clontarf Boat Club - Composite Sample	04/05/2017 08:27	1284205	257	1	97.1	12	4	408		96.7	1.9	107		32	169	11.9		151
				24/05/2017 09:38	1293256	65	<1	105.6	12.7	2.1	161		100.2	1	44		32.99	214	13.6		96
				07/06/2017 09:11	1298581	83	<1	100.8	13.1	0.8	201		101	0.6	38		32.52	346	13.2		118
															44						
DB 350	123_ESTUAR	130930	(130930) Tolka Estuary, S. Lagoon at Bull Wall Wooden Bridge - Surface Sample	16/08/2017 07:39	1327838	396	2			2.1	685	93		1.9	138	27.37		1312		16.01	289
															138						
		130931	(130931) Tolka Estuary, S. Lagoon at Bull Wall Wooden Bridge - Depth Sample	16/08/2017 07:42	1327839	303	2			2	529	93		2.2	111	29.03		1099		16.09	226
															111						
	123A_ESTUA	130932	(130932) Tolka Estuary, S. Lagoon at Bull Wall Wooden Bridge - Composite Sample	04/05/2017 08:07	1284206	249	1	97.6	11.9	3.5	381		98.6	1.6	96		32.2	142	11.9		132
				24/05/2017 09:52	1293257	214	<1	103.8	13.6	1.6	387		99.6	1.2	72		32.09	361	14.1		173
				07/06/2017 09:44	1298582	134	<1	101.4	13.7	0.8	314		102.1	0.8	58		31.31	522	13.7		180
				20/07/2017 08:15	1316821	296	1	98.4	16.8	4	504		90.7	2.4	161		31.97	411	16.7		208
				20/09/2017 10:56	1342207	15	<1	97.8	14.5	2.4	15		99	1.9	23		33.72	236	14.6		<40
															72						

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Appendix 7.2.4 Dublin Bay Water Monitoring Points Agreed by the EPA

Report for Samples Taken During the Period: 01/04/2017 - 31/10/2017

Customer	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
DCC			Surface Water Objectives for Transitional Water Bodies - SI 272 of 2009					35% PSU 80% - 120%		HIGH / GOOD 2.5 ug/l (median) GOOD/MODERATE 5.0ug/l (median)	HIGH STATUS 34.5% PSU < 170 ug/l N GOOD STATUS 0% PSU < 2600 ug/l N 34.5% PSU <250 ug/l N		35% PSU 80% - 120%								
			Compliant																		
			Non-Compliant																		
DB 610	123A_ESTUA	130602	(130602) Irish Sea Dublin, Bailey - Composite Sample	25/05/2017 09:22	1293981	<10	<1	109	12.2	4	< 50		109.2	0.3	19		33.6	51	12.3		<40
				08/06/2017 09:06	1299096	33	<1	103.3	12.9	1.2	33		103.3	0.7	13		33.74	83	13.1		<40
				19/07/2017 09:44	1316361	34	<1	107.8	15.7	1.9	34		107.7	0.7	10		33.86	64	15.7		<40
				17/08/2017 09:35	1328369	18	<1	99.4	15.5	1.3	18		100	1.4	17		33.73	350	15.5		<40
											1.6 HIGH										
DB 430	123_ESTUAR	130700	(130700) Dublin Bay,1km NE Poolbeg Lighthouse - Surface Sample	17/08/2017 08:41	1328359	22	<1			2.9	22	101		2.6	30	32.97		341		15.78	<40
		130701	(130701) Dublin Bay,1km NE Poolbeg Lighthouse - Depth Sample	17/08/2017 08:44	1328360	16	<1			2.3	16	101		1.4	21	33.73		333		15.61	<40
	123A_ESTUA	130702	(130702) Dublin Bay,1km NE Poolbeg Lighthouse - Composite Sample	25/05/2017 08:24	1293973	11	3	109.1	12.6	2.5	11		108.7	0.3	21		33.57	60	12.5		<40
				08/06/2017 08:11	1299088	33	<1	102	13.1	0.9	32		102.5	0.6	20		33.7	99	13.2		<40
				19/07/2017 08:49	1316353	53	<1	109.5	16.2	2.1	53		109.4	0.8	22		33.83	107	16.3		<40
											2.3 HIGH										
DB 450	123A_ESTUA	130712	(130712) Dublin Bay, South Bull Bouy, 1km SE Poolbeg Lighthouse - Composite	25/05/2017 07:35	1293974	12	<1	110	12.3	2.4	12		107.3	0.5	21		33.69	52	12.3		<40
				08/06/2017 07:40	1299089	32	<1	103	13	0.8	31		102.8	0.4	13		33.81	75	13		<40
				19/07/2017 08:13	1316354	32	<1	106.3	15.9	1.2	32		108.9	1.9	15		33.9	89	15.9		<40
				17/08/2017 07:53	1328361	13	<1	100	15.4	0.9	13		100.9	1.9	15		33.79	305	15.4		<40
											1.1 HIGH										
DB 510*	123_ESTUAR	130720	(130720) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Surface Sample	17/08/2017 09:01	1328363	51	<1			1.9	51	103		2.5	26	33.31		369		15.82	<40
		130721	(130721) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Depth Sample	17/08/2017 09:03	1328364	22	<1			0.8	22	100		2.2	18	33.79		371		15.51	<40
	123A_ESTUA	130722	(130722) Dublin Bay, 2.5km ENE Poolbeg Lighthouse - Composite Sample	25/05/2017 08:43	1293976	<10	<1	110.1	12	2.4	< 50		108.9	0.6	17		33.7	<50	12.1		<40
				08/06/2017 08:26	1299091	54	<1	101	13.2	1.2	52		102.4	0.6	22		33.65	117	13.3		<40
				19/07/2017 09:05	1316356	49	<1	107.7	15.8	1.7	49		110.8	0.9	19		33.85	101	16.6		<40
											1.7 HIGH										

DB 540*	123A_ESTUA	130732	(130732) Dublin Bay, 2.5km SSE Poolbeg Lighthouse - Composite Sample	25/05/2017 07:54	1293977	<10	<1	109.3	12.1	2.8	< 50		109	1	16		33.66	<50	12.1		<40
				08/06/2017 07:55	1299092	22	<1	103.3	13	1.6	21		103	0.8	12		33.78	75	13		<40
				19/07/2017 08:35	1316357	28	1	107.7	15.6	1.2	28		108.1	0.7	10		33.92	86	15.7		<40
				17/08/2017 08:23	1328365	12	<1	100.9	15.3	0.9	12		101	0.9	14		33.79	282	15.3		<40
										1.4 HIGH											
DB 550	123A_ESTUA	130742	(130742) Dublin Bay, No. 4 Bouy, 2.5km E of S Poolbeg Lighthouse - Composite	25/05/2017 07:20	1293975	<10	<1	109.5	12.1	2.7	< 50		109.2	0.3	17		33.71	51	12.1		<40
				08/06/2017 07:24	1299090	13	<1	102.9	13	0.9	13		102.7	0.6	16		33.83	80	13		<40
				19/07/2017 07:55	1316355	50	1	107.3	15.8	0.9	50		108.1	1.8	38		33.91	95	15.9		<40
				17/08/2017 07:35	1328362	19	<1	99.9	15.4	0.7	19		100.2	2.2	14		33.75	311	15.3		<40
										0.9 HIGH											
DB 560	123A_ESTUA	130752	(130752) Dublin Bay, Drumleck Point, 5km ENE Poolbeg Lighthouse - Composit	25/05/2017 09:03	1293979	16	<1	108.8	12.1	2.5	16		107.5	0.5	18		33.65	74	13.2		<40
				08/06/2017 08:47	1299094	37	<1	102.2	13.1	1.1	37		102.2	1.1	18		33.7	124	13.2		<40
				19/07/2017 09:24	1316359	30	1	108.9	15.9	1.6	30		108.5	0.8	12		33.87	88	15.9		<40
				17/08/2017 09:20	1328367	16	<1	99.8	15.5	1.2	16		100.7	1.8	15		33.69	340	15.6		<40
										1.4 HIGH											
DB 570*	123A_ESTUA	130762	(130762) Dublin Bay, 5km ESE Poolbeg Lighthouse - Composite Sample	25/05/2017 09:55	1293980	<10	<1	110.4	12	2.7	< 50		111	0.2	15		33.7	<50	12		<40
				08/06/2017 09:38	1299095	21	<1	102.8	12.9	1.9	21		102.7	1.1	13		33.81	82	13		<40
				19/07/2017 10:13	1316360	39	<1	108.8	15.8	2.3	39		108.9	1.2	12		33.86	88	15.9		<40
				17/08/2017 10:00	1328368	13	<1	100	15.5	1.3	13		101	1.5	15		33.75	332	15.6		<40
										2.1 HIGH											
DB 580	123A_ESTUA	130772	(130772) Dublin Bay, Dún Laoghaire, 5km E of S Poolbeg Lighthouse - Composit	25/05/2017 10:42	1293978	<10	<1	110.3	12	2.5	< 50		109.9	0.5	15		33.7	<50	12.3		<40
				08/06/2017 10:08	1299093	21	<1	101.8	12.9	0.8	20		102.8	0.7	11		33.82	80	13		<40
				19/07/2017 12:07	1316358	37	<1	107.8	15.8	1.3	37		108	0.6	10		33.91	91	15.9		<40
				17/08/2017 10:33	1328366	11	<1	101	15.3	1.5	11		101.6	1	16		33.81	295	15.6		<40
										1.4 HIGH											

