



Attachment C.1: Discharges & Monitoring

Attachment C.1.1: Tabular Data on Discharge Points

Attachment C1.2: WwTP Treated Effluent and Primary Discharge results

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Waste Water Discharge Authorisation

Attachment C.1 – Discharges & Monitoring

Applicant Name:*

Irish Water – Cork Lower Harbour Agglomeration

Application I.D.:*

D0057

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SECTION C: DISCHARGES & MONITORING

This part of the application form collects information on the existing and proposed waste water discharges from the waste water works serving the agglomeration including proposed emission levels and monitoring results.

Section C.1 Discharges & Monitoring

Primary waste water discharge

Table C.1(a) - Primary waste water discharge (complete the table for existing and proposed primary discharge where relevant)

Existing & Proposed Primary Waste Water Discharge Combined Discharge Point						
EDEN Code (where applicable)	Unique Point Code	Discharge Location	Monitoring Location	Receiving Water Name	WFD Code Receiving Water	Type of Receiving Water
TPEFF0500D0057SW001	SW001	181358E, 062521N	17882E, 063448N	Cork Harbour	IE_SW_060_0000	Coastal

Proposed WwTP treated effluent Sampling location						
EDEN Code (where applicable)	Unique Point Code	Discharge Location	Monitoring Location	Receiving Water Name	WFD Code Receiving Water	Type of Receiving Water
TPEFF0500D0057SW100	SW100	181358E, 062521 - flows	175167E, 063788N - sampling of treated effluent from WwTP plant only, prior to IDA outfall/flows from downstream IED plants	Cork Harbour	IE_SW_060_0000	Coastal

Discharges Emission Levels and Monitoring SW100 – Treated effluent from WwTP							
Discharges					Monitoring		
Parameter	Units	Interim emission level (or Interim % Reduction)	Proposed emission level	Emission level commencement date	Monitoring Frequency	Sampling Method	Analysis method/Technique
pH	pH	-	6-9	-	Daily	Continuous	pH electrode meter with recorder
Flow	M3/24 hours	-	-	-	Continuous	Continuous	Online Flow probe meter with recorder
Suspended Solids	mg/l	-	35	-	Fortnightly	Composite	Standard sampling method
Carbonaceous Biochemical Oxygen Demand	mg/l	-	25	-	Fortnightly	Composite	Standard sampling method
Chemical Oxygen Demand - Cr	mg/l	-	125	-	Fortnightly	Composite	Standard sampling method
Dissolved Inorganic Nitrogen (DIN)	mg/l	-	45	-	Fortnightly	Composite	Standard sampling method

Discharges Emission Levels and Monitoring							
SW001 – Primary Discharge Point –combined Effluent Discharge Point							
Discharges					Monitoring		
Parameter	Units	Interim emission level (or Interim % Reduction)	Proposed emission level	Emission level commencement date	Monitoring Frequency	Sampling Method	Analysis method/Technique
Carbonaceous Biochemical Oxygen Demand	mg/l	-	245	-	Fortnightly	Composite	Standard sampling method
Dissolved Inorganic Nitrogen (DIN)	mg/l	-	95	-	Fortnightly	Composite	Standard sampling method

Effluent from the Shanbally WwTP is discharged to the harbour, using an IDA owned outfall, at Dog Nose Point. Several large industrial companies operating under individual licenses, discharge directly to this IDA outfall, downstream of the Shanbally WwTP discharge. Their flows are not, or will not be treated at the Shanbally WwTP and are not considered to be part of the agglomeration load entering the Shanbally WwTP. For this reason, a different set of ELVs are proposed for the discharge from the IDA outfall Pipe (SW001)

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Secondary Waste Water Discharge

Is a Secondary discharge associated with the agglomeration?	No
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If yes, complete the following table for each secondary waste water discharge.

