



**Section D:**

**IMPACT ASSESSMENT**

## **ATTACHMENT D.1**

### **Ballycotton Bay Ambient Water Quality Data**

# Attachement D.1 Water Quality Monitoring Results

## CW05003148BT1001 – Ballycotton Ambient

WaterbodyName	MonitoringStationCode	SampleDate	ParameterName	ParameterUnit ShortCode	Result	ResultString	LimitOf Detection	ReportResult	ReportTextResult
Ballycotton Bay	CW05003148BT1001	05/07/2017	Ammonia-Total (as N)	mg/l	0.046		0	0.046	
Ballycotton Bay	CW05003148BT1001	03/07/2019	Ammonia-Total (as N)	mg/l	0.041		0	0.041	
Ballycotton Bay	CW05003148BT1001	09/05/2018	Ammonia-Total (as N)	mg/l		<0.035	0	0.0175	<0.035
Ballycotton Bay	CW05003148BT1001	05/05/2021	Ammonia-Total (as N)	mg/l		<0.035	0	0.0175	<0.035
Ballycotton Bay	CW05003148BT1001	10/05/2017	Ammonia-Total (as N)	mg/l	0.033		0	0.033	
Ballycotton Bay	CW05003148BT1001	04/07/2018	Ammonia-Total (as N)	mg/l	0.15		0	0.15	
Ballycotton Bay	CW05003148BT1001	26/05/2016	Ammonia-Total (as N)	mg/l	0.074		0	0.074	
Ballycotton Bay	CW05003148BT1001	06/07/2016	Ammonia-Total (as N)	mg/l	0.044		0	0.044	
Ballycotton Bay	CW05003148BT1001	01/05/2019	Ammonia-Total (as N)	mg/l		<0.035	0	0.0175	<0.035
Ballycotton Bay	CW05003148BT1001	13/05/2020	Ammonia-Total (as N)	mg/l		<0.035	0	0.0175	<0.035
Ballycotton Bay	CW05003148BT1001	08/07/2020	Ammonia-Total (as N)	mg/l		<0.035	0	0.0175	<0.035
Ballycotton Bay	CW05003148BT1001	13/05/2020	BOD - 5 days (Total)	mg/l	3		1	3	
Ballycotton Bay	CW05003148BT1001	26/05/2016	BOD - 5 days (Total)	mg/l	1.4		1	1.4	
Ballycotton Bay	CW05003148BT1001	06/07/2016	BOD - 5 days (Total)	mg/l	2.8		1	2.8	
Ballycotton Bay	CW05003148BT1001	04/07/2018	BOD - 5 days (Total)	mg/l	1.8		1	1.8	
Ballycotton Bay	CW05003148BT1001	01/05/2019	BOD - 5 days (Total)	mg/l	1.4		1	1.4	
Ballycotton Bay	CW05003148BT1001	03/07/2019	BOD - 5 days (Total)	mg/l	1		1	1	
Ballycotton Bay	CW05003148BT1001	08/07/2020	BOD - 5 days (Total)	mg/l		<1.0	1	0.5	<1.0
Ballycotton Bay	CW05003148BT1001	10/05/2017	BOD - 5 days (Total)	mg/l	2.7		1	2.7	
Ballycotton Bay	CW05003148BT1001	05/07/2017	BOD - 5 days (Total)	mg/l	1.2		1	1.2	
Ballycotton Bay	CW05003148BT1001	09/05/2018	BOD - 5 days (Total)	mg/l	1.6		1	1.6	
Ballycotton Bay	CW05003148BT1001	05/05/2021	BOD - 5 days (Total)	mg/l		<1.0	1	0.5	<1.0
Ballycotton Bay	CW05003148BT1001	06/07/2016	Dissolved Oxygen	% Saturation	105.2		0	105.2	
Ballycotton Bay	CW05003148BT1001	10/05/2017	Dissolved Oxygen	% Saturation	104		0	104	
Ballycotton Bay	CW05003148BT1001	05/07/2017	Dissolved Oxygen	% Saturation	99.2		0	99.2	
Ballycotton Bay	CW05003148BT1001	04/07/2018	Dissolved Oxygen	% Saturation	103.7		0	103.7	
Ballycotton Bay	CW05003148BT1001	09/05/2018	Dissolved Oxygen	% Saturation	109		0	109	
Ballycotton Bay	CW05003148BT1001	13/05/2020	Dissolved Oxygen	% Saturation	101.4		0	101.4	
Ballycotton Bay	CW05003148BT1001	01/05/2019	Dissolved Oxygen	% Saturation	103.9		0	103.9	
Ballycotton Bay	CW05003148BT1001	03/07/2019	Dissolved Oxygen	% Saturation	102.3		0	102.3	
Ballycotton Bay	CW05003148BT1001	08/07/2020	Dissolved Oxygen	% Saturation	97.3		0	97.3	
Ballycotton Bay	CW05003148BT1001	05/05/2021	Dissolved Oxygen	% Saturation	99.8		0	99.8	
Ballycotton Bay	CW05003148BT1001	06/07/2016	E. Coli	MPN/100ml	2		0	2	
Ballycotton Bay	CW05003148BT1001	26/05/2016	E. Coli	MPN/100ml	1		0	1	
Ballycotton Bay	CW05003148BT1001	05/07/2017	E. Coli	cfu/100ml	7		0	7	
Ballycotton Bay	CW05003148BT1001	04/07/2018	E. Coli	cfu/100ml		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	13/05/2020	E. Coli	no./100mls	602		0	602	
Ballycotton Bay	CW05003148BT1001	09/05/2018	E. Coli	cfu/100ml	20		0	20	
Ballycotton Bay	CW05003148BT1001	03/07/2019	E. Coli	no./100mls	10		0	10	