2017

Appendix 7.2.5 Bathing Water Monitoring

Report for Samples Taken During the Period: 01/05/2017 - 30/09/2017

Customer DCC / EPA Code	Test List	Sampling P	Sampling Point Description	Sampled Date	Sample Number	E. coli MPN/100m	Enterococci CFU/100ml	Enterococci (Confirmed) CFU/100ml	Floating Materials	Mineral Oil (visual)	pH pH	Phenols_Olfactory	Salinity PSU	Surfactants	Visual Inspection
ASW 11	121_BEACH	40520 (40520)	Dollymount North	29/05/2017 15:10	1295243	<10	5		Absent	Absent	8.9	Absent	33.1	Absent	Normal
				06/06/2017 09:45	1297975				Ectocarpus Present	Absent	7.6	Absent	33.9	Absent	Ectocarpus Present
				11/06/2017 13:55	1300202	<10		11	Ectocarpus Present	Absent	8.2	Absent	33.7	Absent	Ectocarpus Present
				12/06/2017 14:00	1300652	<10		5	Absent	Absent	8.4	Absent	33	Absent	Normal
				19/06/2017 07:00	1303153	20		1	Absent	Absent	8.5	Absent	34.5	Absent	Normal
				26/06/2017 12:30	1306057	<10		19	Ectocarpus Present	Absent	8.6	Absent	34.2	Absent	Ectocarpus Present
				03/07/2017 07:30	1308707	86		7	Absent	Absent	8.1	Absent	33.4	Absent	Normal
				09/07/2017 11:30	1311535	231		12	Ectocarpus Present	Absent	8.6	Absent	34	Absent	Ectocarpus Present
				10/07/2017 14:00	1312007	41		8	Absent	Absent	8.5	Absent	34	Absent	Normal
				17/07/2017 07:45	1314815	272		25	Absent	Absent	8.2	Absent	33.9	Absent	Normal
				23/07/2017 12:00	1317708	<10		10	Absent	Absent	8.2	Absent	33.3	Absent	Normal
				31/07/2017 07:25	1320539	717		210	Ectocarpus Present	Absent	8.1	Absent	33.6	Absent	Ectocarpus Present
				02/08/2017 07:20	1321707	441		170	Absent	Absent	8.1	Absent	33.6	Absent	Normal
				08/08/2017 11:35	1324244	75		11	Ectocarpus Present	Absent	8.3	Absent	33.7	Absent	Ectocarpus Present
				13/08/2017 16:00	1326267	<10		4	Absent	Absent	8.5	Absent	33.8	Absent	Normal
				14/08/2017 14:00	1326788	41		16	Ectocarpus Present	Absent	7.5	Absent	32.6	Absent	Ectocarpus Present
				21/08/2017 11:30	1329483	110		250	Absent	Absent	8.2	Absent	32.2	Absent	Normal
				28/08/2017 17:00	1332770	75		25	Absent	Absent	8.7	Absent	34	Absent	Normal
				04/09/2017 10:30	1335211	404		113	Absent	Absent	8.2	Absent	32.2	Absent	Normal
				11/09/2017 15:15	1338466	41		9	Absent	Absent	8.2	Absent	33.4	Absent	Normal
					20										
ASW 12*	121_BEACH	40526 (40526)	Dollymount Bathing Zone	29/05/2017 15:25	1295244	<10	2		Absent	Absent	8.8	Absent	33.1	Absent	Normal
				06/06/2017 10:00	1297976	20	10		Ectocarpus Present	Absent	8	Absent	33.8	Absent	Ectocarpus Present
				11/06/2017 13:40	1300203	10		4	Ectocarpus Present	Absent	8.2	Absent	33.7	Absent	Ectocarpus Present
				12/06/2017 14:10	1300653	<10		5	Absent	Absent	8.6	Absent	32.9	Absent	Normal
				19/06/2017 07:10	1303154	20		2	Absent	Absent	8.4	Absent	34.4	Absent	Normal
				26/06/2017 12:50	1306058	<10		2	Ectocarpus Present	Absent	8.6	Absent	34.4	Absent	Ectocarpus Present
				03/07/2017 07:45	1308708	262		17	Absent	Absent	8	Absent	33.4	Absent	Normal
				09/07/2017 11:50	1311536	63		5	Ectocarpus Present	Absent	8.5	Absent	33.8	Absent	Ectocarpus Present
				10/07/2017 13:45	1312008	52		10	Absent	Absent	8.4	Absent	33.7	Absent	Normal
				17/07/2017 07:30	1314816	259		11	Absent	Absent	8.2	Absent	33.9	Absent	Normal
				23/07/2017 12:20	1317709	<10		6	Absent	Absent	8.3	Absent	33.2	Absent	Normal
				31/07/2017 07:10	1320540	959		300	Absent	Absent	8	Absent	33.7	Absent	Normal
				02/08/2017 07:35	1321708	345		140	Absent	Absent	8.1	Absent	33.8	Absent	Normal
				08/08/2017 11:20	1324245	52		38	Ectocarpus Present	Absent	8.5	Absent	33.8	Absent	Ectocarpus Present
				13/08/2017 15:40	1326268	10		6	Absent	Absent	8.6	Absent	33.8	Absent	Normal
				14/08/2017 14:25	1326789	31		22	Ectocarpus Present	Absent	7.7	Absent	32	Absent	Ectocarpus Present
				21/08/2017 11:40	1329484	120		68	Absent	Absent	8.3	Absent	32.1	Absent	Normal
				28/08/2017 17:20	1332771	41		11	Absent	Absent	8.6	Absent	33.8	Absent	Normal
				04/09/2017 10:50	1335212	300		38	Absent	Absent	8.2	Absent	32.5	Absent	Normal
				11/09/2017 15:35	1338467	10		52	Absent	Absent	8.1	Absent	33.3	Absent	Normal
					20										

ASW 13	121_BEACH	40530 (40530) Dollymount South	29/05/2017 14:50	1295245	41	11		Absent	Absent	8.5	Absent	33.1	Absent	Normal
			06/06/2017 10:30	1297977	1145		210	Absent	Absent	8.2	Absent	33.5	Absent	Normal
			11/06/2017 13:25	1300204	<10		21	Ectocarpus Present	Absent	8.2	Absent	33.4	Absent	Ectocarpus Present
			12/06/2017 14:20	1300654	20		1	Absent	Absent	8.3	Absent	33.5	Absent	Normal
			19/06/2017 07:25	1303155	1467		320	Absent	Absent	8.1	Absent	32	Absent	Normal
			26/06/2017 13:10	1306059	41		9	Absent	Absent	8.3	Absent	33.7	Absent	Normal
			03/07/2017 08:05	1308709	41		8	Absent	Absent	8.1	Absent	33.7	Absent	Normal
			09/07/2017 12:25	1311537	<10		10	Absent	Absent	8.3	Absent	33.6	Absent	Normal
			10/07/2017 13:15	1312009	<10		5	Absent	Absent	8.2	Absent	33.4	Absent	Normal
			17/07/2017 07:15	1314817	20		12	Absent	Absent	8.1	Absent	33.6	Absent	Normal
			23/07/2017 12:40	1317710	199		73	Absent	Absent	8.4	Absent	33.6	Absent	Normal
			31/07/2017 06:35	1320541	282		65	Absent	Absent	8.1	Absent	33.9	Absent	Normal
			02/08/2017 08:00	1321709	1274		190	Absent	Absent	8.1	Absent	33.2	Absent	Normal
			08/08/2017 12:10	1324246	160		32	Ectocarpus Present	Absent	8.3	Absent	33.5	Absent	Ectocarpus Present
			13/08/2017 15:20	1326269	637		60	Absent	Absent	8.5	Absent	34	Absent	Normal
			14/08/2017 14:50	1326790	1187		460	Absent	Absent	8.2	Absent	32.4	Absent	Normal
			21/08/2017 12:00	1329485	5172		>2000	Absent	Absent	7.7	Absent	31.6	Absent	Normal
			28/08/2017 18:00	1332772	<10		11	Absent	Absent	8.2	Absent	33.1	Absent	Normal
			04/09/2017 11:10	1335213	85		49	Ectocarpus Present	Absent	8.1	Absent	33	Absent	Ectocarpus Present
			11/09/2017 16:10	1338468	10		6	Absent	Absent	8.2	Absent	33.6	Absent	Normal
					20									

ASW 14	121_BEACH	40535 (40535) Bull Wall Wood Causeway	29/05/2017 14:35	1295246	203	21		Absent	Absent	8.2	Absent	31.6	Absent	Normal
			06/06/2017 10:15	1297978	1616		620	Absent	Absent	8.1	Absent	30.8	Absent	Normal
			11/06/2017 13:15	1300205	246		65	Ectocarpus Present	Absent	8.3	Absent	26.9	Absent	Ectocarpus Present
			12/06/2017 14:30	1300655	63		13	Absent	Absent	8.2	Absent	29.8	Absent	Normal
			19/06/2017 07:40	1303156	295		70	Absent	Absent	8.1	Absent	33.2	Absent	Normal
			26/06/2017 13:30	1306060	<10	<1		Absent	Absent	8.2	Absent	33.2	Absent	Normal
			03/07/2017 08:20	1308710	98		5	Absent	Absent	8.2	Absent	31.7	Absent	Normal
			09/07/2017 12:45	1311538	30		1	Absent	Absent	8.2	Absent	32.2	Absent	Normal
			10/07/2017 13:30	1312010	189		16	Absent	Absent	8.2	Absent	32.7	Absent	Normal
			17/07/2017 07:00	1314818	185		58	Absent	Absent	8	Absent	32.6	Absent	Normal
			23/07/2017 13:05	1317711	10		11	Absent	Absent	8.1	Absent	32.9	Absent	Normal
			31/07/2017 06:50	1320542	1396		450	Absent	Absent	8.1	Absent	31.3	Absent	Normal
			02/08/2017 07:55	1321710	52		15	Absent	Absent	8	Absent	32.8	Absent	Normal
			08/08/2017 11:50	1324247	75		9	Ectocarpus Present	Absent	8.2	Absent	32.7	Absent	Ectocarpus Present
			13/08/2017 15:00	1326270	30		2	Absent	Absent	8.1	Absent	33.2	Absent	Normal
			14/08/2017 15:10	1326791	1267		43	Absent	Absent	8	Absent	31.9	Absent	Normal
			21/08/2017 12:20	1329486	389		80	Absent	Absent	8.1	Absent	32.5	Absent	Normal
			28/08/2017 17:40	1332773	75		6	Absent	Absent	8.2	Absent	31.1	Absent	Normal
			04/09/2017 11:30	1335214	1354		430	Absent	Absent	8	Absent	27.8	Absent	Normal
			11/09/2017 15:35	1338469	52		11	Absent	Absent	8.2	Absent	32.6	Absent	Normal
					20									