Table C.1(b) - Secondary waste water discharge

Secondary Waste Water Discharge							
EDEN Code (where applicable)	Unique point Code	Discharge Location	Monitoring Location	Receiving Water Name	WFD Code Receiving Water	Type of Receiving Water	Decommissioning date if applicable
Not Applicable							

Discharges Emission Levels and Monitoring							
Discharges					Monitoring		
Parameter	Units	Interim emission level (or Interim % Reduction)	Proposed emission level	Emission level commencement date	Monitoring Frequency	Sampling Method	Analysis method/Technique
Not Applicable							

Waste water discharges from Stormwater Overflows

Are discharges from storm water overflows associated with the agglomeration?	Yes
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If yes, complete the following table for waste water discharges from storm water overflows.

Table C.1(c) - Storm Water Overflows (additional rows may be added as required)

Please note unique codes below are proposed and amended to ensure new discharge locations under D0057 receive a new unique code and that the existing licence codes as per Technical Amendment A to D0057-01 are maintained (note minor grid reference differences for existing licenced SWOs, SW010, SW011 & SW012 due to increased accuracy).

	Storm Water Overflow (SWO)							
EDEN Code (Where available)	Proposed Unique Code	Discharge Location (6E, 6N)	SWO Location (6E, 6N)	Location of SWO Device/Pump station Name	Name of Receiving Water	WFD Code Receiving Water	Compliant * (Y/N)	Decommissionin g date (where applicable)
Not Available	SW002	177453E, 066806N	177497E, 066814N	Rushbrooke Hotel Pumping Station, Cobh	Lough Mahon	IE_SW_060_0750	Y	Not Applicable
Not Available	SW003	177505E, 066569N	177574E, 066546N	Dock Cottages Pumping Station, Cobh	Lough Mahon	IE_SW_060_0750	Y	Not Applicable
Not Available	SW004	177865E, 065888N	177923E, 066043N	Dockyard Pumping Station, Cobh	Lough Mahon	IE_SW_060_0750	Y	Not Applicable

	Storm Water Overflow (SWO)							
EDEN Code (Where available)	Proposed Unique Code	Discharge Location (6E, 6N)	SWO Location (6E, 6N)	Location of SWO Device/Pump station Name	Name of Receiving Water	WFD Code Receiving Water	Compliant * (Y/N)	Decommissioning date (where applicable)
Not Available	SW005	178811E, 066054N	178744E, 066054N	Station Car Park Pumping Station, Cobh	Cork Harbour	IE_SW_060_0000	Y	Not Applicable
Not Available	SW006	180022E, 066397N	180022E, 066423N	Old Town Hall Pumping Station, Cobh	Cork Harbour	IE_SW_060_0000	Y	Not Applicable
Not Available	SW007	175621E, 069656N	175924E, 069346N	Cork Road Pumping Station, Passage West	Lough Mahon	IE_SW_060_0750	Y	Not Applicable
TPEFF0500D0057 SW008	SW008	175797E, 064930N	175830E, 064422N	Shanbally Pumping Station, Shanbally	Cork Harbour	IE_SW_060_0000	Y	Not Applicable
TPEFF0500D0057 SW009	SW009	174443E, 062603N	174403E, 062605N	Church Road PS (formerly Coolmore PS) Carrigaline	Owenboy Estuary	IE_SW_060_1200	Y	Not Applicable
TPEFF0500D0057 SW010	SW010	173154E, 062416N	173147E, 062474N	Old Waterpark Pumping Station, Carrigaline	Owenboy Estuary	IE_SW_060_1200	Y	Not Applicable
TPEFF0500D0057 SW011	SW011	173065E, 062347N	173076E, 062333N	Crosshaven Road Pumping Station, Carrigaline	Owenboy Estuary	IE_SW_060_1200	Y	Not Applicable