Ballycotton Bay	CW05003148BT1001	10/05/2017	E. Coli	cfu/100ml		>60	0	60	>60
Ballycotton Bay	CW05003148BT1001	01/05/2019	E. Coli	no./100mls		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	08/07/2020	E. Coli	no./100mls	10		0	10	
Ballycotton Bay	CW05003148BT1001	05/05/2021	E. Coli	no./100mls		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	06/07/2016	Enterococci (Intestinal)	cfu/100ml	80		0	80	
Ballycotton Bay	CW05003148BT1001	13/05/2020	Enterococci (Intestinal)	no./100mls	160		0	160	
Ballycotton Bay	CW05003148BT1001	08/07/2020	Enterococci (Intestinal)	no./100mls		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	05/07/2017	Enterococci (Intestinal)	cfu/100ml	0		0	0	
Ballycotton Bay	CW05003148BT1001	05/05/2021	Enterococci (Intestinal)	no./100mls		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	26/05/2016	Enterococci (Intestinal)	cfu/100ml	0		0	0	
Ballycotton Bay	CW05003148BT1001	04/07/2018	Enterococci (Intestinal)	cfu/100ml		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	03/07/2019	Enterococci (Intestinal)	no./100mls		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	10/05/2017	Enterococci (Intestinal)	cfu/100ml	21		0	21	
Ballycotton Bay	CW05003148BT1001	09/05/2018	Enterococci (Intestinal)	cfu/100ml		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	01/05/2019	Enterococci (Intestinal)	no./100mls		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	05/07/2017	Faecal coliforms	cfu/100ml	7		0	7	
Ballycotton Bay	CW05003148BT1001	04/07/2018	Faecal coliforms	cfu/100ml		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	01/05/2019	Faecal coliforms	no./100mls	31		0	31	
Ballycotton Bay	CW05003148BT1001	06/07/2016	Faecal coliforms	no./100mls	240		0	240	
Ballycotton Bay	CW05003148BT1001	10/05/2017	Faecal coliforms	cfu/100ml	60		0	60	
Ballycotton Bay	CW05003148BT1001	09/05/2018	Faecal coliforms	cfu/100ml	41		0	41	
Ballycotton Bay	CW05003148BT1001	03/07/2019	Faecal coliforms	no./100mls	41		0	41	
Ballycotton Bay	CW05003148BT1001	13/05/2020	Faecal coliforms	no./100mls	2064		0	2064	
Ballycotton Bay	CW05003148BT1001	08/07/2020	Faecal coliforms	no./100mls	52		0	52	
Ballycotton Bay	CW05003148BT1001	05/05/2021	Faecal coliforms	no./100mls		<10	0	5	<10
Ballycotton Bay	CW05003148BT1001	10/05/2017	ortho-Phosphate (as P) - u	mg/l	0.025		0	0.025	
Ballycotton Bay	CW05003148BT1001	09/05/2018	ortho-Phosphate (as P) - u	mg/l		<0.01	0	0.005	<0.01
Ballycotton Bay	CW05003148BT1001	10/05/2017	pH	pH units	7.9		2	7.9	
Ballycotton Bay	CW05003148BT1001	04/07/2018	pH	pH units	8.2		2	8.2	
Ballycotton Bay	CW05003148BT1001	08/07/2020	pH	pH units	7.9		2	7.9	
Ballycotton Bay	CW05003148BT1001	05/07/2017	pH	pH units	8.1		2	8.1	
Ballycotton Bay	CW05003148BT1001	06/07/2016	pH	pH units	8.2		2	8.2	
Ballycotton Bay	CW05003148BT1001	03/07/2019	pH	pH units	8.1		2	8.1	
Ballycotton Bay	CW05003148BT1001	05/05/2021	pH	pH units	8		2	8	
Ballycotton Bay	CW05003148BT1001	26/05/2016	pH	pH units	8.1		2	8.1	
Ballycotton Bay	CW05003148BT1001	09/05/2018	pH	pH units	8		2	8	
Ballycotton Bay	CW05003148BT1001	01/05/2019	pH	pH units	8.1		2	8.1	
Ballycotton Bay	CW05003148BT1001	13/05/2020	pH	pH units	8.1		2	8.1	
Ballycotton Bay	CW05003148BT1001	06/07/2016	Temperature	°C	13.6		0	13.6	
Ballycotton Bay	CW05003148BT1001	09/05/2018	Temperature	°C	12.2		0	12.2	
Ballycotton Bay	CW05003148BT1001	04/07/2018	Temperature	°C	19.6		0	19.6	
Ballycotton Bay	CW05003148BT1001	05/05/2021	Temperature	°C	10.1		0	10.1	
Ballycotton Bay	CW05003148BT1001	01/05/2019	Temperature	°C	11.1		0	11.1	
Ballycotton Bay	CW05003148BT1001	03/07/2019	Temperature	°C	17.2		0	17.2	
Ballycotton Bay	CW05003148BT1001	08/07/2020	Temperature	°C	12.2		0	12.2	
Ballycotton Bay	CW05003148BT1001	05/07/2017	Temperature	°C	17.9		0	17.9	