ASW 15	121_BEACH	40538 (40538) Poolbeg Outfall Main Discharge	29/05/2017 16:30	1295297	12997		>2000	Absent	Absent	7.6	Absent	23.4	Absent	Normal
			06/06/2017 10:50	1297979	4611		1070	Absent	Absent	7.8	Absent	27.2	Absent	Normal
			11/06/2017 15:30	1300154	<10		8	Absent	Absent	8.1	Absent	34.4	Absent	Normal
			12/06/2017 15:55	1300656	10		3	Absent	Absent	8.1	Absent	33.6	Absent	Normal
			19/06/2017 07:05	1303157	>24196		>2000	Absent	Absent	7.6	Absent	21.4	Absent	Normal
			26/06/2017 13:00	1306092	14136		1510	Absent	Absent	7.8	Absent	24.7	Absent	Normal
			03/07/2017 09:10	1308711	2489		560	Absent	Absent	7.9	Absent	27.7	Absent	Normal
			09/07/2017 13:20	1311528	4884		870	Absent	Absent	7.8	Absent	24.3	Absent	Normal
			10/07/2017 13:10	1311993	8664		>2000	Absent	Absent	7.8	Absent	25.9	Absent	Normal
			17/07/2017 07:10	1314907	988		30	Absent	Absent	8	Absent	29.7	Absent	Normal
			23/07/2017 13:10	1317701	2064		882	Absent	Absent	7.5	Absent	19.8	Absent	Normal
			31/07/2017 07:30	1320599	1119		818	Absent	Absent	8	Absent	31.9	Absent	Normal
			02/08/2017 07:30	1321711	100		270	Absent	Absent	8	Absent	33.1	Absent	Normal
			08/08/2017 14:10	1324428	1090		580	Absent	Absent	7.5	Absent	19.9	Absent	Normal
			13/08/2017 15:20	1326260	100		36	Absent	Absent	8.1	Absent	32.6	Absent	Normal
			14/08/2017 15:45	1326754	763		6800	Absent	Absent	8	Absent	32	Absent	Normal
			21/08/2017 12:50	1329487	15531		>2000	Absent	Absent	7.4	Absent	21.9	Absent	Normal
			28/08/2017 18:10	1332774	8664		220	Absent	Absent	7.8	Absent	27.9	Absent	Normal
			04/09/2017 11:30	1335319	2359		450	Absent	Absent	7.9	Absent	28.6	Absent	Normal
			11/09/2017 17:10	1338476	2909		1355	Absent	Absent	7.8	Absent	27.7	Absent	Normal
				20										
ASW 16	121_BEACH	40540 (40540) Half Moon Club S-Side Wall	29/05/2017 16:50	1295298	41	13		Absent	Absent	8.2	Absent	33.1	Absent	Normal
			06/06/2017 11:10	1297980	20		420	Absent	Absent	8.1	Absent	34.3	Absent	Normal
			11/06/2017 16:20	1300155	20		43	Absent	Absent	8.2	Absent	33.9	Absent	Normal
			12/06/2017 16:25	1300657	3873		>2000	Absent	Absent	7.8	Absent	29.8	Absent	Normal
			19/06/2017 07:25	1303158	20		15	Absent	Absent	8.2	Absent	34.1	Absent	Normal
			26/06/2017 13:20	1306093	<10		2	Absent	Absent	8.2	Absent	33.9	Absent	Normal
			03/07/2017 09:30	1308712	20		5	Absent	Absent	8.1	Absent	33.2	Absent	Normal
			09/07/2017 13:45	1311529	85		13	Absent	Absent	8.1	Absent	32.5	Absent	Normal
			10/07/2017 13:30	1311994	73		25	Absent	Absent	8.3	Absent	34.1	Absent	Normal
			17/07/2017 07:40	1314908	74		40	Absent	Absent	8	Absent	33.5	Absent	Normal
			23/07/2017 13:30	1317702	31		9	Absent	Absent	8.1	Absent	33.1	Absent	Normal
			31/07/2017 08:00	1320600	41		32	Absent	Absent	8.1	Absent	33.6	Absent	Normal
			02/08/2017 08:00	1321712	43		15	Ectocarpus Present	Absent	8	Absent	34	Absent	Ectocarpus Present
			08/08/2017 14:30	1324429	31		5	Absent	Absent	8.2	Absent	33.6	Absent	Normal
			13/08/2017 15:40	1326261	<10	<1		Absent	Absent	8.2	Absent	33.5	Absent	Normal
			14/08/2017 16:00	1326755	20		22	Absent	Absent	8.1	Absent	34	Absent	Normal
			21/08/2017 13:00	1329488	173		54	Absent	Absent	8.1	Absent	33	Absent	Normal
			28/08/2017 18:30	1332775	<10		77	Absent	Absent	8.3	Absent	33.5	Absent	Normal
			04/09/2017 11:50	1335320	86		17	Absent	Absent	8.1	Absent	32.6	Absent	Normal
			11/09/2017 17:30	1338479	10		20	Absent	Absent	8.1	Absent	33.4	Absent	Normal
				20										

Appendix 7.3

Pollutant Release and Transfer Register (PRTR) Summary Sheets

Guidance to completing the PRTR workbook

PRTR Returns Workbook

REFERENCE YEAR	2017

1. FACILITY IDENTIFICATION

Parent Company Name	Irish Water
Facility Name	Ringsend Waste Water Treatment Plant
PRTR Identification Number	D0034
Licence Number	D0034-01

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	
Address 2	
Address 3	
Address 4	
	Dublin
Country	Ireland
Coordinates of Location	-6.19681343949 53.3390944464
River Basin District	IEEA
NACE Code	3700
Main Economic Activity	Sewerage
AER Returns Contact Name	Niall Horgan
AER Returns Contact Email Address	nhorgan@water.ie
AER Returns Contact Position	Environmental Compliance Specialist
AER Returns Contact Telephone Number	01 8925396
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	
Production Volume	
Production Volume Units	
Number of Installations	
Number of Operating Hours in Year	
Number of Employees	
User Feedback/Comments	Total Annual flow (m3/annum): EP1-147,320,283(2016), 146,245,304(2017) down 0.7%. Fugitive- 3,059,501(2016), 1,220,113(2017) down 60%. Av. conc. of Ammonia at EP1: 19.56mg/l(2016), 10.957mg/l(2017) down 44% therefore Annual Mass Emission down 44%. Av. conc. of BOD at EP1: 27.764mg/l(2016), 33.755mg/l(2017) up 22% therefore AME up 21%. Av.conc. of COD at EP1: 105.813mg/l(2016), 125.76mg/l(2017) up 19% therefore AME up 18%. Av.conc. of SS at EP1: 51.618mg/l(2016), 67.272mg/l(2017) up 30% therefore AME up 29%. Av. conc. of Total N at EP1: 25.044mg/l(2016), 17.988mg/l(2017) down 28% therefore AME down 29%. Av.conc. of Total P at EP1: 4.111mg/l(2016), 4.448mg/l(2017) up 8% therefore AME up 7%
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(f)	Urban waste-water treatment plants

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

Guidance on waste imported/accept

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	

This question is only applicable if you are an IPPC or Quarry site

4.1 RELEASES TO AIR

Link to previous years emissions data

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
01	Methane (CH4)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	1.0	0.0	1.0
02	Carbon monoxide (CO)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	10217.0	10324.0	0.0	107.0
03	Carbon dioxide (CO2)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	3011184.0	36864724.0	0.0	33853540.0
05	Nitrous oxide (N2O)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	191.0	0.0	191.0
07	Non-methane volatile organic compounds (NMVOC)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	34.0	0.0	34.0
08	Nitrogen oxides (NOx/NO2)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	31246.0	31576.0	0.0	326.0
11	Sulphur oxides (SOx/SO2)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	32.0	0.0	32.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill: Ringsend Waste Water Treatment Plant

Please enter summary data on the quantities of methane flared and / or utilised	T (Total) kg/Year	M/C/E	Method Used: Method Code	Method Used: Designation or Description	Facility Total Capacity m3 per hour	
Total estimated methane generation (as per site model)	0.0				N/A	
Methane flared	0.0				0.0	(Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	0.0				N/A	

4.2 RELEASES TO WATERS

Link to previous years emissions data

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only co

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT			Method Used		QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
34	1,2-dichloroethane (EDC)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
25	Alachlor	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
26	Aldrin	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
61	Anthracene	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.405	0.407	0.0	0.002
17	Arsenic and compounds (as As)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	324.177	325.824	0.0	1.647
27	Atrazine	E	ESTIMATE	EPA UWWTP Tool Version 5.0	1.529	1.543	0.0	0.014
62	Benzene	E	ESTIMATE	EPA UWWTP Tool Version 5.0	2.46	2.663	0.0	0.203
91	Benzo(g,h,i)perylene	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.292	0.294	0.0	0.002
63	Brominated diphenylethers (PBDE)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
18	Cadmium and compounds (as Cd)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	7.556	7.892	0.0	0.336
28	Chlordane	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
29	Chlordecone	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
30	Chlorfenvinphos	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
79	Chlorides (as Cl)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	125403377.439	125403377.439	0.0	0.0
31	Chloro-alkanes, C10-C13	E	ESTIMATE	EPA UWWTP Tool Version 5.0	30.715	30.971	0.0	0.256
32	Chlorpyrifos	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.01	0.01	0.0	0.0
19	Chromium and compounds (as Cr)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	45.092	45.214	0.0	0.122
20	Copper and compounds (as Cu)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	1786.63	1793.524	0.0	6.894
52	Cyanides (as total CN)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	428.765	432.181	0.0	3.416
33	DDT	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
70	Di-(2-ethyl hexyl) phthalate (DEHP)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	134.147	137.759	0.0	3.612
35	Dichloromethane (DCM)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	6.648	6.794	0.0	0.146
36	Dieldrin	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
37	Diuron	E	ESTIMATE	EPA UWWTP Tool Version 5.0	3.656	3.656	0.0	0.0
38	Endosulphan	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
39	Endrin	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
65	Ethyl benzene	E	ESTIMATE	EPA UWWTP Tool Version 5.0	2.426	2.566	0.0	0.14
66	Fluoranthene	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.342	0.357	0.0	0.015
53	Fluorides (as total F)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	60434.918	60837.555	0.0	402.637
40	Halogenated organic compounds (as AOX)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	349.065	351.977	0.0	2.912
41	Heptachlor	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
90	Hexabromobiphenyl	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0

42	Hexachlorobenzene (HCB)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
43	Hexachlorobutadiene (HCBD)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
89	Isodrin	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
67	Isoproturon	E	ESTIMATE	5.0 EPA UWWTP Tool Version	1.097	1.115	0.0	0.018
23	Lead and compounds (as Pb)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	444.497	457.674	0.0	13.177
45	Lindane	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.066	0.067	0.0	0.001
21	Mercury and compounds (as Hg)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.122	0.0	0.122
46	Mirex	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
65	Naphthalene	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.585	0.761	0.0	0.176
22	Nickel and compounds (as Ni)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	622.65	627.042	0.0	4.392
64	Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	12.132	13.461	0.0	1.329
67	Octylphenols and Octylphenol ethoxylates	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
69	Organotin compounds (as total Sn)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
48	Pentachlorobenzene	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
49	Pentachlorophenol (PCP)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
71	Phenols (as total C)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	133.051	231.717	0.0	98.666
50	Polychlorinated biphenyls (PCBs)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
72	Polycyclic aromatic hydrocarbons (PAHs)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	1.813	2.075	0.0	0.262
51	Simazine	E	ESTIMATE	5.0 EPA UWWTP Tool Version	2.061	2.078	0.0	0.017
52	Tetrachloroethylene (PER)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	8.642	8.642	0.0	0.0
53	Tetrachloromethane (TCM)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
73	Toluene	E	ESTIMATE	5.0	72.135	89.123	0.0	16.988
12	Total nitrogen	M	OTH	Digestion & Colorimetry	2630660.539	2679361.349	0.0	48700.81
76	Total organic carbon (TOC) (as total C or COD/3)	M	OTH	Potassium Dichromate Method	6130603.169	6362209.899	0.0	231606.73
13	Total phosphorus	M	OTH	Digestion & Colorimetry	650499.115	658029.652	0.0	7530.537
59	Toxaphene	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
74	Tributyltin and compounds	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
54	Trichlorobenzenes (TCBs)(all isomers)	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
57	Trichloroethylene	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
77	Trifluralin	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
75	Triphenyltin and compounds	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
60	Vinyl chloride	E	ESTIMATE	5.0 EPA UWWTP Tool Version	0.0	0.0	0.0	0.0
78	Xylenes	E	ESTIMATE	5.0 EPA UWWTP Tool Version	16.951	18.889	0.0	1.938
24	Zinc and compounds (as Zn)	E	ESTIMATE	5.0	7219.2	7367.932	0.0	148.732