	Storm Water Overflow (SWO)							
EDEN Code (Where available)	Proposed Unique Code	Discharge Location (6E, 6N)	SWO Location (6E, 6N)	Location of SWO Device/Pump station Name	Name of Receiving Water	WFD Code Receiving Water	Compliant * (Y/N)	Decommissionin g date (where applicable)
TPEFF0500D0057 SW012	SW012	178818E, 061289N	178878E, 061213N	Crosshaven Pump Station 2	Owenboy Estuary	IE_SW_060_1200	Y	Not Applicable
TPEFF0500D0057 SW013	SW013	179639E, 061145N	179646E, 061047N	Crosshaven Pump station 1	Owenboy Estuary	IE_SW_060_1200	Y	Not Applicable
Not Available	SW014	176987E, 068828N	176946E, 068864N	Passage West Pumping Station, Passage West	Lough Mahon	IE_SW_060_0750	Y	Not Applicable
Not Available	SW015	177114E, 067734N	177109E, 067722N	Glenbrook Pumping Station, Glenbrook	Lough Mahon	IE_SW_060_0750	Y	Not Applicable
Not Available	SW016	177102E, 066103N	177072E, 066110N	Monkstown Pumping Station, Monkstown	Lough Mahon	IE_SW_060_0750	Y	Not Applicable
Not Available	SW017	176650E, 065473N	176647E, 065479N	Coast Road Pumping Station, Monkstown	Cork Harbour	IE_SW_060_0000	Y	Not Applicable
Not Available	SW018	178202E, 064724N	178152E, 064280N	Ringaskiddy Village Pumping Station	Cork Harbour	IE_SW_060_0000	Y	Not Applicable

Storm Water Overflow (SWO)								
EDEN Code (Where available)	Proposed Unique Code	Discharge Location (6E, 6N)	SWO Location (6E, 6N)	Location of SWO Device/Pump station Name	Name of Receiving Water	WFD Code Receiving Water	Compliant* (Y/N)	Decommissioning date (where applicable)
Not Available	SW019	175240E, 062837N	176081E, 063283N	Coolmore Cross Roads Pumping Station, Carrigaline	Owenboy Estuary	IE_SW_060_1200	Y	Not Applicable
Not Available	SW020	173315E, 062497N	173330E, 062502N	Network SWO, Carrigaline Town Park, Attenuation tank, Carrigaline	Owenboy Estuary through a man-made pond	IE_SW_060_1200	Y	Not Applicable
Not Available	SW021	172986E, 062329N	172972E, 062185N	Carrigaline	Owenboy Estuary	IE_SW_060_1200	Y	Not Applicable
Not Available	SW022	181358E, 062521N	175167E, 063766N	WWTP storm tank	Cork Harbour	IE_SW_060_0000	Y	Not Applicable
Not Available	SW023	179845E, 061439N	179860E, 61384N	Network SWO, Point Rd, Crosshaven	Owenboy Estuary	IE_SW_060_1200	Y	Not Applicable
Not Applicable	SW024	173154E, 062416N	173130E, 062481N	Network SWO, Old Waterpark, Carrigaline	Owenboy Estuary	IE_SW_060_1200	Y	Not Applicable

Storm Water Overflow (SWO)								
EDEN Code (Where available)	Proposed Unique Code	Discharge Location (6E, 6N)	SWO Location (6E, 6N)	Location of SWO Device/Pump station Name	Name of Receiving Water	WFD Code Receiving Water	Compliant * (Y/N)	Decommissionin g date (where applicable)
Not Available	SW025	173315E, 062497N	173332E, 062508N	Carrigaline Town Park PS, Carrigaline	Owenboy Estuary through a man-made pond	IE_SW_060_1200	Y	Not Applicable

* compliant with the criteria as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995

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Emergency Overflow Point(s)

Are discharges from emergency overflows associated with the agglomeration?	Yes
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If yes, complete the following table for waste water discharges from an emergency overflow.

