



**CORK COUNTY COUNCIL**  
**WESTERN DIVISION**  
**WATER SERVICES**

**Courthouse, Skibbereen, Co. Cork**

**APPLICATION FOR WASTE**  
**WATER DISCHARGE LICENCE**  
**TIMOLEAGUE**

**Application Form**  
**22<sup>nd</sup> June 2009**



**CORK COUNTY COUNCIL**  
**WESTERN DIVISION**  
**WATER SERVICES**

**Re: Waste Water Discharge Licence Application for the Agglomeration of Timoleague**

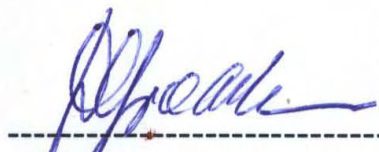
Dear Sir / Madam,

Please find enclosed Cork County Council's Waste Water Discharge Licence Application for the agglomeration of Timoleague.

The following documentation is enclosed:

- 1 Nr. signed original in hardcopy
- 1 Nr. copy in hardcopy
- 2 Nr. CD-ROM with all documentation in electronic searchable PDF (OCR'd format)
- 1 Nr. CD-ROM with GIS Data, Tabular Data

The content of the electronic files is a true copy of the original hardcopy.

  
-----  
Declan Groarke  
Senior Executive Engineer

This is a draft document and is subject to revision.



# Waste Water Discharge Licence Application Form

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**EPA Ref. N<sup>o</sup>:**  
(Office use only)

**Environmental Protection Agency**  
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Lo Call: 1890 335599 Telephone: 053-9160600 Fax: 053-9160699  
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**Tracking Amendments to Draft Application Form**

Version No.	Date	Amendment since previous version	Reason
V. 1.	11/10/07	N/A	
V. 2.	18/10/07	Inclusion of a Note 1 superscript for Orthophosphate in Tables D.1(i)(b) & D.1(ii)(b).	To highlight the requirement for filtered samples in measurement of O-Phosphate for waste water discharges.
V.3.	13/11/07	Amend wording of Section F.2 to include 'abstraction'.  Amend wording of Checklist in Annex to reflect wording of Regulation 16(5) of S.I. No. 684 of 2007.  Inclusion of unique point code for each point of discharge and storm water overflow.	To accurately reflect the information required  To accurately reflect the Regulations and to obtain the application documentation in appropriate format.  To aid in cross-referencing of application documentation.
V.4	18/04/08	Inclusion of requirement to provide name of agglomeration to which the application relates.  Amend wording of Section B.7. (iii) to reflect the title of Water Services Authority.  Addition of new Section B.9 (ii) in order to obtain information on developments yet to contribute to the waste water works.  Addition of sub-sections C.1.1 & C.1.2 in order to clarify information required for Storm water overflow and pumping stations within the works.  Amend Section D.1 to include a requirement for monitoring data for influent	To accurately determine the agglomeration to be licensed.  To accurately reflect the Water Services Act, 2007.  To obtain accurate population equivalent figures for the agglomeration.  To obtain accurate information on design and spill frequency from these structures.  To acquire information on the population loading onto the plant and to provide information on performance rates within





## Waste Water Discharge Authorisation Application Form

		to waste water treatment plants, where available. Amend wording of Section E.1 to request information on composite sampling/flow monitoring provisions.	the plant. To acquire accurate information on the sampling and monitoring provisions for discharges from the works.
V.5	07/07/2008	Amend wording of B.7 (iii) to include reference to Water Services Authorities.  Amend Section G.1 to include Shellfish Waters Directive.	To accurately reflect the Water Services Act, 2007 requirements.
V.6	26/08/2007	Amendments to Section D to reflect new web based reporting.  Amended requirements for reporting on discharges under E.1 Waste Water Discharge Frequency and Quantities.  Amendment to Section F.1 to specify the type of monitoring and reporting required for the background environment.  Removal of Annexes to application form.	To clarify the reporting requirements.  To streamline reporting requirements.  To clarify the reporting requirements for ambient monitoring.  To reflect the new web based reporting requirements.

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Environmental Protection Agency  
Application for a Waste Water Discharge Licence  
Waste Water Discharge (Authorisation) Regulations 2007.

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## ABOUT THIS APPLICATION FORM

This form is for the purpose of making an application for a Waste Water Discharge Licence under the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007) or for the review of an existing Waste Water Discharge licence.

The Application Form **must** be completed in accordance with the instructions and guidance provided in the *Waste Water Discharge Licensing Application Guidance Note*. The Guidance Note gives an overview of Waste Water Licensing, outlines the licence application process (including the number of copies required) and specifies the information to be submitted as part of the application. The Guidance Note and application form are available to download from the Licensing page of the EPA's website at [www.epa.ie](http://www.epa.ie).

A valid application for a Waste Water Discharge Licence must contain the information prescribed in the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007). Regulation 16 of the Regulations sets out the statutory requirements for information to accompany a licence application. The application form is designed in such a way as to set out these questions in a structured manner and not necessarily in the order presented in the Regulations. In order to ensure a legally valid application in respect of Regulation 16 requirements, please complete the Regulation 16 Checklist provided in Annex 2.

This Application Form does not purport to be and should not be considered a legal interpretation of the provisions and requirements of the Waste Water Discharge (Authorisation) Regulations, 2007. While every effort has been made to ensure the accuracy of the material contained in the Application Form, the EPA assumes no responsibility and gives no guarantee, or warranty concerning the accuracy, completeness or up-to-date nature of the information provided herein and does not accept any liability whatsoever arising from any errors or omissions.

Should there be any contradiction between the information requirements set out in the Application Form and any clarifying explanation contained in the accompanying Guidance Note, then the requirements in this Application Form shall take precedence.

## PROCEDURES

The procedure for making and processing of applications for waste water discharge licences, and for the processing of reviews of such licences, appear in the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007) and is summarised below. The application fees that shall accompany an application are listed in the Third Schedule to the Regulations.

Prior to submitting an application the applicant must publish in a newspaper circulating in the area, and erect at the point nearest to the waste water treatment plant concerned or, if no such plant exists, at a location nearest the primary discharge point, a notice of intention to apply. An applicant, not being the local authority in whose functional area the relevant waste water discharge, or discharges, to which the relevant application relates, takes place or is to take place, must also notify the relevant Local Authority, in writing, of their intention to apply.

An application for a licence must be submitted on the appropriate form (available from the Agency) with the correct fee, and should contain relevant supporting documentation as attachments. The application should be based on responses to the form and include supporting written text and the appropriate use of tables and drawings. Where point source emissions occur, a system of unique reference numbers should be used to denote each discharge point. These should be simple, logical, and traceable throughout the application.

The application form is divided into a number of sections of related information. The purpose of these divisions is to facilitate both the applicant and the Agency in the provision of the information and its assessment. **Please adhere to the format as set out in the application form and clearly number each section and associated attachment, if applicable, accordingly.** Attachments should be clearly numbered, titled and paginated and must contain the required information as set out in the application form. Additional attachments may be included to supply any further information supporting the application. Any references made should be supported by a bibliography.

**All questions should be answered. Where information is requested in the application form, which is not relevant to the particular application, the words "not applicable" should be clearly written on the form. The abbreviation "N/A" should not be used.**

Additional information may need to be submitted beyond that which is explicitly requested on this form. Any references made should be supported by a bibliography. The Agency may request further information if it considers that its provision is material to the assessment of the application. Advice should be sought from the Agency where there is doubt about the type of information required or the level of detail.

Information supplied in this application, including supporting documentation will be put on public display and be open to inspection by any person.

Applicants should be aware that a contravention of the conditions of a waste water discharge licence is an offence under the Waste Water Discharge (Authorisation) Regulations, 2007.