Ballycotton Bay	CW05003148BT1001	10/05/2017	Temperature	°C	13.8		0	13.8	
Ballycotton Bay	CW05003148BT1001	13/05/2020	Temperature	°C	12.5		0	12.5	
Ballycotton Bay	CW05003148BT1001	03/07/2019	Total Nitrogen	mg/l		<0.50	0	0.25	<0.50
Ballycotton Bay	CW05003148BT1001	13/05/2020	Total Nitrogen	mg/l	0.6		0	0.6	
Ballycotton Bay	CW05003148BT1001	06/07/2016	Total Nitrogen	mg/l	0.55		0	0.55	
Ballycotton Bay	CW05003148BT1001	26/05/2016	Total Nitrogen	mg/l	0.38		0	0.38	
Ballycotton Bay	CW05003148BT1001	05/07/2017	Total Nitrogen	mg/l	0.39		0	0.39	
Ballycotton Bay	CW05003148BT1001	08/07/2020	Total Nitrogen	mg/l	0.5		0	0.5	
Ballycotton Bay	CW05003148BT1001	04/07/2018	Total Nitrogen	mg/l		<0.50	0	0.25	<0.50
Ballycotton Bay	CW05003148BT1001	01/05/2019	Total Nitrogen	mg/l		<0.50	0	0.25	<0.50
Ballycotton Bay	CW05003148BT1001	10/05/2017	Total Nitrogen	mg/l	0.45		0	0.45	
Ballycotton Bay	CW05003148BT1001	09/05/2018	Total Nitrogen	mg/l	1.01		0	1.01	
Ballycotton Bay	CW05003148BT1001	05/05/2021	Total Nitrogen	mg/l		<0.50	0	0.25	<0.50
Ballycotton Bay	CW05003148BT1001	06/07/2016	Total Oxidised Nitrogen (a	mg/l	0.032		0	0.032	
Ballycotton Bay	CW05003148BT1001	26/05/2016	Total Oxidised Nitrogen (a	mg/l	0.036		0	0.036	
Ballycotton Bay	CW05003148BT1001	09/05/2018	Total Oxidised Nitrogen (a	mg/l	0.72		0	0.72	

## **ATTACHMENT D.2.1**

# **Impact Assessment Report**

## ATTACHMENT D.2.1: Impact Assessment Report

### 1. Introduction

This Report provides a summary of the Impact Assessment, prepared to determine the impact of the discharges from the Ballycotton agglomeration on the receiving waterbody (Ballycotton Bay IE\_SW\_040\_0000) once the proposed upgrade to the Ballycotton Sewerage Scheme becomes operational.

This report also addresses the criteria as outlined in **Section D.2** of the EPA guidance document.

Currently wastewater is collected in Ballycotton's public sewer network and is discharged through two existing outfalls to Ballycotton Bay with little or no treatment. By eliminating the discharge of untreated wastewater into Ballycotton Bay, the proposed Ballycotton Sewerage Scheme will improve the water quality in Ballycotton Bay in relation to environmental quality standards and WFD status and will comply with the Urban Wastewater Treatment Directive by providing primary treatment.

The proposed Ballycotton Waste Water Treatment Plant (WwTP) will provide primary treatment of wastewater, with treated effluent quality achieving the emission limit values set out below in accordance with the existing wastewater discharge licence (no. D0516-01) and the Urban Wastewater Treatment Directive.

Parameter	Units	Emission Limit Value
CBOD	mg/l	20% reduction
Suspended Solids	mg/l	50% reduction

### 2. Water Environment

The primary discharge from the proposed Ballycotton WwTP will be to Ballycotton Bay (coastal waterbody, WFD code IE\_SW\_040\_0000). The primary discharge will be via an existing marine outfall (SW004). The EU Water Framework Directive (WFD) has established a Framework for the protection, improvement and management of surface water and groundwaters. The EPA website ([www.epa.ie](http://www.epa.ie)) indicated that Ballycotton Bay was classified as "Not at risk" in accordance with the WFD 2013-2018 Risk Status and the ecological status is noted as "Good" (2013-2018).

The WFD objective for Ballycotton Bay is to achieve "Good" status by 2027.

Ballycotton Bay has not been identified as a significant pressure and does not have high ecological status objectives.

Recent ambient monitoring data (2019-2022) for Ballycotton Bay is shown in the table below. The data presented below is based on chemistry monitoring data for Ballycotton Bay (downloaded from [Catchments.ie](http://Catchments.ie) 31/05/22) <sup>(3)</sup>. Comparison with the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. No. 77 of 2019) (SWR) is also shown below.