Table C.1 (d) - Emergency Overflow (additional rows may be added as required)

Emergency Overflow Point					
Name of pumping station	Unique point code	Discharge Location (6E, 6N)	Emergency Overflow Location (6E, 6N)	Name of Receiving Water	WFD Code of Receiving Water
As per section C.1(c), there are 21 overflows which function as Dual Function Overflows associated with pumping stations (<i>i.e.</i> acts as a Storm Water or Emergency Overflow depending on the event). These are SW002-SW019 and SW021, SW023, SW025 inclusive.					

Waste water treatment plant monitoring data

In the case of an existing associated waste water treatment plant(s), provide a summary of the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application by completing the following table.

Table C.1(e) - Effluent monitoring results

TPEFF0500D0057SW001 – SW001 – Primary Discharge (combined sample (Jan-Nov 2021 results))									
Parameter:	pH	cBOD	COD	Suspended Solids	Ortho-phosphate (as P) - unspecified	Ammonia	Total Nitrogen	Total Oxidised Nitrogen (as N)	Total Phosphorus (as P)
Number of Samples:	24	24	24	24	24	24	24	24	24
Max result (mg/l):	8.1	380	1,418	1060	11.6	25.7	71.9	9.3	10.4
Min result (mg/l):	6.9	1.4	10.5	1.25	0.2	1.5	3.7	0.3	0.23
Average result (mg/l):	7.5	34.6	149.2	71.8	4.1	10.7	15.8	1.9	3.9
Number of exceedances of ELV: (Where applicable)	0	11	11	19	Not Applicable	Not Applicable	3	Not Applicable	Not Applicable
Overall compliance: (%)	100	54.2	54.2	20.8	Not Applicable	Not Applicable	87.5	Not Applicable	Not Applicable

TPEFF0500D0057SW100– SW1000 – Treated effluent from WwTP Results (Jan-Nov 2021 results)						
Parameter:	pH	cBOD	COD	Suspended Solids	Total Nitrogen	Total Phosphorus (as P)
Number of Samples:	24	24	24	24	24	24
Max result (mg/l):	7.9	20.0	84.0	18.0	44.3	8.2
Min result (mg/l):	7	1.4	10.9	1.3	3.7	0.2
Average result (mg/l):	7.4	5.6	43.4	6.2	12.5	3.0
Number of exceedances of ELV: (Where applicable)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Overall compliance: (%)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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Attachment C.1.2 2021 SW001 Primary Discharge & SW100 WwTP Effluent Results