**The provision of information in an application for a waste water discharge licence which is false or misleading is an offence under Regulation 35 of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).**

*Note: Drawings. The following guidelines are included to assist applicants:*

- *All drawings submitted should be titled and dated.*
- *All drawings should have a unique reference number and should be signed by a clearly identifiable person.*
- *All drawings should indicate a scale and the direction of north.*
- *All drawings should, generally, be to a scale of between 1:20 to 1:500, depending upon the degree of detail needed to be shown and the size of the facility. Drawings delineating the boundary can be to a smaller scale of between 1:1000 to 1:10560, but must clearly and accurately present the required level of detail. Drawings showing the waste water treatment plant location, if such a plant exists, can be to a scale of between 1:50 000 to 1:126 720. All drawings should, however, be A3 or less and of an appropriate scale such that they are clearly legible. Provide legends on all drawings and maps as appropriate.*
- *In exceptional circumstances, where A3 is considered inadequate, a larger size may be requested by the Agency.*

**It should be noted that it will not be possible to process or determine the application until the required documents have been provided in sufficient detail and to a satisfactory standard.**

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## SECTION A: NON-TECHNICAL SUMMARY

*Advice on completing this section is provided in the accompanying Guidance Note.*

A non-technical summary of the application is to be included here. The summary should identify all environmental impacts of significance associated with the discharge of waste water associated with the waste water works. This description should also indicate the hours during which the waste water works is supervised or manned and days per week of this supervision.

The following information must be included in the non-technical summary:

A description of:

- the waste water works and the activities carried out therein,
- the sources of emissions from the waste water works,
- the nature and quantities of foreseeable emissions from the waste water works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment,
- the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the waste water works,
- further measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused;
- measures planned to monitor emissions into the environment.

### **Waste Water Works and Activities Carried Out Therein**

#### **General**

Timoleague is located at the head of the Timoleague/Courtmacsherry estuary. The main river entering the estuary is the Argideen, a salmonid river that flows past the ruined abbey of Tigh Molaige on the eastern side of the town.

Timoleague's location at the head of the estuary and the imposing ruin of Timoleague Abbey, contributes to the attractiveness of the village. This, in conjunction with the range of facilities Timoleague has to offer, is likely to result in continuing population growth.

Timoleague is a substantial settlement and a service centre in its own right, though recent growth has been slower than at the adjacent village of Courtmacsherry.

Employment opportunities within the village are limited, apart from some service employment. There is little industry in the town except for a small abattoir that is located at a site just south of the town. The abattoir at present has its own wastewater treatment plant, which discharges to the estuary under Environment Protection Agency (EPA) licence.

Active local involvement has done much to improve the amenities of Timoleague. The proposed upgrading of coastal route R600 linking Kinsale and Clonakilty via Timoleague will benefit its development as a touring base.

The nearby main service centres for the village of Timoleague are Clonakilty (10 km. to the west) and Bandon, which is 13 km. to the north.

## **Existing Situation**

At present there is no waste water treatment in Timoleague. Waste water from the village discharges directly to the Courtmacsherry Estuary at five locations detailed below. A treatment system is required for Timoleague and the 'Skibbereen Local Area Plan' states that no further development will be permitted until there is an adequate sewage treatment facility.

The sewer system in Timoleague is drained via a combined sewerage system. A new separate foul sewer was constructed recently in Chapel Hill.

Up to fifteen years ago the collection system in Timoleague consisted of stone culverts, but since then a number of these have been replaced with concrete pipes mainly in Mill Street/Main Street, Chapel Hill and Abbey Street areas.

There are five outfalls points to the foreshore located to the east and south of the town. Untreated effluent discharges directly to the foreshore at these points.

### **Primary Discharge SW01, Abbey Bridge**

This 720mm diameter outfall discharges directly to the river at Abbey Bridge immediately north of the school. This is the main outfall of the village and serves the Abbey Street, Mill Street, parts of Main Street and Chapel Hill / Chapel Avenue areas.

### **Secondary Discharge SW02, School Road**

This 150mm diameter outfall discharges into estuary south of Abbey Bridge. The School Road and southern part of the village connect to this outfall.

### **Secondary Discharge SW03, West of Abbey Bridge**

This 100mm diameter outfall discharges to estuary north of SW02 adjacent to the school. The School connects into this outfall.

### **Secondary Discharge SW04, North of Timoleague Abbey**

This 150mm diameter outfall also discharges to the estuary in between Abbey Bridge and Church Bridge adjacent to Timoleague Abbey. This outfall serves the properties to the rear of Abbey Street and those in 'Abbeyside'.

### **Secondary Discharge SW05, South of Church Bridge**

This outfall is located just south of Church Bridge. The outfall serves the properties on Church Road.

## **Proposed Sewerage Scheme Upgrade**

A preliminary report has been prepared by J B Barry & Partners, Consulting Engineers for the Upgrading of Courtmacsherry & Timoleague Sewerage Schemes and is currently awaiting approval from the Department of Environment, Heritage and Local Government.

This report recommends the following:



## Collection System

A hydraulic analysis of the sewerage system was carried out for Timoleague.

The combined sewer system displays surcharging when subjected to 1 year, 5 year and 20 year storm and the design future loading. Consideration was given to the option of constructing a new foul sewer alongside the stone culvert in Abbey Street in order that the culvert would be used as a storm (only) culvert. The depth of the existing culvert varies from 1.5 metres to 2.4 metres. Allied to this the alignment of the stone culvert cannot be definitely mapped. A new foul sewer could be required to be constructed at a depth of circa 3 metres to permit reconnection of house connections under the existing stone culvert. This option could involve complicated construction issues, including protection of the existing culvert against possible collapses.

The areas that experience surcharging in Timoleague are along the laneway off Abbey Street and to the rear of the School and it is recommended that these sewers are upgraded from 150 mm and 100 mm diameter to 225 mm diameter.

It is proposed to lay a header sewer along the Main Road in Timoleague that will intercept the five existing outfalls. Due to the topography of the ground and existing invert levels of the outfalls the proposed new sewer will run from the north of the village at Church Bridge to the south of the village (School Road / Barryroe Road). The new sewer will terminate at a new proposed Pumping Station.

## Pumping Station

The proposed pumping station site is a green field that lies due south of Timoleague Village. The site is approximately 0.77ha and the topography of the site is a steep slope from west to east. Access to the site would be via the Main Road.

The site is also within the Local Development Plan boundary. Construction of a pumping station on this site will require retaining walls in order that the site can be levelled and constructed at the appropriate elevation. Currently there is one farmhouse within 50 metres of the proposed site, however the land is within the Development Plan boundary, therefore odour and visual impact from the pumping station should be minimised in the event of future residential development within the surrounding area.

This pump station will pump the waste water from Timoleague to the proposed Waste Water Treatment Plant at Courtmacsherry.

## Waste Water Treatment Plant

It is proposed to construct a new waste water treatment plant on a greenfield site 0.25 km to the west of Courtmacsherry and that this plant will serve the villages of Timoleague and Courtmacsherry. The waste water treatment plant will be phased to cater for a load from Timoleague of 1,300 pe for the year 2015 (Phase 1) and 2,020 pe for horizon year 2030 (Phase 2) with sewer network designed for 2,620 pe for horizon year 2055.

Detailed design of the proposed treatment plant has not yet been carried out. A typical plant would consist in this case of screening, aeration, settlement with return of sludge and sludge treatment and removal and will also include storm water storage.

The preferred option for the outfall is to be located at the existing Courtmacsherry outfall point. It is proposed that UV disinfection be installed at the WWTP due to the fact that Courtmacsherry Bay is used as an amenity area for fishing and water sports. The treated effluent quality standard for the Waste Water Treatment Plant is to comply with the E.U. Urban Waste Water Treatment Directive Standards which are as follows:

- BOD 25mg/l
- COD 125mg/l
- Total Suspended Solids 35mg/l

Tertiary treatment to remove phosphorus and total nitrogen may also be required in the future if the combined population of Timoleague and Courtmacsherry increases above 10,000 PE or Courtmacsherry Bay gets designated a sensitive water. It is recommended that sufficient land shall be obtained for the WWTP in order that additional process units can be added to the plant if this situation arises in the future.