Parameter	BOD (mg/l)	Dissolved Oxygen (% Saturated)	Dissolved Inorganic Nitrogen (mg/l)
Number of Samples	5	6	6

Parameter	BOD (mg/l)	Dissolved Oxygen (% Saturated)	Dissolved Inorganic Nitrogen (mg/l)
Max result	3.3	107.7	1.6
Min result	0.5	97.3	0.018
Median Value	-	-	0.083
Mean Value	1.34	102.07	-
95%ile Value	2.92	106.75	-
EQS High Status as per S.I. No. 77/2019	Not Applicable	95%ile Lower limit >80-85% Upper limit <115-120%	≤0.585 <sup>(2)</sup>
EQS Good Status as per S.I. No. 77/2019	Not Applicable	95%ile Lower limit >70-80% Upper limit <120-130%	≤1.425 <sup>(2)</sup>
Overall compliance with relevant EQS High Status	Not applicable	Yes	Yes

Table D.2.1.1 – Ambient Monitoring Data – Ballycotton Bay

Note 1: Where data was reported as less than the limit of detection, LOD/2 was applied

Note 2: In the absence of salinity level data, the DIN EQS has been taken as the median value in accordance with S.I. No 77 of 2019

In coastal waters, the main physico-chemical elements assessed are dissolved oxygen (DO) and nitrogen (as dissolved inorganic nitrogen (DIN)).

The monitoring data presented in Table D.2.1.1 above indicates that the waters of Ballycotton Bay met the “High status” environmental quality standards set out in the SWR in the period 2019-2022.

Compliance limits for BOD<sub>5</sub> in the water body are not stipulated in the SWR for coastal water bodies. For information purposes, the concentrations of BOD<sub>5</sub> have been assessed against the limits as set in the SWR for transitional waters to achieve good/high status, as this would represent the most similar waterbody class. In the above assessment, the ambient water quality monitoring indicates high status under the SWR.

The existing Waste Water Discharge Licence for the Ballycotton agglomeration (no. D0516-01) includes Schedule C.1: Specified Improvement Programme where the specified improvement is described as “Construct a new primary waste water treatment plant to include inlet screens and appropriately sized primary settlement capacity”. Schedule C.2: Discharges to be Discontinued includes the secondary discharge point SW002.

The proposed Ballycotton WwTP will provide inlet screens and primary treatment of wastewater, with treated effluent quality achieving 20% reduction in BOD and 50% reduction in Suspended Solids and it will also eliminate the discharge of untreated waste water at SW001 and SW002 (existing WWDL codes). The Ballycotton WwTP will be operational as of Q4 2024. Both of the foregoing will result in a betterment of the water quality within Ballycotton Bay and support the objective of the waters continuing to meet the “High Status” standard in accordance with the European Union Environmental Objectives (Surface Waters) Regulations 2009-2019.

There are several SPAs and SACs within a 15km radius of the proposed sewerage scheme. These are as follows:

- Ballycotton Bay Special Protection Area (SPA 004022), located within 70m of the discharge point.
- Ballymacoda Bay Special Protection Area (SPA 004023), located approximately 10km from the subject site when measured as a straight line and 14km when measured along an aqueous pathway by the coastline.
- Ballymacoda Bay Special Area of Conservation (SAC 000077), located over 8km from the subject site when measured as a straight line and approximately 14km when measured along an aqueous pathway by the coastline.
- Cork Harbour Special Protection Area (SPA 004030), located over 11km from the subject site when measured as a straight line and approximately 23km when measured along an aqueous pathway by the coastline.
- Great Island Channel Special Area of Conservation (SAC 001058), located approximately 12km from the subject site when measured as a straight line and approximately 31km when measured along an aqueous pathway by the coastline.

Of the five sites listed above as being within 15km of the subject site, the nearest hydrologically connected designated site is Ballycotton Bay Special Protection Area (SPA 004022) which is located within 70m of the WWTP primary discharge point (SW004), the WWTP combined emergency/stormwater overflow (SW005) and the Cow Pumping Station combined emergency/stormwater overflow (SW007).

As stated in the Site Synopsis for SPA 004022, “The inter tidal flats provide the main feeding habitat for the wintering birds. Salt marshes fringe the flats in the sheltered inlets and these provide high tides roosts”

The proposed development will not result in any loss of habitat within SPA 004022, nor will it have any significant impact on the availability of open ground on which wading birds could roost at high tide. It is considered that significant impacts on the Features of Interests of the SPA arising from habitat loss can be screened out.

Please refer to Section 4 of this impact assessment for further information on potential impacts on nearby European Sites.

There are no designated nutrient sensitive areas or candidate nutrient sensitive areas in Ballycotton Bay under the Urban Waste Water Treatment Regulations, 2001, as amended.

### 3. Water Quality

The proposed Ballycotton WwTP will provide primary treatment of wastewater, with treatment effluent quality achieving 20% reduction in BOD and 50% reduction in Suspended Solids.

As noted in section 1 of this Impact Assessment Report, wastewater in the Ballycotton agglomeration is currently discharged untreated to Ballycotton Bay via two separate outfalls which serve two separate wastewater networks.

As part of the proposed Ballycotton Sewerage Scheme, the two existing wastewater networks will be rerouted to the proposed WwTP which will provide primary treatment before discharging treated effluent via a single marine outfall (SW004). Therefore, once the proposed sewerage scheme is operational, the quantity of BOD and Suspended Solids being discharged to Ballycotton Bay from the



agglomeration will be reduced. However, as (SW004) will now be serving a larger population equivalent, an increased level in BOD and Suspended Solids will occur at SW004 locally.

Based on predicted 10-year design PE, the overall BOD discharge to Ballycotton Bay will reduce from 60.8kg/d (2016) to 51.9kg/d (2026) and the discharge at the primary discharge (SW004) will increase from 30.4kg/d (2016) to 51.9kg/d (2026).