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS				Please enter all quantities in this section in KGs			
POLLUTANT				QUANTITY			
			Method Used				

No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS — Please enter all quantities in this section in KGs

POLLUTANT			Method Used		QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
370	Selenium	E	ESTIMATE	EPA UWWTP Tool Version 5.0	694.665	695.478	0.0	0.813
205	Antimony (as Sb)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	22.602	23.166	0.0	0.566
368	Molybdenum	E	ESTIMATE	EPA UWWTP Tool Version 5.0	221.805	223.513	0.0	1.708
358	Tin	E	ESTIMATE	EPA UWWTP Tool Version 5.0	442.392	442.392	0.0	0.0
373	Barium	E	ESTIMATE	EPA UWWTP Tool Version 5.0	3359.986	3403.463	0.0	43.477
374	Boron	E	ESTIMATE	EPA UWWTP Tool Version 5.0	42922.997	43319.94	0.0	396.943
356	Cobalt	E	ESTIMATE	EPA UWWTP Tool Version 5.0	25.704	26.094	0.0	0.39
366	Vanadium	E	ESTIMATE	EPA UWWTP Tool Version 5.0	398.851	405.196	0.0	6.345
388	Dichlobenil	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.628	0.631	0.0	0.003
383	Linuron	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
385	Mecoprop Total	E	ESTIMATE	EPA UWWTP Tool Version 5.0	15.655	15.8	0.0	0.145
380	2,4 Dichlorophenol (2,4 D)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	7.462	7.505	0.0	0.043
384	MCPA	E	ESTIMATE	EPA UWWTP Tool Version 5.0	12.963	12.975	0.0	0.012
382	Glyphosate	E	ESTIMATE	EPA UWWTP Tool Version 5.0	224.154	224.635	0.0	0.481
389	Benzo[a]pyrene	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.292	0.294	0.0	0.002
390	Benzo[b]fluoranthene	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.292	0.294	0.0	0.002
391	Benzo[k]fluoranthene	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.292	0.294	0.0	0.002
392	Indeno[1,2,3-c,d]pyrene	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.322	0.324	0.0	0.002
393	Carbon tetrachloride	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
394	2,6-Dichlorobenzamide	E	ESTIMATE	EPA UWWTP Tool Version 5.0	11.766	11.839	0.0	0.073
395	Dicofol	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
396	Hexabromocyclodecane (HBCD)	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.0	0.0	0.0	0.0
397	PFOS	E	ESTIMATE	EPA UWWTP Tool Version 5.0	0.071	0.071	0.0	0.0
238	Ammonia (as N)	M	OTH	Colorimetric Analysis	1602409.603	1637771.116	0.0	35361.315
303	BOD	M	OTH	5 Day BOD Test	4936510.257	5283073.594	0.0	346563.337
306	COD	M	OTH	Potassium Dichromate Method	18391609.506	19086629.696	0.0	694820.19
362	Kjeldahl Nitrogen	M	OTH	Digestion & Colorimetry	2041564.452	2090105.906	0.0	48521.454
327	Nitrate (as N)	M	OTH	Colorimetric Analysis	552607.251	552698.759	0.0	91.508
372	Nitrite (as N)	M	OTH	Colorimetric Analysis	57766.895	57793.737	0.0	26.842
332	Ortho-phosphate (as PO4)	M	OTH	Colorimetric Analysis	1120970.26	1131197.247	0.0	10226.987
240	Suspended Solids	M	OTH	Gravimetric Analysis	9838214.131	10175193.48	0.0	336979.349

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.3 RELEASES TO WASTEWATER OR SEWER

Link to previous years emissions data

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.4 RELEASES TO LAND

Link to previous years emissions data

SECTION A : PRTR POLLUTANTS

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
			Method Used				
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
			Method Used				
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

Please enter all quantities on this sheet in Tonnes

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	19 08 01	No	879.0	screenings	D5	M	Weighed	Offsite in Ireland	Greenstar Ltd,Permit No. CPD 735/5	Unit 41,Cookstown Industrial Estate,Tallaght,Dublin 24,Ireland		
Within the Country	19 08 02	No	273.0	waste from desanding	D5	M	Weighed	Offsite in Ireland	Greenstar Ltd,Permit No. CPD 735/5	Unit 41,Cookstown Industrial Estate,Tallaght,Dublin 24,Ireland		
Within the Country	19 08 05	No	17995.0	sludges from treatment of urban waste water	R10	M	Weighed	Offsite in Ireland	Peadar Byrne Haulage,Licence No. 990s70099508	P.Byrne Haulage,Baltinglass,Wicklow ,Co. Wicklow,Ireland		

* Select a row by double-clicking the Description of Waste then click the delete button

Link to previous years waste data
Link to previous years waste summary data & percentage change
Link to Waste Guidance

Appendix 7.4

Storm Water Overflow Assessment

Dublin City Council Functional Area

Storm Water Overflow SW2 at Ringsend WWTP

Storm Water overflows occurred from SW2 in the Ringsend WWTP on 14 dates in 2017. These are tabulated below. See **Section 4** of main report.

2017	TOTAL Influent	Effluent	Storm Discharge	Rank
	m³/d	m³/d	m³/d	>200,000m³/d
22/03/2017	620,960	852,141	56,648	
23/03/2017	854,188	701,292	62,784	
27/05/2017	754,974	648,638	111,868	
05/06/2017	434,105	461,077	100,081	
06/06/2017	485,109	433,602	15,435	
08/06/2017	794,728	578,910	157,789	
09/06/2017	546,654	643,664	15,029	
27/06/2017	800,026	590,574	28,355	
14/08/2017	854,736	662,143.38	117,592	
15/08/2017	655,547	499,027.5	36,387	
22/11/2017	999,301	897,119.58	414,637	1
23/11/2017	833,616	741,023.47	49,498	
10/12/2017	757,477	703,331.54	20,897	
30/12/2017	764,242	683,598.91	33,113	
		No.	14	
		Total	1,220,113	
		Max	414,637	
		Min	15,029	

Meath County Council Functional Area

1. Storm Water Overflow Assessment for Milltown Pumping Station Meath (S.W.2)
2. Storm Water Overflow Assessment for Castle Street Pumping Station (S.W.4)
3. Storm Water Overflow Assessment for Moulden Bridge pumping station (S.W.6)
4. Storm Water Overflow Assessment for Kilbride Pumping Station (S.W.7)
5. Storm Water Overflow Assessment for Cherry Tree Drive Pumping Station (S.W.8)

NAME OF RECEIVING WATER: River Broadmeadow				**GIS CO -ORDINATES OF DISCHARGE:** 307220/251800
SECONDARY DISCHARGE POINT CODE: S.W.2 Milltown Pumping Station Meath				**PHOTOGRAPHS TAKEN:** YES **VIDEO TAKEN**: NO
TIME IN:				**WEATHER:** Dry
TIME OUT:				**WEATHER CONDITIONS OVER 24HRS:** Dry
	Yes	**No**	**N/A**	**COMMENTS**
14.1 Was there evidence of the operation of the storm water overflow?			**x**	
14.2 Is there a system in place to monitor the frequency of the operation of the SWO?			**x**	Level probes and SCADA system in Place
14.3 Is the SWO operating according to the criteria specified in the Procedures and Criteria in relation to Storm Water Overflows?			**x**	The overflow in question operates only as an emergency overflow and not as a SWO. There is no storage facility onsite. Should the level rise in the inlet sump due to an operational matter a high-level alarm is sent to the plant operator. There are 3 pumps serving this pumping station; duty, assist and standby. Each pump can pump a total of 57 litres/second. With 2 pumps running, duty and assist, the pumping station can pump a total of 114 litres/second. In a 24-hour period this pumping station has the capacity to pump 9,849.6m^3/day 2011 CSO data identifies an average of 3.0 persons per house for Ashbourne. According to the IW sewer network maps and the national geo-directory, Milltown services 283 houses which equates to a PE of 849. $\Rightarrow$ 849 x225 litres = 191,025 litres/day / 1,000=191m^3 per day (DWF).

				Formula A flow= 191+ 1.36 (849) = 1,345.64 m^3 /day This assessment finds that this pumping station is operating to the criteria specified in the procedures and criteria in relation to storm water overflows (Formula A) as the forward feed flow exceeds formula A by more than a factor of 2.
14.4 Is the SWO causing significant visual/aesthetic impact or resulting in public complaints?		**X**		
14.5 Have the local authority evaluated whether there is deterioration in the water quality of the receiving water due to the operation of the SWO?	X			See Table 1 results from ambient monitoring carried out during emergency overflows on 25/05/16 & 23/08/17.
14.6 Have the local authority evaluated whether the SWO gives rise to failure to meet the requirements of national Regulations (for example, the Bathing Water Regulations)?		X		No bathing area in the vicinity
14.7 Does the SWO operate in dry weather?		X		
14.8 Was there evidence of gross solids or litter in the receiving water associated with the SWO discharge resulting in an impairment of, or an interference with, amenities or the environment?		X		

Table 1: Milltown Pumping Station Ambient Monitoring following on from an Emergency Overflow

Incident Number	Date		NH4	Ortho P	Total P	BOD	Total N	DO % Sat	DO mg/L	Temp
INCI010199	23/05/2016	U/S	0.16	0.082				143	14.3	15.6
		D/S	0.069	0.087				153	15.1	15.6
INCI012737	23/08/2017	U/S	0.017	0.27	0.224	1.42	1.29			
		D/S	0.04	0.202	0.23	1.8	1.45			