The sludge disposal proposals for the Timoleague Sewerage Scheme will be in accordance with the County Cork Sludge Management Plan which is currently under review.

**Sources of Emissions from the Waste Water Works**

The proposed WWTP will have to deal with a total loading (organic and hydraulic) from the following sources:

- Domestic population
- Commercial Sector
- Industrial Sector
- Institutional Sector

The most significant loading in terms of quantity is the domestic population generated load which varies significantly due to local tourism.

	PE 2006	PE 2030	PE 2055
Domestic & Non- Domestic (Holiday Homes/ B&B residents) Summer Population	428	1,404	1,939
Commercial	147	375	457
Industrial	-	96	180

Institutional	17	32	44
<b>Total</b>	<b>592</b>	<b>1,907</b>	<b>2,620</b>

For the purposes of this application the relevant pe chosen for the licence period is 1,000 being the pe estimated at end of that period.

**The nature and quantities of foreseeable emissions from the waste water works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment**

The Estuary forms an integral part of the landscape of Courtmacsherry/Timoleague and stretches from the mouth of the Argideen River at Timoleague as far as 'Wood Point' which is the so named headland area approximately 4.5km east of Courtmacsherry Harbour. The estuary is a valued angling location, although this activity has declined over the last decade. It is anticipated that recent dredging of the harbour at Courtmacsherry should assist in reviving sea angling within the area. On the southern side of the estuary there are a number of areas used by bathers. The main bathing area is located east of Courtmacsherry Hotel.

At present there is no waste water treatment in Timoleague. Waste water from the village discharges directly to the Courtmacsherry Estuary at five locations detailed below. It is envisaged that the proposed new waste water treatment plant will ensure a major improvement in quality of effluent thus lessening the effects of the emissions on the environment.

In the design of the proposed new upgrade to the scheme the current relevant standards were applied to the overflows from the pumping stations and using the hydraulic model it was decided to limit storm overflows from the pumping stations to the estuary to 7 (seven) spills per bathing season or flows in excess of Formula A, which ever is more stringent. Storm tanks will be required at the WWTP. It is also proposed to screen to 6mm and separate gross solids from the incoming flows.

The minimum treatment standards adopted as per the Second Schedule of the Urban Wastewater Treatment Directive for the village are as follows:

**Biochemical Oxygen Demand (BOD) 25 mg/l**  
**Chemical Oxygen Demand (COD) 125 mg/l**  
**Total Suspended Solids (TSS) 35 mg/l**

It is proposed that UV disinfection be installed at the WWTP due to the fact that Courtmacsherry Bay is used as an amenity area for fishing and water sports.

The following table outlines the hydraulic loading from Timoleague on the WWTP and consequently on the aqueous environment:

Description	2005	2030	2055
Hydraulic Loading – 1DWF (m <sup>3</sup> /day)	133	429	589

As part of the Preliminary Report for the upgrading of the Courtmacsherry Scheme an Ecology Report was carried out and the following are some of the findings of that report:

The entire Courtmacsherry estuary has very extensive green algae cover which is particularly notable during low water when it can be seen covering virtually all intertidal sand and mud flats. During the dive survey, massive amounts of algae were observed drifting on the current. The abundance of algae appears to be at least partially a result of currently inadequate treatment of waste water discharges into the bay.

Bathymetric modelling demonstrated that there would be sufficient tidal movement and flushing at the location of the outfall to prevent build up of effluent concentrations during flood tide. No significant impact on marine fauna would be expected at this location.

**The proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the waste water works**

It is proposed that the waste water treatment plant will be constructed as part of a Design, Build and Operate (DBO) bundle of schemes. It is envisaged that this offers the following advantages

- more buildable designs,
- innovative solutions to design issues,
- improved guarantee of enhanced operational performance.

Consequently, newer technologies will be more likely to be used to optimize treatment thus ensuring compliance with the necessary effluent standards.

Other technologies proposed would include suitable telemetry and control techniques to monitor operations of the scheme.

**Measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused**

It is likely that under the DBO contract for Timoleague and Courtmacsherry Wastewater Treatment Plant, a Performance Management System will be required. Such a system would provide a uniform approach to dealing with performance management issues, including procedures for dealing with plant operation, and in particular for dealing with emergencies or failure to meet treated effluent standards. Failure to meet the specified treated effluent standards may result in final penalties to the operating contractor. As a result, the risk of environmental pollution from the treatment plant should be reduced.

**Measures planned to monitor emissions into the environment**

It is likely that under the Employers Requirements for Operation & Maintenance

of the Works for Courtmacsherry Wastewater Treatment Plant, the Contractor will be obliged to implement in full, the requirements of a 'Performance Management System'. In providing this service, the Contractor would monitor the wastewater treatment plant assets and operations, which would include undertaking sampling, monitoring and analysis of the wastewater and sludge. Long term monitoring of the estuary and the final effluent from the treatment plant will also be undertaken to determine compliance or otherwise with the quality objectives set for the scheme.

Supporting information should form **Attachment N° A.1**

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**SECTION B: GENERAL**

Advice on completing this section is provided in the accompanying Guidance Note.

**B.1 Agglomeration Details**

**Name of Agglomeration:** Timoleague

**Applicant's Details**

**Name and Address for Correspondence**

Only application documentation submitted by the applicant and by the nominated person will be deemed to have come from the applicant. Provide a drawing detailing the agglomeration to which the licence application relates. It should have the boundary of the agglomeration to which the licence application relates clearly marked in red ink.

<b>Name*:</b>	Cork County Council
<b>Address:</b>	Courthouse, Skibbereen Co. Cork
<b>Tel:</b>	028-21299
<b>Fax:</b>	028-21995
<b>e-mail:</b>	declan.groarke@corkcoco.ie

\*This should be the name of the water services authority in whose ownership or control the waste water works is vested.

\*Where an application is being submitted on behalf of more than one water services authority the details provided in Section B.1 shall be that of the lead water services authority.

<b>Name*:</b>	Mr Declan Groarke, SEE
<b>Address:</b>	Water Services, Western Division, Cork Co. Co, The Courthouse, Skibbereen Co Cork
<b>Tel:</b>	(028) 21299
<b>Fax:</b>	(028) 21995
<b>e-mail:</b>	declan.groarke@corkcoco.ie

\*This should be the name of person nominated by the water services authority for the purposes of the application.

**Co-Applicant's Details**

<b>Name*:</b>	NOT APPLICABLE
<b>Address:</b>	
<b>Tel:</b>	
<b>Fax:</b>	
<b>e-mail:</b>	

\*This should be the name of a water services authority, other than the lead authority, where multiple authorities are the subject of a waste water discharge (authorisation) licence application.

**Design, Build & Operate Contractor Details**

<b>Name*:</b>	NOT APPLICABLE
<b>Address:</b>	
<b>Tel:</b>	
<b>Fax:</b>	
<b>e-mail:</b>	

\*Where a design, build & operate contract is in place for the waste water works, or any part thereof, the details of the contractor should be provided.

**Attachment B.1** should contain appropriately scaled drawings / maps ( $\leq A3$ ) of the agglomeration served by the waste water works showing the boundary clearly marked in red ink. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g., ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. These drawings should be provided to the Agency on a separate CD-Rom containing sections B.2, B.3, B.4, B.5, C.1, D.2, E.3 and F.2.

Attachment included	Yes	No
	✓	

**B.2 Location of Associated Waste Water Treatment Plant(s)**

Give the location of the waste water treatment plant associated with the waste water works, if such a plant or plants exist.