The above assessment is based on a BOD loading of 60g/person/day in accordance with the Urban Waste Water Treatment Regulations 2001 as amended.

Based on predicted 10-year design PE, the overall suspended solids discharge to Ballycotton Bay will reduce from 28.9kg/d (2016) to 15.4kg/d (2026) and the discharge at the primary discharge (SW004) will increase from 14.5kg/d (2016) to 15.4kg/d (2026).

The above assessment is based on a suspended solids loading of 163mg/l (mean domestic loading) in accordance with EPA Wastewater Treatment Manuals – Treatment Systems for Small Communities, Business, Leisure Centres and Hotels and a consumption rate of 175l/person/day in accordance with Irish Water technical guidance document IW-TEC-700-99-02 Inlet Works and stormwater treatment (wastewater).

The BOD and Suspended Solids water quality assessment is summarised in Table D.2.1.2 below.

	BOD	SS
Loading	60 g/PE/Day	70 g/PE/Day
Current PE (2016)	1014	
Future PE (2026)	1082	
<b>Total Agglomeration</b>		
Current Load	60.84 kg/Day	70.98 kg/Day
Future Load*	51.94 kg/Day	37.87 kg/Day
<b>Primary Discharge Point</b>		
Current Load	30.42 kg/Day	35.49 kg/Day
Future Load*	51.94 kg/Day	37.87 kg/Day
*Future Loading calculation above considers a reduction in BOD of 20% and a reduction in SS of 50%		

Table D.2.1.2 – Ballycotton Bay BOD and Suspended Solids Assessment

The most recent EPA data notes that Ballycotton Bay was classified as “*Not at risk*” in accordance with the WFD 2013-2018 Risk Status and the ecological status is noted as “good” (2013-2018). This indicates that the existing wastewater discharges were not having sufficient impact on water quality to affect the “good” status of Ballycotton Bay. The proposed Ballycotton WwTP will reduce the overall quantity of BOD and Suspended Solids to Ballycotton Bay at operational phase of the project and therefore will not have any negative effects in relation to water quality.

#### 4. Screening for Appropriate Assessment

A Screening for Appropriate Assessment in relation to the discharge of treated effluent from the Ballycotton WwTP and pumping stations, including stormwater overflows and emergency overflows, has been carried out and concluded that “overall no significant adverse effects are foreseen and indeed, a slight positive effect is possible. The Screening for AA Report is included with this application as **Attachment D.2-2**.”

On the basis of the information set out, and documentation referenced in the AA Screening Report, it can be excluded beyond reasonable scientific doubt, in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European sites, that the proposed operational discharges from the new Ballycotton Waste Water Treatment Works, individually or in combination with other plans and projects, would be likely to have a significant effect on any European site. It is acknowledged however that it is the EPA, as the Competent Authority, who will formally conduct the formal AA screening process as part of their determination of this WWDA application.

## 5. Environmental Impact Assessment (EIA) Screening

An Environmental Impact Assessment (EIA) Screening Report has prepared in relation to the construction and operational stages of the proposed Ballycotton Sewerage Scheme, to form an opinion as to whether or not the proposed activities from the Scheme should be subject to Environmental Impact Assessment (EIA) and if so, whether an Environmental Impact Assessment Report (EIAR) should be prepared in respect of it. Refer to **Attachment B.5** for a copy of the EIA Screening Report.

The Ballycotton Sewerage Scheme EIA Screening Report concluded the following;

*'It is submitted that the proposed Scheme does not come within the classes of development that European and Irish legislation identify as being likely to have significant effects on the environment, as set out in Part 1 or Part 2 of Schedule 5 of the Planning and Development Regulations 2001-2017. As the proposed Scheme does not come within the specified classes, there is no mandatory requirement for an EIA for the proposed Scheme. In addition to the above, a sub threshold assessment has been undertaken. The potential for impacts has been identified, both positive and negative but none that would be likely to have significant effects on the environment.'*

## 6. Bathing Waters

The nearest designated bathing waters are at Garryvoe approximately 2.5km north of the proposed works area. Current EPA water quality results indicate that the water at Garryvoe Beach is of 'sufficient' quality based on the three-year assessment period 2018 to 2021.

Cork County Council has taken a total of 8no samples at Garryvoe during the 2022 bathing season. Of these 8no samples, 7no samples were noted as being 'excellent' while the remaining 1no sample was determined to be 'good'.

The proposed Ballycotton WwTP will provide primary treatment of wastewater, with treated effluent quality achieving 20% reduction in BOD and 50% reduction in Suspended Solids. The reduction in Suspended Solids will result in a decrease in pathogens in the discharge and will therefore not have any negative effects on the bathing water quality at Garryvoe.

## 7. Shellfish Waters

The nearest designated shellfish area is at Ballymacoda Bay located over 9km from the subject site.

The proposed Ballycotton WwTP will provide primary treatment of wastewater, with treated effluent quality achieving 20% reduction BOD and 50% reduction Suspended Solids. The reduction in Suspended Solids will result in a decrease in pathogens in the discharge and will therefore not have any negative effects on the water quality at Ballymacoda.

## 8. Priority Substance Assessment

A priority substance assessment has been carried out to identify substances which are likely to be emitted from the agglomeration to the receiving water. The assessment is included in **Appendix A** of this Impact Assessment Report.