Figure 1: Picture of Milltown Pumping Station and the River Broadmeadow

NAME OF RECEIVING WATER: Broadmeadow River				**GIS CO -ORDINATES OF DISCHARGE:** 305800/252230
SECONDARY DISCHARGE POINT CODE: S.W.4 Meath, Castle Street pumping station Ashbourne.				**PHOTOGRAPHS TAKEN:** YES **VIDEO TAKEN**: YES
TIME IN:				**WEATHER:** Dry
TIME OUT:				**WEATHER CONDITIONS OVER 24HRS:** Dry
	Yes	**No**	**N/A**	**COMMENTS**
14.1 Was there evidence of the operation of the storm water overflow?		**X**		
14.2 Is there a system in place to monitor the frequency of the operation of the SWO?	**X**			Level probes and Scada system in place
14.3 Is the SWO operating according to the criteria specified in the Procedures and Criteria in relation to Storm Water Overflows?	**X**			The overflow in question has only operated as an emergency overflow and not as an SWO. There is storage capacity onsite sized for 500m^3. On site there is a foul sump with 3 pumps, two duty and 1 standby. The two pumps on duty can pump an average of 330 litres/second according to recent Scada records. 3.0 persons per house from 2011CSO data x 343 houses calculated from IW sewer network maps and the Geodirectory website= 1,029 persons 1,029 x225litres = 231,525 litres/day / 1,000=231.5m^3 per day (DWF). Formula A flow= 231.5 + 1.36 (1,029) = 1,630.94m^3/day Millennium Park which is also pumped to castle street pumping station has a formula A Flow from the 2016 AER of 7,688.3 m^3/day. =7,688.3 +1,630.94= 9,319.24 m^3/day

				Pump capacity = 330 l/s (3600) = 1,188,000 litres/ hour /1000= 1,188 m^3/hour x24hours = 28,512m^3/day. For these reasons the findings of this assessment is that the SWO is operating to the criteria specified in the procedures and criteria in relation to storm water overflows (Formula A) as the forward feed flow exceeds formula A by more than a factor of 2.
14.4 Is the SWO causing significant visual/aesthetic impact or resulting in public complaints?		**X**		
14.5 Have the local authority evaluated whether there is deterioration in the water quality of the receiving water due to the operation of the SWO?	**X**			See Table 1 results from ambient monitoring carried out during emergency overflows on 02/06/16 & 22/11/17.
14.6 Have the local authority evaluated whether the SWO gives rise to failure to meet the requirements of national Regulations (for example, the Bathing Water Regulations)?	**X**			No bathing areas in the vicinity
14.7 Does the SWO operate in dry weather?		**X**		
14.8 Was there evidence of gross solids or litter in the receiving water associated with the SWO discharge resulting in an impairment of, or an interference with, amenities or the environment?		**X**		

Table 1: Castle Street Pumping Station Ambient monitoring following from an emergency overflow

Incident Number	Date	Location	COD	NH4	Total P	BOD	Ortho P	Total N	DO mg/L	DO %
INCI010822	02/06/2016	U/S	15.7	0.033	0.137				10.5	
		D/S	18.6	0.027	0.129				11.7	
INCI013412	22/11/2017	U/S	59.5	0.325	0.658	5.95	0.441	3.68		
		D/S	63.9	0.34	0.629	6.86	0.434	5.89		

Figure 1 Castle Street Pumping Station

NAME OF RECEIVING WATER: Unnamed tributary of the River Ward				**GIS CO -ORDINATES OF DISCHARGE:** 306676/245818
SECONDARY DISCHARGE POINT CODE: S.W.7 Meath, Kilbride pumping station.				**PHOTOGRAPHS TAKEN:** Yes **VIDEO TAKEN**: NO
TIME IN:				**WEATHER:** Dry
TIME OUT:				**WEATHER CONDITIONS OVER 24HRS:** Dry
	Yes	**No**	**N/A**	**COMMENTS**
14.1 Was there evidence of the operation of the storm water overflow?			**X**	
14.2 Is there a system in place to monitor the frequency of the operation of the SWO?			**X**	Level probes and SCADA system in place. Kilbride pumping station does not operate as a storm water overflow and overflows from this pumping station are quite rare. Kilbride pumping station will only possibly overflow in the case of serious plant failure. Even at that, the pumping station is equipped with a number of alarms that will activate a malfunction alarm to the plant operator. There is no storage capacity onsite. The main pumping stations, namely Ratoath and Ashbourne which pump forward to Kilbride pumping station will pump to an inlet sump level of 4 metres at Kilbride. Once this trigger level is reached at Kilbride, the PLC serving Kilbride deactivates the Ratoath and Ashbourne pumping stations.
14.3 Is the SWO operating according to the criteria specified in the Procedures and Criteria in relation to Storm Water Overflows?			**X**	Any overflows that may occur at Kilbride will only occur as an emergency overflow and not as a SWO. Therefore, there is no storage capacity onsite for overflows. Kilbride PS is served by 3 pumps, namely duty, assist and standby. According to recent SCADA records, the duty and assist pumps can pump an average of 145litres/second.

14.4 Is the SWO causing significant visual/aesthetic impact or resulting in public complaints?		**X**		
14.5 Have the local authority evaluated whether there is deterioration in the water quality of the receiving water due to the operation of the SWO?			**X**	Kilbride pumping station does not operate as a SWO. However, in 2016 the following receiving water samples were obtained following an EO event at this pumping station: u/s Kilbride BOD < 1 mg/l d/s Kilbride BOD 170 mg/l u/s Kilbride COD 6.98 mg/l d/s Kilbride COD 166 mg/l u/s Kilbride Ammonium 0.082 mg/l d/s Kilbride Ammonium 0.857 mg/l u/s Kilbride Ortho-P 0.041 mg/l d/s Kilbride Ortho-P 1.5 mg/l
14.6 Have the local authority evaluated whether the SWO gives rise to failure to meet the requirements of national Regulations (for example, the Bathing Water Regulations)?			**X**	No bathing areas in the vicinity
14.7 Does the SWO operate in dry weather?			**X**	
14.8 Was there evidence of gross solids or litter in the receiving water associated with the SWO discharge resulting in an impairment of, or an interference with, amenities or the environment?			**X**	

Figure 1: Emergency Overflow Point from Kilbride Pumping Station

NAME OF RECEIVING WATER: Unnamed tributary of the River Ward				**GIS CO -ORDINATES OF DISCHARGE:** 306330/246270
SECONDARY DISCHARGE POINT CODE: S.W.8 Meath, Cherry Tree drive pumping station Kilbride.				**PHOTOGRAPHS TAKEN:** YES **VIDEO TAKEN**: YES/NO
TIME IN:				**WEATHER:** Dry
TIME OUT:				**WEATHER CONDITIONS OVER 24HRS:** Dry
	Yes	**No**	**N/A**	**COMMENTS**
14.1 Was there evidence of the operation of the storm water overflow?			**x**	
14.2 Is there a system in place to monitor the frequency of the operation of the SWO?			**X**	Level probes and Scada system in place
14.3 Is the SWO operating according to the criteria specified in the Procedures and Criteria in relation to Storm Water Overflows?			**X**	The overflow in question has only operated as an emergency overflow and not as an SWO. There is no storage capacity onsite. On site there is a foul sump with 2 pumps, one duty and standby. The pump on duty can pump an average of 6.7 litres/second according to recent Scada records. 3.36 persons per house from recent CSO data x 18 houses = 60.48 persons 60 x225litres = 13,500 litres/day / 1000=13.5m^3 per day. Formula A flow= 13.5 + 1.36 (60) = 95.1m^3/day Pump capacity = 6.7 l/s (3600) = 24,120 litres/ hour /1000= 24.12m^3/hour x24hours = 578.8m^3/day.

14.4 Is the SWO causing significant visual/aesthetic impact or resulting in public complaints?		**X**		
14.5 Have the local authority evaluated whether there is deterioration in the water quality of the receiving water due to the operation of the SWO?		**X**		
14.6 Have the local authority evaluated whether the SWO gives rise to failure to meet the requirements of national Regulations (for example, the Bathing Water Regulations)?	**X**			No bathing areas in the vicinity
14.7 Does the SWO operate in dry weather?		**X**		
14.8 Was there evidence of gross solids or litter in the receiving water associated with the SWO discharge resulting in an impairment of, or an interference with, amenities or the environment?		**X**		

Figure 1 Emergency Outfall

Figure 2 Cherry Tree Drive Pumping Station

Storm Water Overflow Identification and Inspection Report

Storm Water Overflow Identification and Inspection Report for Moulden Bridge Pumping Station Rathoath

Condition 4.12 of the WWDL for Ringsend requires the following with regard storm water overflows:

4.12 Storm water overflows

4.12.1 The licensee shall, prior to the date for submission of the second AER (required under Condition 6.10), carry out an investigation for the identification and assessment of storm water overflows. A report on the storm water overflows shall be submitted to the Agency as part of the second AER. The assessment shall include a determination of compliance with the criteria for storm water overflows, as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995 and any other guidance as may be specified by the Agency.

4.12.2 The licensee shall carry out an assessment of storm water overflows at least once every three years thereafter and report to the Agency on each occasion as part of the AER. The assessment shall include a determination of compliance with the criteria for storm water overflows, as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995 and any other guidance as may be specified by the Agency. The licensee shall maintain a written record of all assessments and remedial measures arising from the assessment.

The storm water overflow identified in Schedule A.4 of the licence is as:

Eden Code	Licence Code	Location	Receiving Waters
TPEFF0700D0034SW320	S.W.6	303240E 251560N	Tributary of the River Broadmeadow

This is an overflow from the on-site storm tank. Flows in excess of 3DWF are screened and sent to the storm tank. When flows recede the contents of the tanks is pumped back to the inlet chamber. When peak design flows are exceeded the storm tank overflows to a tributary of the River Broadmeadow.

DISCHARGE POINT CODE: **S.W.6**

Formula A = DWF + 1.36P + 2E

The population discharging into the sewer network served by Maudlin Bridge was determined using IW sewer network maps and data from the Geodirectory website for the number of houses in the area discharging into the pumping station. 2016 census data from the CSO website indicated a figure of 3.36 persons per household for Ratoath. The population calculated from mentioned sources revealed a population of 893 persons discharging into pumping station.

$\Rightarrow$ DWF = 893 x 225litres/day=200,925L/day or 200.9m^3 of sewage per day discharged to Maudlin Bridge pumping station.

$\Rightarrow$ Formula A flow= 200.9 + 1.36(893) = 1,415.38m^3/day (6DWF)

Pump Flow

Average pump flow based on current SCADA records= 11 litres/second

= 39.6m^3/hour x 24 hours= 950.4m^3/Day

Storage facility required to take peak flows: 1,415.38-950.4= 464.98 m^3/Day

38.74 m^3 storage required for 2 hours retention time in storm tank at formula A flow.

The size of retention tank could not be determined at the time of carrying out this study but it is assumed to have >100 m^3 of storage capacity.