No Waste Water Treatment Plant exists in Timoleague

<b>Name*:</b>	John Conroy, SEE
<b>Address:</b>	Cork County Council Offices, Emmet Square, Clonakilty, Co. Cork
<b>Grid ref (6E, 6N)</b>	Not Applicable
<b>Level of Treatment</b>	None
<b>Primary Telephone:</b>	023 33347
<b>Fax:</b>	023 33147
<b>e-mail:</b>	john.conroy@corkcoco.ie

\*This should be the name of the person responsible for the supervision of the waste water treatment plant.

**Attachment B.2** should contain appropriately scaled drawings / maps ( $\leq A3$ ) of the site boundary and overall site plan, including labelled discharge, monitoring and sampling points. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g., ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. These drawings should be provided to the Agency on a separate CD-Rom containing sections B.1, B.3, B.4, B.5, C.1, D.2, E.3 and F.2.

Attachment included	Yes	No

		✓
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**B.3 Location of Primary Discharge Point**

Give the location of the primary discharge point, as defined in the Waste Water Discharge (Authorisation) Regulation, associated with the waste water works.

Existing Primary Discharge

<b>Type of Discharge</b>	E.g. Diffuser, Lunar Valve, Non-return flap valve etc. Open Pipe
<b>Unique Point Code</b>	SW01 TIMO
<b>Location</b>	Courtmacsherry Estuary
<b>Grid ref (6E, 6N)</b>	E147200 N043523

Proposed Primary Discharge

<b>Type of Discharge</b>	E.g. Diffuser, Lunar Valve, Non-return flap valve etc. Non-Return Flap Valve
<b>Unique Point Code</b>	SW01P TIMO
<b>Location</b>	Courtmacsherry Estuary
<b>Grid ref (6E, 6N)</b>	E150732 N042818

**Attachment B.3** should contain appropriately scaled drawings / maps (≤A3) of the discharge point, including labelled monitoring and sampling points associated with the discharge point. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing the drawings and tabular data requested in sections B.1, B.2, B.4, B.5, C.1, D.2, E.3 and F.2.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
	✓	

**B.4 Location of Secondary Discharge Point(s)**

Give the location of **all** secondary discharge point(s) associated with the waste water works. Please refer to Guidance Note for information on Secondary discharge points.

<b>Type of Discharge</b>	E.g. Diffuser, Lunar Valve, Non-return flap valve etc. Open Pipe
<b>Unique Point Code</b>	SW02 TIMO
<b>Location</b>	Courtmacsherry Estuary
<b>Grid ref (6E, 6N)</b>	E147132 N043496

<b>Type of Discharge</b>	E.g. Diffuser, Lunar Valve, Non-return flap valve etc.
<b>Unique</b>	SW03 TIMO



<b>Point Code</b>	
<b>Location</b>	Courtmacsherry Estuary
<b>Grid ref (6E, 6N)</b>	E147141 N043507

<b>Type of Discharge</b>	E.g. Diffuser, Lunar Valve, Non-return flap valve etc. Open Pipe
<b>Unique Point Code</b>	SW04 TIMO
<b>Location</b>	Courtmacsherry Estuary
<b>Grid ref (6E, 6N)</b>	E147209 N043702

<b>Type of Discharge</b>	E.g. Diffuser, Lunar Valve, Non-return flap valve etc.
<b>Unique Point Code</b>	SW05 TIMO
<b>Location</b>	Courtmacsherry Estuary
<b>Grid ref (6E, 6N)</b>	E147176 N043789

**Attachment B.4** should contain appropriately scaled drawings / maps ( $\leq A3$ ) of the discharge point(s), including labelled monitoring and sampling points associated with the discharge point(s). These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.5, C.1, D.2, E.3 and F.2.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
	✓	

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**B.5 Location of Storm Water Overflow Point(s)**

Give the location of **all** storm water overflow point(s) associated with the waste water works.

**Proposed Pumping Station Overflow**

<b>Type of Discharge</b>	Open Pipe
<b>Unique Point Code</b>	SW06P
<b>Location</b>	Courtmacsherry Estuary
<b>Grid ref (6E, 6N)</b>	E147090 N043460

**Attachment B.5** should contain appropriately scaled drawings / maps ( $\leq A3$ ) of storm water overflow point(s) associated with the waste water works, including labelled monitoring and sampling points associated with the discharge point(s). These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to

the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, C.1, D.2, E.3 and F.2.

Attachment included	Yes	No
	✓	

**B.6 Planning Authority**

Give the name of the planning authority, or authorities, in whose functional area the discharge or discharges take place or are proposed to take place.

<b>Name:</b>	Cork County Council
<b>Address:</b>	Norton House
	Skibbereen
	Co. Cork
	028 40340
<b>Tel:</b>	028 21660
<b>Fax:</b>	Cork County Council
<b>e-mail:</b>	planninginfo@corkcoco.ie

Planning Permission relating to the waste water works, which is the subject of this application:- (tick as appropriate)

<b>has been obtained</b>		<b>is being processed</b>	
<b>is not yet applied for</b>	✓	<b>is not required</b>	

<b>Local Authority Planning File Reference N<sup>o</sup>:</b>	Not applicable
---	----------------

**Attachment B.6** should contain **the most recent** planning permission, including a copy of **all** conditions, and where an EIS was required, copies of any such EIS and any certification associated with the EIS, should also be enclosed. Where planning permission is not required for the development, provide reasons, relevant correspondence, etc.

Attachment included	Yes	No
		✓

**B.7 Other Authorities**

B.7 (i) Shannon Free Airport Development Company (SFADCo.) area

The applicant should tick the appropriate box below to identify whether the discharge or discharges are located within the Shannon Free Airport Development Company (SFADCo.) area.

**Attachment B.7(i)** should contain details of any or all discharges located within the SFADCo. area.

Within the SFADCo Area	Yes	No

		✓
--	--	---

**B.7 (ii) Health Services Executive Region**

The applicant should indicate the **Health Services Executive Region** where the discharge or discharges are or will be located.

<b>Name:</b>	Health Service Executive
<b>Address:</b>	Area Headquarters
	Hospital Grounds
	Skibbereen
<b>Tel:</b>	028-40400
<b>Fax:</b>	028-21006
<b>e-mail:</b>	info@hse.ie

**B.7 (iii) Other Relevant Water Services Authorities**

Regulation 13 of the Waste Water Discharge (Authorisation) Regulations, 2007 requires all applicants, not being the water services authority in whose functional area the relevant waste water discharge or discharges, to which the relevant application relates, takes place or is to take place, to notify the relevant water services authority of the said application.

<b>Name:</b>	NOT APPLICABLE
<b>Address:</b>	
<b>Tel:</b>	
<b>Fax:</b>	
<b>e-mail:</b>	

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<b>Relevant Authority Notified</b>	<b>Yes</b>	<b>No</b>
		✓

**Attachment B.7(iii)** should contain a copy of the notice issued to the relevant local authority.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
		✓

**B.8 Notices and Advertisements**

Regulations 10 and 11 of the Waste Water Discharge (Authorisation) Regulations, 2007 require all applicants to advertise the application in a newspaper and by way of a site notice. See *Guidance Note*.

**Attachment B.8** should contain a copy of the site notice and an appropriately scaled drawing (≤A3) showing its location. **The original application must include the original page of the newspaper in which the advertisement was placed.** The relevant page of the newspaper containing the advertisement should be included with the original and two copies of the application.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
	✓	

### B.9 (i) Population Equivalent of Agglomeration

**TABLE B.9.1 POPULATION EQUIVALENT OF AGGLOMERATION**

The population equivalent (p.e.) of the agglomeration to be, or being, served by the waste water works should be provided and the period in which the population equivalent data was compiled should be indicated.