Table 1; SW001 Primary Discharge monitoring results

Station Code	Date	Sampling Method	Ammonia-Total (as N) mg/l	BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	Chromium - unspecified µg/l	COD-Cr mg/l	Copper - unspecified µg/l	Di(2-ethylhexyl) phthalate (DEHP) µg/l	Lead - unspecified µg/l	Mercury - unspecified µg/l	ortho-Phosphate (as P) - unspecified mg/l	PCB 28 µg/l	PCB 118 µg/l	pH pH units	Suspended Solids mg/l	Total Nitrogen mg/l	Total Oxidised Nitrogen (as N) mg/l	Total Phosphorus (as P) mg/l	Zinc - unspecified µg/l
TPEFF0500D0057SW001	01/09/21	Grab	1.80	14.00		74.00					2.65			7.40	7.00	11.80	7.61	3.53	
TPEFF0500D0057SW001	03/02/21	Grab	7.00			259.00					2.06			7.50	103.00	10.90	0.80	2.76	
TPEFF0500D0057SW001	03/03/21	Grab	8.90	14.00		95.00					0.24			7.80	37.00	13.50	0.25	0.41	
TPEFF0500D0057SW001	04/08/21	24 hr composite	20.10	11.00		122.00					4.99			7.80	47.00	22.80	0.78	6.12	
TPEFF0500D0057SW001	06/01/21	Grab	21.70	139.00		503.00					2.48			7.50	352.00	27.80	0.25	4.48	
TPEFF0500D0057SW001	07/07/21	Grab	2.60	12.00		83.00					6.39			7.60	28.00	12.80	9.27	6.68	
TPEFF0500D0057SW001	09/06/21	Grab	2.60		2.00	89.00	10.64	0.17	1.30	0.25	4.39	0.01	0.01	8.00	29.00	7.60	3.61	4.74	109.00
TPEFF0500D0057SW001	11/11/21	24 hr composite	2.60	53.00		247.00					4.20			6.90	62.00	12.20	5.10	4.69	
TPEFF0500D0057SW001	12/05/21	Grab	13.10	29.00		79.00					4.84			7.50	37.00	15.20	0.25	5.40	
TPEFF0500D0057SW001	13/10/21	24 hr composite	9.00	19.00	0.50	487.00	3.00	0.01	0.50	0.25	1.85	0.01	0.01	7.60	75.00	16.40	4.24	2.34	32.00
TPEFF0500D0057SW001	14/04/21	24 hr composite	25.70	27.00		72.00					3.24			7.60	82.00	30.60	0.25	4.04	
TPEFF0500D0057SW001	15/09/21	24 hr composite	8.50	30.00		227.00					4.50			7.60	103.00	15.60	1.11	3.96	
TPEFF0500D0057SW001	17/02/21	24 hr composite	7.90	49.00		128.00					2.31			7.60	104.00	7.10	0.64	2.78	
TPEFF0500D0057SW001	18/03/21	Grab	13.80	11.00		134.00					2.66			7.90	27.00	17.80	0.94	3.13	
TPEFF0500D0057SW001	19/08/21	24 hr composite	6.30	360.00		824.00					7.53			7.20	228.00	16.10	0.88	10.44	
TPEFF0500D0057SW001	21/01/21	24 hr composite	6.00	21.00		99.00					0.54			7.60	33.00	9.10	0.90	1.18	
TPEFF0500D0057SW001	22/07/21	24 hr composite	10.90	94.00		93.00					0.91			7.40	250.00	18.20	3.97	1.40	
TPEFF0500D0057SW001	23/06/21	Grab	17.80	79.00		330.00					4.73			7.50	166.00	29.00		6.76	
TPEFF0500D0057SW001	24/02/21	24 hr composite		15.00															
TPEFF0500D0057SW001	24/11/21	Grab	14.80	21.00		91.00					5.62			7.60	104.00	19.70	1.29	6.54	
TPEFF0500D0057SW001	26/05/21	Grab	8.10	15.00		99.00					2.63			7.80	60.00	10.80	0.73	2.48	
TPEFF0500D0057SW001	26/08/21	Grab															1.09		
TPEFF0500D0057SW001	27/10/21	Grab	14.80	380.00		1,418.00					11.58			7.00	1,060.00	71.90	0.25	10.25	
TPEFF0500D0057SW001	28/04/21	24 hr composite	1.50	25.00		105.00					7.76			7.40	101.00	14.70	0.53	8.43	
TPEFF0500D0057SW001	29/09/21	Grab	9.70	17.00		55.00					1.97			8.10	36.00	13.60	0.87	2.35	
TPEFF0500D0057SW001	30/06/21	Grab		18.00															
TPEFF0500D0057SW001	31/03/21	Grab	20.92	43.00		289.00					8.14			7.50	99.00	26.60	1.01	8.38	
		Max	25.70	380.00	2.00	1418.00	10.64	0.17	1.30	0.25	11.58	0.01	0.01	8.10	1060.00	71.90	9.27	10.44	109.00
		Min	1.50	11.00	0.50	55.00	3.00	0.01	0.50	0.25	0.24	0.01	0.01	6.90	7.00	7.10	0.25	0.41	32.00
		Average	10.67	62.33	1.25	250.08	6.82	0.09	0.90	0.25	4.09	0.01	0.01	7.56	134.58	18.83	1.94	4.72	70.50
		No. of Samples	24	24	2	24	2	2	2	2	24	2	2	24	24	24	24	24	2