Based on the size of the storm tank along with the dilution available in the receiving waters the storm water overflows appear to be in compliance with the DoEHLG, Environment '*Procedures and Criteria in Relation to Storm Water Overflows'*.

NAME OF RECEIVING WATER: Tributary of the River Broadmeadow				**GIS CO -ORDINATES OF DISCHARGE:** 303240E 251560N
SECONDARY DISCHARGE POINT CODE: S.W.6				**PHOTOGRAPHS TAKEN:** Yes **VIDEO TAKEN: No**
TIME IN: 9:30 **TIME OUT:** 11:30				**WEATHER:** Dry
				WEATHER CONDITIONS OVER 24HRS: Dry
	Yes	**No**	**N/A**	**COMMENTS**
14.1 Was there evidence of the operation of the storm water overflow?		**x**		
14.2 Is there a system in place to monitor the frequency of the operation of the SWO?		**x**		Level probes and Scada system in place.
14.3 Is the SWO operating according to the criteria specified in the Procedures and Criteria in relation to Storm Water Overflows?	**x**			Based on size of storm tanks and dilution available in receiving waters.
14.4 Is the SWO causing significant visual/aesthetic impact or resulting in public complaints?		**X**		
14.5 Have the local authority evaluated whether there is deterioration in the water quality of the receiving water due to the operation of the SWO?	**X**			
14.6 Have the local authority evaluated whether the SWO gives rise to failure to meet the requirements of national Regulations (for example, the Bathing Water Regulations)?		**X**		No Bathing Areas in the vicinity
14.7 Does the SWO operate in dry weather?		**X**		No evidence of the pumping station overflowing. The overflow only seems to occur in the case of pump failure according to Scada records.
14.8 Was there evidence of gross solids or litter in the receiving water associated with the SWO discharge resulting in an impairment of, or an interference with, amenities or the environment?		**X**		

Figure 1: Overflow Discharge Pipe from Moulden Bridge Pumping Station Rathoath

Figure 2: Moulden Bridge Pumping Station Rathoath

Appendix 7.5

Programme of Improvements

Dublin City Council Functional Area

There is no specified improvement report for this functional area. See **Section 4.4.2** for improvement details.

South Dublin County Council Functional Area

Completed Improvements 2017

Location	Description of Works	Benefits
Arthur Griffith Park	Ring removed from sewer and line dragged	Blockage issue resolved
Woodford, Clondalkin	Re-route foul sewer directly to 9B	Currently being surveyed by IW team
Lucan Low Level PS	Replacement Pump 1 with new improved design	Asset needs brief with IW
Esker PS	Replacement of Pumps 5 & 6	Asset needs brief with IW
Springfield	Foul sewer junction realigned	No blockages and discharges to Dodder since works were done Aug 2017.

Planned Improvement works in 2018

Pumping stations all	Provide means of isolation of foul flow to wet-well by provision of isolation valves or penstock on gravity intake to stations.	To provide a means of quick, safe and effective of isolation of flow to sump for cleaning and pump maintenance This would facilitate increased sump cleaning for prevention of pump chokes.
Woodford, Clondalkin	Re-route foul sewer directly to 9B	Prevention of blockages on sewer
Lucan Low Level PS	Replacement Pump 1 with new improved design	Help prevent clogging and improve reliability of Lucan Low Level PS.
Esker PS	Replacement of Pumps 5 & 6	To improve station throughput
Esker	Replace suction and discharge valves for 6 no. valves.	Current valves are worn and do not seal properly. Pumps can be switched and replaced with greater ease.
All pumping stations	Provide means of isolation of foul flow to wet-well by provision of isolation valves or penstock on gravity intake to stations.	To provide a means of quick, safe and effective of isolation of flow to sump for cleaning and pump maintenance This would facilitate increased sump cleaning for prevention of pump chokes.

Fingal County Council Functional Area

There is no specified improvement report for this functional area.

Dún Laoghaire Rathdown County Council Functional Area

There is no specified improvement report for this functional area.

Meath County Council Functional Area

There is no specified improvement report for this functional area.

Appendix 7.6

Priority Substances Assessment

Table 7.6.1: Screening of Effluent

Table 7.6.2: Impact on Receiving Waters

Table 7.6.3: Screening of Influent

Table 7.6.4: Screening of Influent Lines to Ringsend WWTP

Ringsend Influent and Effluent Priority Substances Screening, 2017

To comply with condition **4.11.1** of Licence D0034-01, 2 sub-samples of the Ringsend composite influent and effluent were analysed during 2017 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 Effluent Screening Results:

Effluent Sample Reference 1372242 taken on 05/12/17.

See Table 7.6.1. 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 7.6.1**. These included low (microgram and sub-microgram per litre) levels of:

Herbicides / Pesticides: Glyphosate (0.49 µg/l), Mecoprop (0.05 µg/l) and Diazinon (0.009 µg/l).

Phenols / Cresols: m,p – Methylphenol (1 µg/l) was detected.

Metals: Microgram per litre concentrations of the metals Lead (7.0 µg/l), Arsenic (1.5 µg/l), Copper (18.1 µg/l), Zinc (54.2 µg/l), Chromium (2.6 µg/l), Molybdenum (11.6 µg/l), Tin (9.2 µg/l), Barium (20 µg/l), Boron (0.34 mg/l) and Nickel (3.6 µg/l) were detected.

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

Table 7.6.1.

EPA Appendix 1 – Ringsend Effluent Sample 1372242 - 2017 Screening.

EPA Parameters Screened for in Waste Water Discharges

No.	Compound	Result	Group of Compounds
1.	Benzene	<0.10 µg/l	**VOC's**
2.	Carbon Tetrachloride	< 2.0 µg/l	
3	1,2-Dichloroethane	< 2.0 µg/l	
4	Dichloromethane	< 2.0 µg/l	
	Bromodichloromethane	< 2.0 µg/l	
5	Tetrachloroethylene	< 2.0 µg/l	
6	Trichloroethylene	< 2.0 µg/l	
7	Trichlorobenzenes	< 2.0 µg/l	(1,2,4)
8	Trichloromethane	< 2.0 µg/l	
9	Xylenes (all isomers)	< 0.30 µg/l	
10	Ethyl Benzene	< 0.10 µg/l	
11	Toluene	< 0.10 µg/l	
12	Naphthalene	< 0.02 µg/l	**PAH's**
13	Fluoranthene	< 0.02 µg/l	
14	Benzo(k)fluoranthene	< 0.02 µg/l	
15	Benzo(ghi)perylene	< 0.02 µg/l	
16	Indeno(1,2,3-c,d)pyrene	< 0.02 µg/l	
17	Benzo(b)fluoranthene	< 0.02 µg/l	
18	Benzo(a)pyrene	<0.02 µg/l	
	Acenaphthene	<0.02 µg/l	
	Pyrene	<0.02 µg/l	
	Anthracene	<0.02 µg/l	
	Fluorene	<0.02 µg/l	
	Phenanthrene	<0.02 µg/l	
	Benz(a)anthracene	<0.02 µg/l	
		<0.26 µg/l	**Total PAH's**
19	Di(2-ethylhexyl)phthalate (DEHP)	< 10.0 µg/l	**Plasticisers**
	Diethyl Phthalate	< 2.0 µg/l	
20	Isodrin	< 4 ng/l	**Pesticides**
21	Dieldrin	< 4 ng/l	
22	Diuron	< 0.05 µg/l	
23	Isoproturon	< 0.05 µg/l	
24	Atrazine	< 0.02 µg/l	
25	Simazine	< 0.02 µg/l	
26	Glyphosate	**0.49 µg/l**	
27	Mecoprop	**0.05 µg/l**	
28	2,4-D	< 0.05 µg/l	
29	MCPA	< 0.05 µg/l	
30	Linuron	< 0.05 µg/l	

31	Dichlobenil	< 2 ng/l	
32	2,6-Dichlorobenzamide	N/A*	
	Diazinon	**0.009 µg/l**	
	Dimethoate	< 0.020 µg/l	
33	PCB's (Sum of 7)	< 0.016 ng/l	**PCB's**
34	Phenols	< 5.0 µg/l	**Phenols**
	m,p- Methylphenol	**1 µg/l**	**Cresols**
	o- Methylphenol	< 2 µg/l	
35	Lead (Total as Pb)	**7 µg/l**	**Metals**
36	Arsenic (Total as As))	**1.5 µg/l**	
37	Copper (Total as Cu)	**18.1 µg/l**	
38	Zinc (Total as Zn)	**54.2 µg/l**	
39	Cadmium (Total as Cd)	< 0.60 µg/l	
40	Mercury (Total as Hg)	N/A	*sample matrix interference
41	Chromium (Total as Cr)	**2.6 µg/l**	
42	Selenium (Total as Se)	< 0.8 µg/l	
43	Antimony (Total as Sb)	< 1.2 µg/l	
44	Molybdenum (Total as Mo)	**11.6 µg/l**	
45	Tin (Total as Sn)	**9.2 µg/l**	
	Organo-Tin	< 0.06 µg/l	
46	Barium (Total as Ba)	**20 µg/l**	
47	Boron (Total as B)	**0.34 mg/l**	
48	Cobalt (Total as Co)	<2.00 µg/l	
49	Vanadium (Total as V)	< 4.00 µg/l	
50	Nickel (Total as Ni)	**3.6 µg/l**	
51	Fluoride (as F)	0.462 mg/l	**General**
52	Chloride (as Cl)	441 mg/l	
53	TOC (as C)	-	
54	Cyanide (Total as CN)	< 9 µg/l	
55	**(Sample 1372215)**		
56	Conductivity	1761 uS/cm (20 degrees C)	**Additional Tests**
57	Hardness (mg/l CaCO3)	N/A	

Assessment of the Significance of the Discharge SW1 on Receiving Water Quality.

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 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.

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 3 to 4 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 7.6.2 Assessment of the Significance of the Discharge SW1 on Receiving Water Environmental Quality Standards for Specific Pollutants (Table 10, SI 272 of 2009).

Specific Pollutant Parameter	AA-EQS (µg/l)	Effluent 1372242 (05/12/17)
		SW1
Arsenic	20	1.5
Chromium VI	0.6	2.6*
Copper	5	18.1
Cyanide	10	< 9
Diazinon	0.01	0.009
Dimethoate	0.8	< 0.020
Fluoride	1,500	462
Glyphosate	-	0.49
Linuron	0.7	< 0.05
Mancozeb	2	-
Monochlorobenzene	25	< 2
Phenols	8	< 5.0
Toluene	10	< 0.10
Xylenes	10	< 0.30
Zinc	40	54.2

*= Total Chromium which is > Chromium VI

Ringsend Influent Screening, 2017

To comply with condition **4.11.2 of Licence D0034-01**, a sub-sample of the Ringsend composite influent was analysed during 2017 (on 05/12/16) – 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 05/12/17.