<b>Population Equivalent</b>	<b>592 (Existing)</b>
<b>Data Compiled (Year)</b>	<b>2004</b>
<b>Method</b>	<b>House Count</b>

It is estimated that the population equivalent at end of licence period will be 1,000.

<b>Population Equivalent</b>	<b>1,907 (Proposed- year 2030)</b>
<b>Data Compiled (Year)</b>	<b>2005</b>
<b>Method</b>	<b>Development Plan</b>

### B.9 (ii) Pending Development

Where planning permission has been granted for development(s), but development has not been commenced or completed to date, within the boundary of the agglomeration and this development is being, or is to be, served by the waste water works provide the following information;

- information on the calculated population equivalent (p.e.) to be contributed to the waste water works as a result of those planning permissions granted,
  - the percentage of the projected p.e. to be contributed by the non-domestic activities, and
  - the ability of the waste water works to accommodate this extra hydraulic and organic loading without posing an environmental risk to the receiving water habitat.
- P.e. to be contributed to the waste water works as a result of planning permissions granted not commenced or completed – 8
  - Percentage of the projected p.e. to be contributed by the non-domestic activities – 5%
  - Ability of the waste water works to accommodate this extra hydraulic and organic loading without posing an environmental risk to the receiving water habitat – It is envisaged that this development will not take place prior to construction of proposed waste water treatment plant which will cater for this development.

### B.9 (iii) FEES

State the relevant Class of waste water discharge as per Column 1 of the Second Schedule, and the appropriate fee as per Columns 2 or 3 of the Third Schedule of the Waste Water Discharges (Authorisation) Regulations 2007, S.I. No. 684 of 2007.

<b>Class of waste water discharge</b>	<b>Fee (in €)</b>
	10,000

<b>Appropriate Fee Included</b>	<b>Yes</b>	<b>No</b>
	✓	

### **B.10 Capital Investment Programme**

State whether a programme of works has been prioritised for the development of infrastructure to appropriately collect, convey, treat and discharge waste water from the relevant agglomeration. If a programme of works has been prioritised provide details on funding, (local or national), allocated to the capital project. Provide details on the extent and type of work to be undertaken and the likely timeframes for this work to be completed.

The Upgrading of the Courtmacsherry & Timoleague Sewerage Schemes has been included in the Water Services Investment Programme for 2007-2009. See likely timeframe at end of this section.

A preliminary report has been prepared by J B Barry & Partners, Consulting Engineers for the Upgrading of Courtmacsherry & Timoleague Sewerage Schemes and is currently awaiting approval from the Department of Environment, Heritage and Local Government.

This report recommends the following:

#### Collection System

To meet the demands of proposed future developments within Timoleague and its environs, upgrading and extending the existing sewer network will be required.

The sewer network in Timoleague was surveyed under the CCTV Survey. In general the sewer network is in reasonable condition. There are some lengths of sewer which require structural rehabilitation. Strengthening and augmentation of the existing foul/combined system will be required to address lack of capacity (under future loading conditions) and isolated instances of poor sewer condition.

Foul sewers will be required to provide for future development areas in the village and the environs.

A hydraulic analysis of the sewerage system was carried out for Timoleague.

The combined sewer system displays surcharging when subjected to 1 year, 5 year and 20 year storm and the design future loading. Consideration was given to the option of constructing a new foul sewer alongside the stone culvert in Abbey Street in order that the culvert would be used as a storm (only) culvert. The depth of the existing culvert varies from 1.5 metres to 2.4 metres. Allied to this the alignment of the stone culvert cannot be definitely mapped. A new foul sewer could be required to be constructed at a depth of circa 3 metres to permit reconnection of house connections under the existing stone culvert. This option could involve complicated construction issues, including protection of the existing culvert against possible collapses.

The areas that experience surcharging in Timoleague are along the laneway off Abbey Street and to the rear of the School and it is recommended that these sewers are upgraded from 150 mm and 100 mm diameter to 225 mm diameter.

It is proposed to lay a header sewer along the Main Road in Timoleague that will intercept the five existing outfalls. Due to the topography of the ground and existing invert levels of the outfalls the proposed new sewer will run from the north of the village at Church Bridge to the south of the village (School Road / Barryroe Road). The new sewer will terminate at a new proposed Pumping Station.

### Pumping Stations

The proposed pumping station site is a green field that lies due south of Timoleague Village. The site is approximately 0.77ha and the topography of the site is a steep slope from west to east. Access to the site would be via the Main Road.

The site is also within the Local Development Plan boundary. Construction of a pumping station on this site will require retaining walls in order that the site can be levelled and constructed at the appropriate elevation. Currently there is one farmhouse within 50 metres of the proposed site, however the land is within the Development Plan boundary, therefore odour and visual impact from the pumping station should be minimised in the event of future residential development within the surrounding area.

#### ***Design Option - Pump Forward Formula A from Harbour PS, Courtmacsherry and 7 in 1 year from Timoleague PS; Provide Storage at WWTP***

Under this Option, the Harbour PS for Courtmacsherry will pump at a rate equivalent to Formula A and the Timoleague PS will pump at a rate greater than Formula A. Storage would be required to store the difference between the hydraulic capacities of Harbour PS and Timoleague PS and full flow to treatment at the WWTP. No storage is required at the individual pump stations to comply with this overflow regime.

It is recommended that storage at the WWTP has a capacity capable of storing the difference between the total Formula A flow from Harbour PS and the Formula A flow from Timoleague PS and full flow to treatment (FFT at 3 DWF) for 2 hrs. Table 11.7 summarises the details.

<b>Table 11.7: Option Formula A / 7 in 1 Year Pumping Rate; WWTP Storage</b>				
<b>Harbour PS Rate (l/s)</b>	<b>Timoleague PS Rate (l/s)</b>	<b>FFT 3DWF (l/s)</b>	<b>WWTP Storage Volume (m<sup>3</sup>)</b>	<b>2 No. Storm Tank Dimensions * (m)</b>
70	40	43	483	5 x 14

\* Assuming liquid depth of 4m

This option is environmentally responsible as it proposes to pump at a rate to only allow storm overflows under a 1 in 1 year storm at Timoleague PS and 1 in 5 year storm at Harbour PS. Due to the ability of this option to meet the required standards, and the fact that the storm tank will be constructed in one location only (i.e. WWTP), and will not be constructed near development, this option is considered very attractive.

It is also recommended that duty / assist pumps are installed within Phase 1 at both pumping stations in order to cope with the variation in flows during the summer and winter months and to assist in reducing the retention time within the rising main. It is also recommended that during the detailed design stage that the option of a twin rising main from Timoleague to the WWTP be considered which would operate with a single rising main during the winter months during low flows and then the twin rising main would operate during the tourist season in the summer months.

Flows from Timoleague will be pumped to the WWTP via a 3.3km rising main. Consideration will be required during the design of the Timoleague Pumping Station and rising main to ensure that there is sufficient turn over of flow (minimum of three changes per day) in order to prevent excessive detention that would cause septicity and possible odours. The septicity of the influent could also affect the operation of the WWTP.

Emergency overflow will be required at Timoleague PS.

The proposed pumping station and rising mains are summarised in Table 11.5 below.

<b>Table 11.5: Proposed Pumping Station and Rising Mains</b>							
<b>PS Name</b>	<b>Location</b>	<b>Sub-Areas Served</b>	<b>Area (ha)</b>	<b>Capacity (l/s)</b>	<b>Pipe size Req'd. (mm)</b>	<b>To Node</b>	<b>Pipe Length (m)</b>
Timoleague PS	Coast Road lwr, Sth. Timoleague	Whole Timoleague Catchment	32	40	180	WWTP	3,300

## Waste Water Treatment Plant

It is proposed to construct a new waste water treatment plant on a greenfield site 0.25 km to the west of Courtmacsherry and that this plant will serve the village of Timoleague and Courtmacsherry. The waste water treatment plant will be phased to cater for a load from Timoleague of 1,500 for the year 2015 (Phase 1) and 2,020 pe for horizon year 2030 (Phase 2) with sewer network designed for 2,620 pe for horizon year 2055.