## 9. Combined Approach

The Waste Water Discharge Authorisation under the European Union (Waste Water Discharge) Regulations 2007 to 2020, specify that a 'combined approach' in relation to licensing of waste water works must be taken, whereby the emission limits for the discharge are established on the basis of the stricter of either or both, the limits and controls required under the Urban Waste Water Treatment Regulations, 2001, as amended, and the limits determined under Statute or Directive for the purpose of achieving the environmental objectives established for surface waters, groundwater or protected areas for the waterbody into which the discharge is made.

The treated effluent discharge standards for the new WwTP will comply with the requirements for primary treatment with a 20% reduction in BOD and a 50% reduction in suspended solids. In addition, they will give effect to the principle of the Combined Approach as defined in Waste Water Discharge (Authorisation) Regulations, 2007 to 2020 in that they accommodate the Urban Waste Water Regulations and the relevant status/designations of the receiving waterbody, Ballycotton Bay.

## 10. Compliance with Relevant National or EU Legislation

The proposed Ballycotton WwTP has been designed to ensure that the emissions from the agglomeration will comply with, and will not result in the contravention of, EU Legislation and National Regulations.

The current WFD Ecological Status of Ballycotton Bay is "good" and the WFD risk status is "not at risk". Regarding in-combination impacts and associated effects, it is envisaged that the improvement in the effluent discharges from the proposed Ballycotton Sewerage Scheme, will have a net positive impact on Ballycotton Bay in terms of assisting it to maintain Good WFD Status for this coastal waterbody. Any improvement in the aquatic environment will have a beneficial impact on the water dependent qualifying features of Ballycotton Bay SPA and all other European sites within the zone of influence of the proposed activity.

Please refer to **Attachment B.6-Compliance with EU Directives and National Regulations** for further information.

## 11. Mixing zone or transitional areas of exceedance

The EPA publication '*EO Regulations Review, Simple Assimilative Capacity Model for Lakes and Coastal Water*' presents a simple model for carrying out assimilative capacity in lakes and coastal waters. This Assimilative Capacity Model has been applied here to determine the number of dilutions which will be achieved at a given distance from the primary discharge point (SW003).

The calculation for the available dilutions is as follows:

$$D = \frac{8930b}{F}$$

where:

b = average depth of the receiving water (m)

F = Maximum hourly flow rate of the discharge (m<sup>3</sup>/hr)

In order to estimate the available dilutions, the average depth of the receiving waters of the mixing zone over a distance of 100m from the discharge point is required. Based on available bathymetry and tidal data, the average depth of the receiving waters over a distance of 100m for the discharge point was determined to be 2.747m (b).

The maximum hourly flow rate from the proposed WwTP is 86.8m<sup>3</sup>/h.

This results in a dilution value (D) of 283. Irish Waters Technical Standards for Marine Modelling (Document Number IW-TEC-100-015) requires a minimum of 100 initial dilutions for new primary treated effluent discharges. As such the calculated 283 is considered more than adequate.

Based on the above calculated dilution and the background water quality data in Ballycotton Bay, the resulting concentrations of BOD<sub>5</sub> and DIN in the receiving water (near field) have been calculated as:

- BOD<sub>5</sub> - 2.18mg/l (<3.0mg/l limit for high status water quality)
- DIN - 0.56mg/l (<0.585mg/l limit for high status water quality).

Therefore, the discharge effluent will not impact on the ability of the receiving water to maintain its current "good" status and in fact, would allow compliance with "high" status.

## 12. Cumulative and In Combination Effects

The Appropriate Assessment Screening Report addresses combination effects. Refer to **Attachments D.2.2**

## 13. Dilutions and retention times for lakes

Not applicable. No discharges to lakes.

## 14. The impact of the discharges on any environmental media other than those into which the emissions are to be made

Not applicable. No other relevant media into which the emissions are to be made.

## 15. Groundwater Details

Not applicable. No discharge to ground waters.

## 16. High Status Waterbodies

No High Status water bodies are downstream of the operational discharges.

## 17. Fresh Water Pearl Mussels

Not applicable. No Fresh Water Pearl Mussels within the region of the primary discharge point

18. For waste water treatment plants with coastal discharges, provide evidence that the end of the discharge pipe is below the mean spring tide low water line

A primary discharge outfall long section is included in **Attachment D.2-1**. The long section demonstrates that the WwTP will discharge treated effluent to Ballycotton Bay via the primary discharge point (SW004) below the mean low water springs level.

Please note that maintenance works will be carried out on the outfall on behalf of Irish Water prior to the operational stage of the Ballycotton sewerage scheme to ensure that the discharge point is in accordance with the levels noted on the long section referenced above and to repair any damage to the outfall pipe. The maintenance works are required in accordance with the Ballycotton Foreshore Licence (November 1953) which states that the outfall is to be kept '*in a good and proper state of repair and condition to the satisfaction of the Department of the Environment, Community and Local Government*'.

## 19. Data Sources

The following data sources were used to complete this application.