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 Licences) issued on 17/01/11.

Summary of Influent Screening Results:

2017– Influent Sample Reference 1372241 of 05/12/17.

See **Table 7.6.3.** 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 (2.6 µg/l),

BTEX Compounds: Xylenes (0.41 µg/l) and Toluene (4.69 µg/l).

PAH's: Naphthalene (0.389 µg/l), Fluoranthene (0.134 µg/l), Indeno (1,2,3-c,d) pyrene (0.202 µg/l) and a further 4 unlisted PAH's, Acenaphthene (0.107 µg/l), Pyrene (0.132 µg/l), Fluorene (0.129 µg/l) and Phenanthrene (0.37 µg/l) were detected.

Herbicides / Pesticides: Glyphosate was detected at a concentration of 0.516 µg/l.

Phenols : Phenol was detected (56.7 µg/l) and m,p-Methylphenol (95 µg/l) .

Metals: The metals Arsenic (1.4 µg/l), Copper (47.4 µg/l), Zinc (110 µg/l), Chromium (5.1 µg/l), Molydenum (16.9 µg/l), Barium (78.3 µg/l), Boron (0.36 mg/l), Cobalt (2.4 µg/l) and Nickel (9.6 µg/l) were detected.

See highlighted parameters in **Table 7.6.3**.

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

Table 7.6.3

EPA Appendix 1 – Ringsend Influent Sample 1372241 – 2017 PRTR Screening

EPA Parameters Screened for in Waste Water Discharges

No.	Compound	Result	Group of Compounds
1.	Benzene	< 0.10 µg/l	**VOC's**
2.	Carbon Tetrachloride	< 2 µg/l	
3	1,2-Dichloroethane	< 2 µg/l	
4	Dichloromethane	< 2 µg/l	
5	Tetrachloroethylene	<2 µg/l	
6	Trichloroethylene	< 2 µg/l	
7	Trichlorobenzenes	<20 µg/l	(1,2,4)
8	Trichloromethane	**2.6 µg/l**	
9	Xylenes (all isomers)	**0.41 µg/l**	
10	Ethyl Benzene	< 0.10 µg/l	
11	Toluene	**4.69 µg/l**	
12	Naphthalene	**0.389 µg/l**	**PAH's**
13	Fluoranthene	**0.134 µg/l**	
14	Benzo(k)fluoranthene	< 0.10 µg/l	
15	Benzo(ghi)perylene	< 0.10 µg/l	
16	Indeno(1,2,3-c,d)pyrene	**0.202 µg/l**	
17	Benzo(b)fluoranthene	< 0.10 µg/l	
18	Benzo(a)pyrene	< 0.10 µg/l	
	Acenaphthene	**0.107 µg/l**	
	Pyrene	**0.132 µg/l**	
	Anthracene	< 0.10 µg/l	
	Fluorene	**0.129 µg/l**	
	Phenanthrene	**0.37 µg/l**	
		< 1.46 µg/l	**Total PAH's***
19	Di(2-ethylhexyl)phthalate (DEHP)	< 100.0 µg/l	**Plasticisers**
	Diethyl Phthalate	< 20.0 µg/l	
20	Isodrin	< 13 ng/l	**Pesticides**
21	Dieldrin	< 12 ng/l	
22	Diuron	< 0.20 µg/l	
23	Isoproturon	< 0.20 µg/l	
24	Atrazine	< 0.04 µg/l	
25	Simazine	< 0.05 µg/l	
26	Glyphosate	**0.516 µg/l**	
27	Mecoprop	< 0.40 µg/l	
28	2,4-D	< 0.50 µg/l	
29	MCPA	< 0.50 µg/l	
30	Linuron	< 0.20 µg/l	
31	Dichlobenil	< 9 ng/l	
32	2,6-Dichlorobenzamide	N/A	
	Diazinon	< 0.012 µg/l	
	Dimethoate	< 0.02 µg/l	

No.	Compound	Result	Group of Compounds
33	PCB's (Sum of 7)	< 70 ng/l	**PCB's**
34	Phenols	**56.7 µg/l**	**Phenols**
	m,p- Methylphenol	**95 µg/l**	**Cresols**
	o- Methylphenol	< 3.0 µg/l	
35	Lead (Total as Pb)	< 6 µg/l	**Metals**
36	Arsenic (Total as As)	**1.4 µg/l**	
37	Copper (Total as Cu)	**47.4 µg/l**	
38	Zinc (Total as Zn)	**110 µg/l**	
39	Cadmium (Total as Cd)	< 0.6 µg/l	
40	Mercury (Total as Hg)	< 0.10 µg/l	
41	Chromium (Total as Cr)	**5.1 µg/l**	
42	Selenium (Total as Se)	< 0.80 µg/l	
43	Antimony (Total as Sb)	< 1.2 ug /l	
44	Molybdenum (Total as Mo)	**16.9 µg/l**	
45	Tin (Total as Sn))	< 7.0 µg/l	
	Organo-Tin	< 0.30 µg/l	
46	Barium (Total as Ba)	**78.3 µg/l**	
47	Boron (Total as B)	**0.36 mg/l**	
48	Cobalt (Total as Co)	**2.4 µg/l**	
49	Vanadium (Total as V)	< 4.00 µg/l	
50	Nickel (Total as Ni)	**9.6 µg/l**	
51	Fluoride (as F)	0.759 mg/l	**General**
52	Chloride	576 mg/l	
53	TOC	N/A	
54	Cyanide	< 9 µg/l	
	(sample 1372214)		
55	Conductivity	2,146 uS/cm (20 degrees C)	**Additional Tests**
56	Hardness (mg/l CaCO3)	N/A	
57	pH	7.5	

Summary of Influent Lines Screening Results:

2017 – Influent Lines - Sample References 1372468, 1372469, 1372243 and 1372244 all sampled on 05/12/17.

To isolate the source of parameters detected in the Influent, samples were taken from the 4 main influent feeder lines on 05/12/17 as follows :

1372468 : Dun Laoghaire – West Pier
1372469 : Dodder Valley Sewer - UCD FM-10
1372243 : North Dublin Drainage System – Sutton Sump
1372244 : Ringsend – Main Lift Pumping Station

See **Table 7.6.4.** 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 7.6.3** above).

1232887: Dun Laoghaire – West Pier

Parameters detected in this sample included Trichloromethane (2.6 µg/l) and Toluene (0.37 µg/l).

The PAH Indeno(1,2,3-c,d)pyrene (0.147 µg/l) was detected in this sample.

Glyphosate (0.248 µg/l) was detected showing usage in the upstream catchment.

Phenols (38.3 µg/l) and m,p-Methyl Phenol (58 µg/l) were detected in this sample.

The metals Lead (7 µg/l), Arsenic (1.4 µg/l), Copper (43.2 µg/l), Zinc (63 µg/l), Chromium (3.3 µg/l), Molybdenum (4.7 µg/l), Barium (21.4 µg/l) and Nickel (10.5 µg/l) were detected.

See highlighted parameters **in Table 7.6.4.**

1234372: Dodder Valley Sewer - UCD FM-10

Parameters detected in this sample included Trichloromethane (3.7 µg/l) and Toluene (0.25 µg/l).

PAH's Fluoranthene (0.2 µg/l), Indeno(1,2,3-c,d)pyrene (0.325 µg/l), Pyrene (0.17 µg/l), Anthracene (0.224 µg/l) and Phenanthrene (0.157 µg/l) were detected.

The plasticizer di-ethyl phthalate was detected at 23.2 µg/l.

Glyphosate (0.344 µg/l) and Diazinon (0.028 µg/l) were detected showing usage in the upstream catchment.

Phenol was detected at 92 µg/l and m,p- Methyl Phenol at 194 µg/l.

The metals Arsenic (2.1 µg/l), Copper (41.1 µg/l), Zinc (98.6 µg/l), Chromium (4.6 µg/l), Molybdenum (4.9 µg/l), Barium (21.9 µg/l) and Nickel (14.3 µg/l) were detected.

See highlighted parameters **in Table 7.6.4.**

1232888: North Dublin Drainage System – Sutton Sump

Parameters detected in this sample included Trichloromethane (5.1 µg/l), Xylenes (0.73 µg/l) and Toluene (0.58 µg/l).

The PAH's Naphthalene (0.365 µg/l) and Indeno(1,2,3-c,d)pyrene (0.107 µg/l) were detected in this sample.

Glyphosate (0.159 µg/l) was detected showing usage in the upstream catchment.

Phenols (43.2 µg/l) and m,p- Methyl Phenol (111 µg/l) were detected.

The metals Copper (45.6 µg/l), Zinc (136 µg/l), Chromium (3.7 µg/l), Molybdenum (8.5 µg/l), Tin (11.2 µg/l), Barium (37.5 µg/l), Boron (0.25 mg/l) and Nickel (9.1 µg/l) were detected in this sample.

See highlighted parameters in **Table 7.6.4.**

1232889: Ringsend – Main Lift Pumping Station

Parameters detected in this sample included Trichloromethane (4.7 µg/l), Xylenes (1.34 µg/l), Ethyl Benzene (0.26 µg/l) and Toluene (1.15 µg/l).

The PAH's Naphthalene (1.03 µg/l), Fluoranthene (0.301 µg/l), Benzo(ghi)perylene (0.108 µg/l), Indeno(1,2,3-c,d)pyrene (0.208 µg/l) Acenaphthene (0.213 µg/l), Pyrene (0.222 µg/l), Anthracene (0.151 µg/l), Fluorene (0.251 µg/l) and Phenanthrene (0.943 µg/l) were detected in this sample.

Glyphosate (0.556 µg/l) was detected showing usage in the upstream catchment.

Phenol (58 µg/l) and the cresol m,p-Methylphenol (82 µg/l) were detected in this sample.

The metals Arsenic (1.5 µg/l), Copper (40.1 µg/l), Zinc (99.4 µg/l), Chromium (5 µg/l), Antimony (1.5 µg/l), Molybdenum (8.5 µg/l), Tin (13.5 µg/l), Barium (46.1 µg/l), Boron (0.37 mg/l), Cobalt (2.2 µg/l) and Nickel (10.1 µg/l) were detected.

See highlighted parameters **in Table 7.6.4**

Measures to Reduce Detected Priority Substances

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

Table 7.6.4.

EPA Appendix 1 – Ringsend Influent Inflows - 2017 PRTR Screening.