Detailed design of the proposed treatment plant has not yet been carried out. A typical plant would consist in this case of screening, aeration, settlement with return of sludge and sludge treatment and removal and will also include storm water storage.

The preferred option for the outfall is to be located at the existing Courtmacsherry outfall point. It is proposed that UV disinfection be installed at the WWTP due to the fact that Courtmacsherry Bay is used as an amenity area for fishing and water sports.

The treated effluent quality standard for the Waste Water Treatment Plant is to comply with the E.U. Urban Waste Water Treatment Directive Standards which are as follows:

- BOD 25mg/l
- COD 125mg/l
- Total Suspended Solids 35mg/l

Tertiary treatment to remove phosphorus and total nitrogen may also be required in the future if the combined population of Timoleague and Courtmacsherry increases above 10,000 PE or Courtmacsherry Bay gets designated a sensitive water. It is recommended that sufficient land shall be obtained for the WWTP in order that additional process units can be added to the plant if this situation arises in the future.

The sludge disposal proposals for the Timoleague Sewerage Scheme will be in accordance with the County Cork Sludge Management Plan which is currently under review.

## Likely Timeframe

The likely timeframe for the carrying out of these works is as follows:

1. **Preparation of Brief** for the Appointment of Consulting Engineer for Scheme to go forward as Design, Build, Operate (DBO) Scheme by **June 2009**
2. **Approval of Brief** by DOEHLG – **Jan 2010**
3. **Appoint Consultant** – **June 2010**
4. **Design period + Receipt of Tenders** – **December 2012**
5. **Start construction** – **June 2013**
6. **Completion of Works** – **June 2014**



**Attachment B.10** should contain the most recent development programme, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

Attachment included	Yes	No
	✓	

**B.11 Significant Correspondence**

Provide a summary of any correspondence resulting from a Section 63 notice issued by the Agency in relation to the waste water works under the Environmental Protection Agency Acts, 1992 and 2003, as amended by Section 13 of Protection of the Environment Act, 2003.

**Attachment B.11** should contain a summary of any relevant correspondence issued in relation to a Section 63 notice.

Attachment included	Yes	No
		✓

**B.12 Foreshore Act Licences.**

Provide a copy of the most recent Foreshore Act licence issued in relation to discharges from the waste water works issued under the Foreshore Act 1933.

List of Foreshore Licences for Cork includes one for Timoleague for the purpose of “Laying, maintaining and using an outfall sewage pipe”, file reference MS/51/8/440 dated 6/12/1968 on behalf of Cork County Council for a period of 99 years.

Actual licence is not available.

**Attachment B.12** should contain the most recent licence issued under the Foreshore Act 1933, including a copy of **all** conditions attached to the licence and any monitoring returns for the previous 12-month period, if applicable.

Attachment included	Yes	No
		✓

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## SECTION C: INFRASTRUCTURE & OPERATION

*Advice on completing this section is provided in the accompanying Guidance Note.*

### **C.1 Operational Information Requirements**

Provide a description of the plant, process and design capacity for the areas of the waste water works where discharges occur, to include a copy of such plans, drawings or maps, (site plans and location maps, process flow diagrams), and such other particulars, reports and supporting documentation as are necessary to describe all aspects of the area of the waste water works discharging to the aquatic environment. Maps and drawings must be no larger than A3 size.

### Existing System

At present there is no waste water treatment in Timoleague. Waste water from the village discharges directly to the Courtmacsherry Estuary at five locations detailed below.

The sewer system in Timoleague is drained via a combined sewerage system. A new separate foul sewer was constructed recently in Chapel Hill.

Up to fifteen years ago the collection system in Timoleague consisted of stone culverts, but since then a number of these have been replaced with concrete pipes mainly in Mill Street/Main Street, Chapel Hill and Abbey Street areas.

There are five outfalls points to the foreshore located to the east and south of the town. Untreated effluent discharges directly to the foreshore at these points.

#### **Primary Discharge SW01, Abbey Bridge**

This 720mm diameter outfall discharges directly to the river at Abbey Bridge immediately north of the school. This is the main outfall of the village. This outfall serves the Abbey Street, Mill Street, parts of Main Street and Chapel Hill / Chapel Avenue areas

#### **Secondary Discharge SW02, School Road**

This 150mm diameter outfall discharges into estuary south of Abbey Bridge. The School Road and southern part of the village connect to this outfall.

#### **Secondary Discharge SW03, West of Abbey Bridge**

This 100mm diameter outfall discharges to estuary north of SW02 adjacent to the school. The School connects into this outfall.

#### **Secondary Discharge SW04, North of Timoleague Abbey**

This 150mm diameter outfall also discharges to the estuary in between Abbey Bridge and Church Bridge adjacent to Timoleague Abbey. This outfall serves the properties to the rear of Abbey Street and those in 'Abbeyside'.

## **Secondary Discharge SW05, South of Church Bridge**

This outfall is located just south of Church Bridge. The outfall serves the properties on Church Road.

## Proposed Sewerage Scheme Upgrade

A preliminary report has been prepared by J B Barry & Partners, Consulting Engineers for the Upgrading of Courtmacsherry & Timoleague Sewerage Schemes and is currently awaiting approval from the Department of Environment, Heritage and Local Government.

This report recommends the following:

### Collection System

A hydraulic analysis of the sewerage system was carried out for Timoleague.

The combined sewer system displays surcharging when subjected to 1 year, 5 year and 20 year storm and the design future loading. Consideration was given to the option of constructing a new foul sewer alongside the stone culvert in Abbey Street in order that the culvert would be used as a storm (only) culvert. The depth of the existing culvert varies from 1.5 metres to 2.4 metres. Allied to this the alignment of the stone culvert cannot be definitely mapped. A new foul sewer could be required to be constructed at a depth of circa 3 metres to permit reconnection of house connections under the existing stone culvert. This option could involve complicated construction issues, including protection of the existing culvert against possible collapses.

The areas that experience surcharging in Timoleague are along the laneway off Abbey Street and to the rear of the School and it is recommended that these sewers are upgraded from 150 mm and 100 mm diameter to 225 mm diameter.

It is proposed to lay a header sewer along the Main Road in Timoleague that will intercept the five existing outfalls. Due to the topography of the ground and existing invert levels of the outfalls the proposed new sewer will run from the north of the village at Church Bridge to the south of the village (School Road / Barryroe Road). The new sewer will terminate at a new proposed Pumping Station. This station will pump the waste water from Timoleague to a new Waste Water Treatment Plant located to the west of Courtmacsherry.

### Pumping Station

The proposed pumping station site is a green field that lies due south of Timoleague Village. The site is approximately 0.77ha and the topography of the site is a steep slope from west to east. Access to the site would be via the Main Road.

The site is also within the Local Development Plan boundary. Construction of a pumping station on this site will require retaining walls in order that the site can be levelled and constructed at the appropriate elevation. Currently there is one farmhouse within 50 metres of the proposed site, however the land is within the Development Plan boundary, therefore odour and visual impact from the pumping

station should be minimised in the event of future residential development within the surrounding area.

Waste Water Treatment Plant

It is proposed to construct a new waste water treatment plant on a greenfield site 0.25 km to the west of Courtmacsherry and that this plant will serve the village of Timoleague and Courtmacsherry. The waste water treatment plant will be phased to cater for a load from Timoleague of 1,500 for the year 2015 (Phase 1) and 2,020 pe for horizon year 2030 (Phase 2) with sewer network designed for 2,620 pe for horizon year 2055.