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Table 2; SW100 WwTP Treated Effluent Results

			BOD, 5 days with Inhibition (Carbonaceous BOD)	COD-Cr	pH	Suspended Solids	Total Nitrogen	Total Phosphorus (as P)
Station Code	Date	Sampling Method	mg/l	mg/l	pH units	mg/l	mg/l	mg/l
TPEFF0500D0057SW100	01/09/21	24 hr composite	7.30	57.00	7.00	9.00	7.30	2.98
TPEFF0500D0057SW100	03/02/21	24 hr composite	4.70	10.50	7.40	5.00	6.30	2.49
TPEFF0500D0057SW100	03/03/21	24 hr composite	2.60	29.00	7.70	3.00	7.60	0.63
TPEFF0500D0057SW100	04/08/21	24 hr composite	3.10	10.50	7.30	3.00	4.50	0.23
TPEFF0500D0057SW100	06/01/21	24 hr composite	3.90	48.00	7.60	3.00	11.80	1.74
TPEFF0500D0057SW100	07/07/21	24 hr composite	3.90	42.00	7.40	1.25	11.00	8.17
TPEFF0500D0057SW100	09/06/21	24 hr composite		36.00	7.20	1.25	13.10	6.20
TPEFF0500D0057SW100	11/11/21	24 hr composite	13.00	62.00	7.00	9.00	7.40	3.15
TPEFF0500D0057SW100	12/05/21	24 hr composite	1.60	42.00	7.60	4.00	12.80	2.48
TPEFF0500D0057SW100	13/10/21	24 hr composite	3.40	45.00	7.40	8.00	12.10	3.21
TPEFF0500D0057SW100	14/04/21	24 hr composite	5.90	10.50	7.50	8.00	44.30	0.25
TPEFF0500D0057SW100	15/09/21	24 hr composite	3.60	43.00	7.00	4.00	7.20	2.23
TPEFF0500D0057SW100	17/02/21	24 hr composite	10.00	49.00	7.50	3.00	12.10	2.71
TPEFF0500D0057SW100	18/03/21	24 hr composite	4.60	48.00	7.80	6.00	26.70	4.45
TPEFF0500D0057SW100	19/08/21	24 hr composite	20.00	80.00	7.00	18.00	25.90	6.81
TPEFF0500D0057SW100	21/01/21	24 hr composite	9.00	53.00	7.70	6.00	23.80	4.60
TPEFF0500D0057SW100	22/07/21	24 hr composite	3.70	84.00	7.50	7.00	6.80	5.50
TPEFF0500D0057SW100	23/06/21	24 hr composite	2.70	41.00		7.00	7.40	3.61
TPEFF0500D0057SW100	24/11/21	24 hr composite	6.90	37.00	7.30	8.00	3.70	0.31
TPEFF0500D0057SW100	26/05/21	24 hr composite	5.70	43.00	7.90	8.00	9.90	3.44
TPEFF0500D0057SW100	27/10/21	24 hr composite	1.40	41.00	7.10	9.00	9.50	2.99
TPEFF0500D0057SW100	28/04/21	24 hr composite	5.70	42.00	7.40	10.00	6.60	0.28
TPEFF0500D0057SW100	29/09/21	24 hr composite	7.00	55.00	7.20	5.00	14.50	0.46
TPEFF0500D0057SW100	30/06/21	24 hr composite	2.60		7.30			
TPEFF0500D0057SW100	31/03/21	24 hr composite	3.00	34.00	7.30	4.00	6.60	3.08
		Max	20.00	84.00	7.90	18.00	44.30	8.17
		Min	1.40	10.50	7.00	1.25	3.70	0.23
		Average	5.64	43.44	7.38	6.23	12.45	3.00
		No. of Samples	24	24	24	24	24	24