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

No.	Compound	1372468 Dun Laoire West Pier	1372469 UCD FM 10 (Dodder)	1372243 Sutton Sump	1372244 Ringsend Main Lift
1.	Benzene	<0.10 µg/l	< 0.10 µg/l	< 0.10 µg/l	0.21 µg/l
2.	Carbon Tetrachloride	<2 µg/l	<2 µg/l	<2 µg/l	<2 µg/l
3	1,2-Dichloroethane	<2 µg/l	<2 µg/l	<2 µg/l	<2 µg/l
4	Dichloromethane	<2 µg/l	<2 µg/l	<2 µg/l	<2 µg/l
5	Tetrachloroethylene	<2 µg/l	<2 µg/l	<2 µg/l	<2 µg/l
6	Trichloroethylene	<2 µg/l	<2 µg/l	<2 µg/l	<2 µg/l
7	Trichlorobenzene (1,2,4)	<2 µg/l	<2 µg/l	<2 µg/l	<2 µg/l
8	Trichloromethane	**2.6 µg/l**	**3.7 µg/l**	**5.1 µg/l**	**4.7 µg/l**
9	Xylenes (all isomers)	<0.30 µg/l	<0.30 µg/l	**0.73 µg/l**	**1.34 µg/l**
10	Ethyl Benzene	<0.10 µg/l	< 0.10 µg/l	< 0.10 µg/l	**0.26 µg/l**
11	Toluene	**0.37 µg/l**	**0.25 µg/l**	**0.58 µg/l**	**1.15 µg/l**
12	Naphthalene	<0.10 µg/l	<0.10 µg/l	**0.365 µg/l**	**1.03 µg/l**
13	Fluoranthene	<0.10 µg/l	**0.2 µg/l**	< 0.10 µg/l	**0.301 µg/l**
14	Benzo(k)fluoranthene	<0.10 µg/l	<0.10 µg/l	< 0.10 µg/l	< 0.10 µg/l
15	Benzo(ghi)perylene	<0.10 µg/l	<0.10 µg/l	< 0.10 µg/l	**0.108 µg/l**
16	Indeno(1,2,3-c,d)pyrene	**0.147 µg/l**	**0.325 µg/l**	**0.107 µg/l**	**0.208 µg/l**
17	Benzo(b)fluoranthene	<0.10 µg/l	<0.10 µg/l	< 0.10 µg/l	<0.10 µg/l
18	Benzo(a)pyrene	<0.10 µg/l	<0.10 µg/l	< 0.10 µg/l	<0.10 µg/l
	Acenaphthene	<0.10 µg/l	<0.10 µg/l	< 0.10 µg/l	**0.213 µg/l**
	Pyrene	<0.10 µg/l	**0.17 µg/l**	< 0.10 µg/l	**0.222 µg/l**
	Anthracene	<0.10 µg/l	**0.224 µg/l**	< 0.10 µg/l	**0.151 µg/l**
	Fluorene	<0.10 µg/l	<0.10 µg/l	< 0.10 µg/l	**0.251 µg/l**
	Phenanthrene	<0.10 µg/l	**0.157 µg/l**	< 0.10 µg/l	**0.943 µg/l**
	Total PAH's	**<1.247 µg/l**	**<1.776 µg/l**	**<1.472 µg/l**	**< 3.727 µg/l**
19	Di(2-ethylhexyl)phthalate (DEHP)	<100 µg/l	< 100 µg/l	< 100 µg/l	< 100 µg/l
	Di-ethylphthalate	<20 µg/l	**23.2µg/l**	<20 µg/l	<20 µg/l
20	Isodrin	<13 ng/l	< 13 ng/l	< 13 ng/l	< 13 ng/l
21	Dieldrin	<12 ng/l	< 12 ng/l	< 12 ng/l	< 12 ng/l
22	Diuron	<0.20 µg/l	< 0.20 µg/l	< 0.20 µg/l	< 0.20 µg/l
23	Isoproturon	<0.20 µg/l	< 0.20 µg/l	< 0.20 µg/l	< 0.20 µg/l
24	Atrazine	<0.04 µg/l	< 0.04 µg/l	< 0.04 µg/l	< 0.04 µg/l
25	Simazine	<0.05 µg/l	< 0.05 µg/l	< 0.05 µg/l	< 0.05 µg/l
26	Glyphosate	**0.248 µg/l**	**0.344µg/l**	**0.159 µg/l**	**0.556 µg/l**
27	Mecoprop	<0.40 µg/l	< 0.40 µg/l	< 0.40 µg/l	< 0.40 µg/l
28	2,4-D	<0.50 µg/l	< 0.50 µg/l	< 0.50 µg/l	< 0.50 µg/l
29	MCPA	<0.50 µg/l	< 0.50 µg/l	< 0.50 µg/l	< 0.50 µg/l
30	Linuron	<0.20 µg/l	< 0.20 µg/l	< 0.20 µg/l	< 0.20 µg/l
31	Dichlobenil	< 9 ng/l	< 9 ng/l	< 9 ng/l	< 9 ng/l

No.	Compound	1372468 Dun Laoire West Pier	1372469 UCD FM 10 (Dodder)	1372243 Sutton Sump	1372244 Ringsend Main Lift
32	2,6-Dichlorobenzamide	N/A	N/A	N/A	N/A
	Diazinon	<0.012 µg/l	**0.028 µg/l**	<0.012 µg/l	<0.012 µg/l
	Dimethoate	<0.02 µg/l	<0.02 µg/l	<0.02 µg/l	<0.02 µg/l
33	PCB's (Sum of 7)	< 70 ng/l	< 70 ng/l	< 70 ng/l	< 70 ng/l
34	Phenols	**38.3 µg/l**	**92 µg/l**	**43.2 µg/l**	**58 µg/l**
34	m,p- Methylphenol	**58 µg/l**	**194 µg/l**	**111 µg/l**	**82 µg/l**
	o- Methylphenol	< 20 µg/l	< 20 µg/l	< 20.0 µg/l	< 20.0 µg/l
35	Lead	**7 µg/l**	< 6.0 µg/l	< 6.0 µg/l	< 6.0 µg/l
36	Arsenic	**1.4 µg/l**	**2.1 µg/l**	**< 1.0 µg/l**	**1.5 µg/l**
37	Copper	**43.2 µg/l**	**41.1 µg/l**	**45.6 µg/l**	**40.1 µg/l**
38	Zinc	**63 µg/l**	**98.6 µg/l**	**136 µg/l**	**99.4 µg/l**
39	Cadmium	<0.6 µg/l	< 0.6 µg/l	< 0.6 µg/l	< 0.6 µg/l
40	Mercury	N/A	N/A	N/A	N/A
41	Chromium	**3.3 µg/l**	**4.6 µg/l**	**3.7 µg/l**	**5 µg/l**
42	Selenium	< 0.8 µg/l	< 0.8 µg/l	< 0.8 µg/l	<0.8
43	Antimony	<1.2 µg/l	< 1.2 µg/l	< 1.2 µg/l	**1.5 µg/l**
44	Molybdenum	**4.7 µg/l**	**4.9 µg/l**	**8.5 µg/l**	**8.5 µg/l**
45	Tin (Total)	< 7.00 µg/l	< 7.00 µg/l	**11.2 µg/l**	**13.5 µg/l**
46	Barium	**21.4 µg/l**	**21.9 µg/l**	**37.5 µg/l**	**46.1 µg/l**
47	Boron	< 0.23 mg/l	< 0.23 mg/l	**0.25 mg/l**	**0.37 mg/l**
48	Cobalt	< 2.00 µg/l	< 2.00 µg/l	< 2.00 µg/l	**2.2 µg/l**
49	Vanadium	< 4.00 µg/l	< 4.00 µg/l	< 4.00 µg/l	< 4.00 µg/l
50	Nickel	**10.5 µg/l**	**14.3 µg/l**	**9.1 µg/l**	**10.1 µg/l**
51	Fluoride	0.575 mg/l	0.553 mg/l	0.467 mg/l	0.656 mg/l
52	Chloride	95 mg/l	67 mg/l	206 mg/l	776 mg/l
53	TOC	-	-	-	-
54	Cyanide	< 9 µg/l	< 9 µg/l	< 9 µg/l	< 9 µg/l
		(sample 1372466)	(sample 1372467)	(sample 1372236)	(sample 1372237)
55	Conductivity	737	750	1097	2684
56	Hardness (mg/l CaCO3)	-	-	-	-
57	pH	7.5	7.7	7.3	7.1

Appendix 7.7

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 149,776 cubic metres of leachate was received in 2017 as tabulated below:

Landfill Source	**Local Authority**	**Leachate Annual Volume 2017 (m^3)**	**Daily PE Load (using volume)**	**Daily % Influent PE Load**
Ballynagran (by tanker)	Wicklow County Council	20,775	293	0.014%
Kerdiffstown (by tanker)	Kildare County Council	11,114	136	0.007%
Bord Na Mona Drehid Landfill (by tanker)	Kildare County Council	13,597	166	0.009%
Rampere Landfill (by tanker)	Wicklow County Council	108	2	<0.0002%
Dunsink (to sewer)	Fingal County Council	104,182	1,269	0.069%
Total		**149,776**	**1,866**	**0.10%**

The daily leachate PE load represents **0.10%** of the average daily PE load in 2017 (1,825,541).

Appendix 7.8

Final Effluent Toxicity Assessment

A treated SBR effluent sample (1372174) taken on 05/12/17 from the Ringsend Plant was tested for aquatic toxicity by ENVA. See attached report.

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.

Client: Dublin City Council

Address:
Elbana House
68-70 Marrowbone Lane
Dublin 8

Customer Sample: Waste Water 06/12/17

Certificate Number: 171222175005
Date Received: 08/12/17
Lab ID: 1750005
Certificate Date: 22/12/17
Order Number: N/A

Test Date: 09/12/17

Aquatic Toxicity Test Results:

Test Parameters	Concentration % VoL/VoL	Toxic Units	95% Confidence Limits % VoL/VoL	Method Of Calculation
30 min EC_{50} to Vibrio fischeri	>100	<1	N/A	Microtox
48 HR EC50 to Brachionus Plicatillis	71.25%	1	68.01 – 89.37	Rotifer LC50 Calculation Programme

Test Methods:
ENVCM.137:Rotifer Brachionus plicatilis: Based on ASTM E1440-91
ENVCM136:Marine bacterium Vibtio fischeri: Based on ISO 11348-3:2007

Sample Information:

Sampled By:	Customer
Sampling Procedure	N/A
Lab ID	1750004
Date of Analysis	11/12/17
Storage Conditions	Frozen
Temperature	21.4
PH (at 25°C)	8.927
Dissolved Oxygen (mg/l)	2.34
Dissolved Oxygen (% Saturation)	26
Conductivity (µs/cm at 25°C)	3.00
Salinity (ppt at 20°C)	1.4

Reported By: Aoife O'Keeffe
(Laboratory Analyst)