Detailed design of the proposed treatment plant has not yet been carried out. A typical plant would consist in this case of screening, aeration, settlement with return of sludge and sludge treatment and removal and will also include storm water storage.

The preferred option for the outfall is to be located at the existing Courtmacsherry outfall point. It is proposed that UV disinfection be installed at the WWTP due to the fact that Courtmacsherry Bay is used as an amenity area for fishing and water sports.

The treated effluent quality standard for the Waste Water Treatment Plant is to comply with the E.U. Urban Waste Water Treatment Directive Standards which are as follows:

- BOD 25mg/l
- COD 125mg/l
- Total Suspended Solids 35mg/l

Tertiary treatment to remove phosphorus and total nitrogen may also be required in the future if the combined population of Timoleague and Courtmacsherry increases above 10,000 PE or Courtmacsherry Bay gets designated a sensitive water. It is recommended that sufficient land shall be obtained for the WWTP in order that additional process units can be added to the plant if this situation arises in the future.

The sludge disposal proposals for the Timoleague Sewerage Scheme will be in accordance with the County Cork Sludge Management Plan which is currently under review.

C.1.1 Storm Water Overflows

For each storm water overflow within the waste water works the following information shall be submitted:

- An assessment to determine 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, and
- Identify whether any of the storm water overflows are to be decommissioned, and identify a date by which these overflows will cease, if applicable.

### C.1.2 Pumping Stations

For each pump station operating within the waste water works, provide details of the following:

- Number of duty and standby pumps at each pump station;
- The measures taken in the event of power failure;
- Details of storage capacity at each pump station;
- Frequency and duration of activation of emergency overflow to receiving waters. Clarify the location where such discharges enter the receiving waters.

The following is an extract from the Preliminary Report prepared for the Upgrading of Courtmacsherry Sewerage Scheme regarding storm water overflows:

#### ***“Receiving Waters and Overflow Frequency***

Under the proposed scheme, the new WWTP(s) and pumping stations will be required to deal with influent storm water from the combined sewer system(s). Storm water storage will therefore be provided at the WWTP site. Storm water pumping will be investigated at some of the pumping stations. A number of regulations and guidelines govern the frequency and quality of storm water discharges from combined sewer systems into rivers and estuarial waters. These principally include the Urban Wastewater Treatment Directive (UWWTD) and the DEHLG Procedures and Criteria in relation to Storm Water Overflows (1993).

Network models using the <InfoWorks> software package can be used to establish the storage volume requirements to meet the criteria for potential CSO spills to the identified bathing or recreational waters.

The type of screen used to achieve the requirements should be the screenings retention type and not of the removal type. That is, the screenings intercepted by the screen should be retained in the sewer system and not removed for separate disposal. This will reduce running and maintenance costs of screening at storm water overflows.”

#### ***Overflow to Courtmacsherry Bay***

Courtmacsherry Estuary is currently not designated as a bathing or contact/recreational use water. There are however a number of locations in the estuary where the waters are used by bathers. In deciding the minimum requirement with regard to frequency and quality of storm water spilling into the Estuary under the proposed system, due regard must be taken for current usage and any future re-designation of the Estuary to an amenity or recreational status. It is therefore prudent to set a minimum requirement now rather than redesigning the pumping regime in the future.

The Estuary forms an integral part of the landscape of Courtmacsherry / Timoleague. The estuary runs from the mouth of the Ardigeen River at Timoleague as far as 'Wood Point' which is the so named headland area approximately 4.5km east of Courtmacsherry Harbour. The estuary is a valued angling location, although this activity has declined over the last decade. It is anticipated that recent dredging of the harbour at Courtmacsherry should assist in reviving sea angling within the area. On the southern side of the estuary there are a number of areas used by bathers. The main bathing area is located east of Courtmacsherry Hotel.

It is therefore proposed to regard the Estuary as a designated contact/recreational water and apply the relevant DEHLG 'Procedures and Criteria in relation to Storm Water Overflows' (1993) standards as listed above regarding the allowable number of spills per annum. This can be summarised as follows:

- The maximum number of independent storm events discharging via storm water overflows affecting water contact/recreational use waters must not, on average, exceed 7 times per bathing season;
- Normally the incoming flow must exceed that calculated from "Formula A" before the storm water overflow spills unless there are high dilutions available;
- Discharge flows are required to be screened to at least 10mm and where the frequency of spill is greater than once per year, 80% of the volume should be screened to at least 6mm.

### **Conclusions**

In the context of Timoleague Sewerage Scheme, the current relevant standards were applied to the overflows from the pumping station, and these were then input to the hydraulic model. Using the model it was decided to limit storm overflows from the pumping stations to Courtmacsherry Bay to 7 (seven) spills per bathing season or flows in excess of Formula A, which ever is more stringent. Storm tanks will be required at the WWTP. The overall installation will comply fully with the criteria and guidelines discussed above.

It is also proposed to screen to 6mm and separate gross solids from the incoming flows.

### ***Proposed Options for Transfer of Flow from Timoleague to the Waste Water Treatment Plant***

The following hydraulic modelling methodology is used in order to calculate the volume of storage required and the pump rate at each pump station to meet criteria discussed in detail in Section 7.

Rainfall event data (RED) files with a return probability of 1 in 7 times per annum, summer and winter storms were produced in *InfoWorks*;

- The Formula A pumping rate was calculated adding the dry weather flow, a population multiplier and twice the existing industrial trade effluent. This resulted in a pump rate capacity of 70 l/s and 30 l/s at Harbour PS, Courtmacsherry and Timoleague PS respectively, (25 Year design horizon).
- The pumping rate required to only overflow 7 times in 1 bathing season was determined by adding all loading to the pumping station for the 1 in 7 time per annum synthetic storm. This resulted in a pump rate of 54 l/s and 59 l/s at Harbour PS and Timoleague PS respectively.

The UWWTD guidelines referred to above, stipulate Formula A as the minimum outflow setting and therefore the Formula A flows were adopted for the design pump capacity of Timoleague PS. The models were tested to ensure that spills did not exceed the 7 times in 1 year storm.

It should be noted that the design capacity adopted for Timoleague PS is 40 l/s, which although less than the 7 in 1 year flow (59 l/s), it is greater than the Formula A flow (30 l/s). The hydraulic model demonstrated that with pump capacity of 40 l/s, the 7 times a year spill regime was not exceeded. There is adequate storage in the way of 'on-line' storage in the 525mm diameter Collector Sewer and within the pump sump chamber. The model demonstrated that overflow incidences at the Timoleague PS should only occur under the 1 in 1 Year storm.

For the Design Option described below, overflows were modelled as an outfall. The flow to be pumped to the WWTP is regarded as the continuation flow at the overflow. All flows in excess of Formula A or 7 in 1 Year were diverted via an 'overflow' pipe. The volume of flow diverted for a 2 hour period, is the volume of storage required.



**Design Option - Pump Forward Formula A from Harbour PS, Courtmacsherry and 7 in 1 year from Timoleague PS; Provide Storage at WWTP**

Under this Option, the Harbour PS will pump at a rate equivalent to Formula A and the Timoleague PS will pump at a rate greater than Formula A. Storage would be required to store the difference between the hydraulic capacities of Harbour PS and Timoleague PS and full flow to treatment at the WWTP. No storage is required at the individual pump stations to comply with this overflow regime.

It is recommended that storage at the WWTP has a capacity capable of storing the difference between the total Formula A flow from Harbour PS and the Formula A flow from Timoleague PS and full flow to treatment (FFT at 3 DWF) for 2 hrs. Table 11.7 summarises the details.