- Online data available or held by the NPWS, the EPA, NIEA and Irish Water:
  - [www.npws.ie](http://www.npws.ie)
  - [epawebapp.epa.ie](http://epawebapp.epa.ie)
  - [gis.epa.ie/EPAMaps](http://gis.epa.ie/EPAMaps)
  - [catchments.ie](http://catchments.ie)
- Irish Water/Cork County Council Monitoring & Sampling Data

## Appendix A – Priority Substance Assessment

### Ballycotton Sewerage Scheme – Priority Substances Assessment

#### Introduction

This assessment has been prepared for the Ballycotton agglomeration in County Cork to inform the review application of the existing wastewater discharge licence (D0516-01).

Ballycotton is a village in east Cork located approx. 18km southeast of Midleton town.

Currently, wastewater flows generated in Ballycotton are collected in two combined collection networks with two separate outfalls. These two networks are referred to as the ‘west’ network and the ‘east’ network throughout this report.

The west of the agglomeration is served by a sewer network that conveys combined wastewater and storm water by gravity to a septic tank located along the foreshore to the west of Ballycotton harbour. The septic tank is an above ground structure and it is believed that it was constructed in the 1950s (for a PE of 50-60). The passage of sewage through the septic tank helps in the removal of suspended solids but there is very little biological activity and the removal of BOD is not significant (Cork County Council (2009)). It is considered to provide negligible treatment.

Effluent from the septic tank is discharged into Ballycotton Bay via a short sea outfall which is approx. 80m in length and is encased in concrete.

The east of the agglomeration is served by a collection network which discharges untreated sewage as well as storm water into Ballycotton Bay via an outfall at the end of the harbour pier. The outfall at Ballycotton pier is exposed at low tide.

The objective of the proposed Ballycotton sewerage scheme is to provide a wastewater treatment plant (WwTP) capable of primary treatment. Two new pumping stations (PS) will be required to deliver the wastewater to the WWTP. The PS's will be located to intercept the discharges from the eastern and western collection networks.

The proposed Ballycotton Waste Water Treatment Plant (WwTP) will provide primary treatment of wastewater, with treated effluent quality achieving 20% reduction in BOD and 50% reduction in suspended solids in accordance with the requirements set out in the existing wastewater discharge licence (no. D0516-01) and the Urban Wastewater Treatment Directive.

A Waste Water Discharge Licence (WWDL) (Licence Register Number: D05016-01) was granted to Irish Water in accordance with the Waste Water Discharge (Authorisation) Regulations (S.I. No. 684 of 2007) in 2014.

This desk top study has been undertaken to determine the necessity, if any, for further analysis of the discharge based on the *Guidance on the Screening for Priority Substances for Waste Water Discharge Licences*, issued by the EPA. Relevant inputs to the Ballycotton WwTP and estimates for the emissions from the discharge point have been taken into account in the preparation of this report.

#### Desktop Study

## Review of all industrial inputs into WwTP

A review of all available online mapping and all EPA licensed facilities was undertaken to determine the non-domestic discharge types which will be received at the Ballycotton WwTP.

EPA's online mapping portal doesn't show any IPC (Integrated Pollution Control) sites, IEL (Industrial Emissions Licensing) facilities

The sources of the emissions from the proposed WwTP are largely associated with the residential population of the agglomeration, as well as domestic type wastewater discharge from commercial sources (shops, restaurants, offices etc.).

The proposed Ballycotton Sewerage Scheme will end the practice of the discharge of untreated wastewater from the agglomeration which will have a significant positive impact on the surface water quality.

Upon review of the types of businesses, amenities and educational facilities in Ballycotton, **Table 1** provides an indicative list of non-domestic discharge types to the WwTP and details potential dangerous/priority substance.

Type of Industry within the Agglomeration	Potential Source of Dangerous / Priority Substances (Yes / No)	Dangerous / Priority Substances Monitoring Undertaken (Yes / No)	List of Potential Dangerous Substances Based on Industry Type (Source: <b>Technical Assessment Manual – Sectoral Profile Data</b> )
School	Yes	Unknown	Dichloromethene Lead and its compounds Nickel and its compounds Trichloromethane
Hairdressers	Yes	Unknown	Nickel and its compounds Cadmium and its compounds

**Table 1 – List of Non-Domestic Discharge Types to WwTP and Details of Potential Dangerous/Priority Substance**

## Discharge Monitoring

No primary discharge monitoring for the possible presence of Specific Pollutants, Priority and Priority Hazardous Substances as outlined in Table 10, 11 and 12 of European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended (now S.I No. 77 of 2019) is available for this agglomeration.

## Downstream monitoring location's participation in relevant monitoring programme

There is no available record of any priority substances monitoring data for the nearest monitoring stations (National Water Monitoring Station CW05003148BT1001 (Ballycotton Ambient) or National Water Monitoring Station CW31003143BR3003 (BR270 - North of Caple Island)).

Catchments.ie notes that Ballycotton Bay is 'not on a published monitoring programme'.

## Participation in PRTR reporting

The PRTR section of EPA's online mapping portal was reviewed. No emissions/discharges in relation to PRTR are noted within the Ballycotton agglomeration.

## Priority Substance Assessment Conclusion

The desktop study assessed the agglomeration for the presence of relevant priority substances to establish any potential impact on the receiving waters.

The 'parameters to be screened' listed in Appendix 1 of EPA's 'Guidance on the Screening for Priority Substances for Waste Water Discharge Licences' have been reviewed. The desktop study didn't identify any significant sources of the listed parameters within the Ballycotton agglomeration.

The assessment considered the primary discharge relevant to Environmental Quality Standards (EQS) for priority substances in surface waters, as set out in the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended (now S.I No. 77 of 2019).

<b>Does the assessment use the Desk Top Study Method or Screening Analysis to determine if the discharge contains the parameters in Appendix 1 of <i>Guidance on the Screening for Priority Substances for Waste Water Discharge Licences</i>, issued by the EPA</b>	Desk Top Study
<b>Does the assessment include a review of licensed / authorised inputs to the works?</b>	Yes
Does the assessment include a review of other (unauthorised) inputs to the works?	No
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
<b>Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?</b>	N/A

The sources of the emissions from the proposed Ballycotton WwTP are largely associated with the residential population of the agglomeration, as well as domestic type wastewater discharge from commercial sources (shops, restaurants, offices etc.).

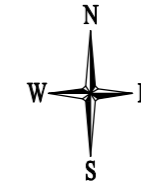
The proposed Ballycotton Sewerage Scheme will end the practice of the discharge of untreated wastewater from the agglomeration which will have a significant positive impact on the surface water quality.

Based on the results of this desk top study, it can be determined that **no for further analysis** of the discharge, based on the *Guidance on the Screening for Priority Substances for Waste Water Discharge Licences*, issued by the EPA, is required.



## **ATTACHMENT D.2.3:**

### **Longitudinal Section of Outfall**



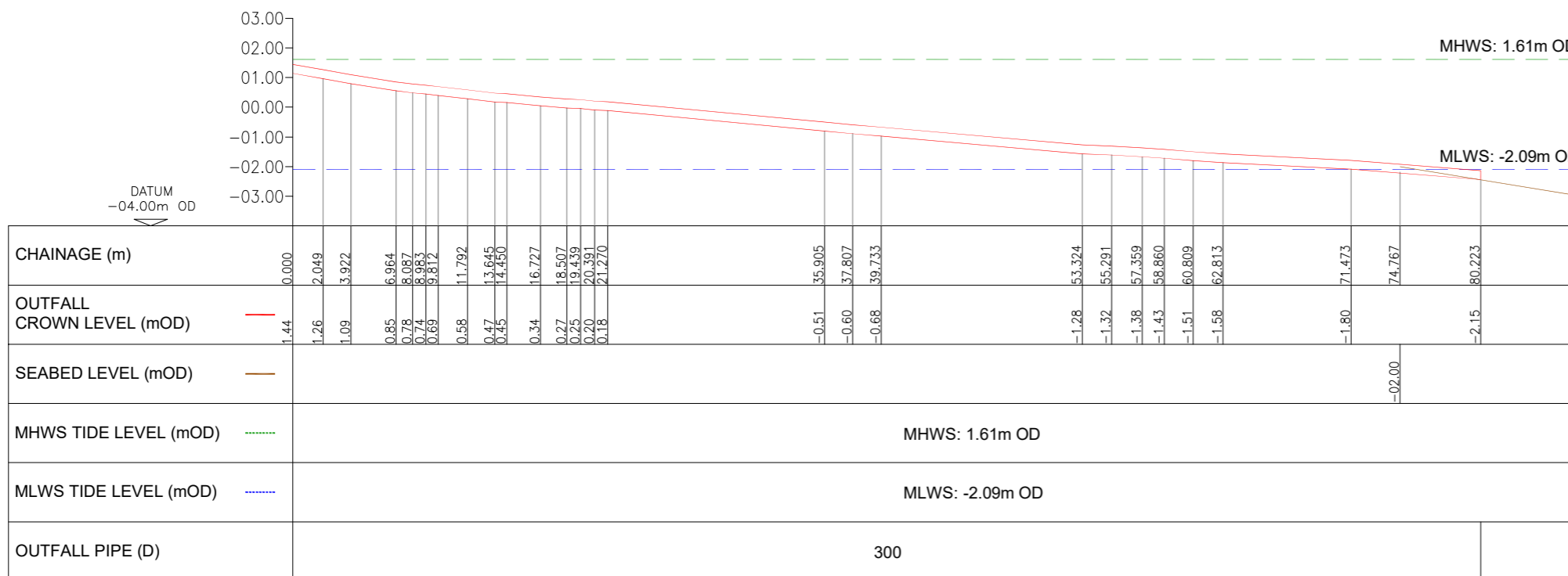
GENERAL NOTES

NOTES:

1. ORDNANCE SURVEY IRELAND LICENCE NUMBER EN 3-3-34.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.

LEGEND:

OUTFALL PIPE —



LONGITUDINAL SECTION OF OUTFALL PIPE

SCALE: HORIZ: 1:250 - VERT: 1:500

Rev	Date	Description	By	Chk	App
FO	15.08.22	ISSUED FOR LICENCE APPLICATION	LT	OL	KT

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 Working in Partnership



PROJECT

UTAS – CORK BUNDLE  
 BALLYCOTTON SEWERAGE SCHEME

DRAWING TITLE

DISCHARGE LICENCE APPLICATION  
 ATTACHMENT D.2.  
 OUTFALL LONGITUDINAL SECTION

STATUS

FOR LICENCE APPLICATION

Date: 15.08.22	Scale: AS SHOWN	Drawn: LT	Chk: OL	App: KT
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Project No: 257589_00	Drg. No: IW10015230-03-02-010	Rev: FO
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