<b>Table 11.7: Option Formula A / 7 in 1 Year Pumping Rate; WWTP Storage</b>				
<b>Harbour PS Rate (l/s)</b>	<b>Timoleague PS Rate (l/s)</b>	<b>FFT 3DWF (l/s)</b>	<b>WWTP Storage Volume (m3)</b>	<b>2 No. Storm Tank Dimensions * (m)</b>
70	40	43	483	5 x 14

\* Assuming liquid depth of 4m

This option is environmentally responsible as it proposes to pump at a rate to only allow storm overflows under a 1 in 1 year storm at Timoleague PS and 1 in 5 year storm at Harbour PS. Due to the ability of this option to meet the required standards, and the fact that the storm tank will be constructed in one location only (i.e. WWTP), and will not be constructed near development, this option is considered very attractive.

It is also recommended that duty / assist pumps are installed within Phase 1 at both pumping stations in order to cope with the variation in flows during the summer and winter months and to assist in reducing the retention time within the rising main. It is also recommended that during the detailed design stage that the option of a twin rising main from Timoleague to the WWTP be considered which would operate with a single rising main during the winter months during low flows and then the twin rising main would operate during the tourist season in the summer months.

Flows from Timoleague will be pumped to the WWTP via a 3.3km rising main. Consideration will be required during the design of the Timoleague Pumping Station and rising main to ensure that there is



sufficient turn over of flow (minimum of three changes per day) in order to prevent excessive detention that would cause septicity and possible odours. The septicity of the influent could also affect the operation of the WWTP.

Emergency overflows will be required at Timoleague PS.

The proposed pumping station and rising mains are summarised in Table 11.5 below.

<b>Table 11.5: Proposed Pumping Station and Rising Mains</b>							
<b>PS Name</b>	<b>Location</b>	<b>Sub-Areas Served</b>	<b>Area (ha)</b>	<b>Capacity (l/s)</b>	<b>Pipe size Req. (mm)</b>	<b>To Node</b>	<b>Pipe Length (m)</b>
Timoleague PS	Coast Road lwr, Sth. Timoleague	Whole Timoleague Catchment	32	40	180	WWTP	3,300

**Attachment C.1** should contain supporting documentation with regard to the plant and process capacity, systems, storm water overflows, emergency overflows, etc., including flow diagrams of each with any relevant additional information. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, D.2, E.3 and F.2.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
	✓	

**C.2 Outfall Design and Construction**

Provide details on the primary discharge point & secondary discharge points and storm overflows to include reference, location, design criteria and construction detail.

The existing Courtmacsherry Septic/Holding Tank discharges on a lunar cycle to Courtmacsherry Harbour via a 300mm diameter sea outfall which is proposed to be utilised for the combined Timoleague & Courtmacsherry outfall. The outfall pipe is approximately 170 metres long.

The following extract from the Preliminary Report for the upgrading of Courtmacsherry and Timoleague Sewerage Schemes carried out by J. B. Barry and Partners Ltd. deals with the proposed outfall details and location (Marine Survey Report included in Attachment F.1):

“In July 2004 Irish Hydrodata Limited conducted marine studies in Courtmacsherry Harbour. The study sought to provide detailed information on the marine environment in order to assist with the production of a hydrodynamic model for the area. Hydro Environmental Limited was commissioned by J.B. Barry and Partners Ltd. to develop a model to determine an optimum outfall and WWTP location.

The various aspects of the marine study included bathymetry, current measurements and measurement of wind and tidal level data. The study also included drogue and dye tracking exercises in order to establish tidal excursions and flow patterns at various stages of the tide. Water samples were also taken and analysed for various parameters.

Hydro Environmental Limited developed a model to determine an optimum outfall and WWTP location. A refined finite model of 15m by 15m was used to model Courtmacsherry Harbour. The study domain extended from Wood Point west to the mouth of the River Argideen at Timoleague.

Four potential outfall sites were investigated as part of the Outfall site selection process.

**Table 14.1 – Potential Outfall Sites**

	<b>Easting</b>	<b>Northing</b>	<b>Reference</b>
Outfall A	149100	043840	Midway in Estuary between Timoleague & Courtmacsherry
Outfall B	150732	042818	Courtmacsherry
Outfall C	152910	042350	Approaches west of Wood Point
Outfall D	147320	043540	Timoleague

Simulations were carried out modelling 3DWF (43 l/sec) faecal coliform loads at secondary treated concentration of  $2.2 * 10^5$  Counts/100ml. Simulations were carried out over repeating spring and neap tidal cycles.

The results indicate that Outfall B at the Existing outfall location meets all EU and Irish Legislation and is therefore the preferred option. The analysis shows that taking the outfall east of Courtmacsherry Harbour to Outfall C has some minor additional benefits over Outfall B. Whilst taking the outfall further east of Wood Point into the open sea had no additional benefits due to an eddie effect at Wood Point. The model showed that discharging near Timoleague (Outfall D) would result in a considerable build-up of pollutants and would be an unsuitable discharge location. This meant that the WWTP at Timoleague would have to pump its final effluent to Courtmacsherry for final discharge or pump foul flows to a combined WWTP at Courtmacsherry prior to discharge.

The model also confirms there was no requirement for a lunar clock discharge and that a continuous flow from the WWTP would allow for sufficient dilution of the final effluent.

A structural survey on the alignment and structural integrity of the existing outfall in the Bay has been undertaken and has been found to be in good order, therefore it is recommended that the existing outfall pipeline be retained and reused as the discharge point from the proposed new WWTP. Cork County Council has requested that due to the location of this existing outfall that UV disinfection is included at the WWTP due to the fact that Courtmacsherry Bay is used as an amenity area for fishing and water sports even though this is not a designated bathing area. There are currently no aquaculture licences within Courtmacsherry Bay and therefore the Shellfish Directive is not applicable.”

**Attachment C.2** should contain any supporting documentation on the design and construction of any and all discharge outfalls, including stormwater overflows, from the waste water works.

Attachment included	Yes	No
	✓	



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**SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT**

Advice on completing this section is provided in the accompanying Guidance Note.

Give particulars of the source, location, nature, composition, quantity, level and rate of discharges arising from the agglomeration and, where relevant, the period or periods during which such emissions are made or are to be made.

Details of all discharges of waste water from the agglomeration should be submitted via the following web based link: [http://78.137.160.73/epa\\_wwd\\_licensing/](http://78.137.160.73/epa_wwd_licensing/). The applicant should address in particular all discharge points where the substances outlined in Tables D.1(i), (b) & (c) and D.1(ii), (b) & (c) of Annex 1 are emitted.

Where it is considered that any of the substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are being discharged from the waste water works or are seen to be present in the receiving water environment downstream of a discharge from the works (as a result of any monitoring programme, e.g., under the Water Framework Directive Programme of Measures) the applicant shall screen the discharge for the relevant substance.

**D.1 Discharges to Surface Waters**

Details of all discharges of waste water from the agglomeration should be supplied via the following web based link: [http://78.137.160.73/epa\\_wwd\\_licensing/](http://78.137.160.73/epa_wwd_licensing/). Tables D.1(i)(a), (b) & (c), should be completed for the primary discharge point from the agglomeration and Tables D.1(ii)(a), (b) & (c) should be completed for **each** secondary discharge point, where relevant. Table D.1(iii)(a) should be completed for **each** storm water overflow. Individual Tables must be completed for each discharge point.

Where monitoring information is available for the influent to the plant this data should also be provided in response to Section D.1.

Supporting information should form **Attachment D.1**

Attachment included	Yes	No
		✓

## D.2 Tabular Data on Discharge Points

Applicants should submit the following information for each discharge point:

**Table D.2:**

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING
Point Code Provide label ID's	Point Type (e.g., Primary/Secondary/Storm Water Overflow)	Local Authority Name (e.g., Donegal County Council)	Receiving Water Body Type (e.g., River, Lake, Groundwater, Transitional, Coastal)	Receiving Water Body Name (e.g., River Suir)	Protected Area Type (e.g., SAC, candidate SAC, NHA, SPA etc.)	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference

An individual record (i.e. row) is required for each discharge point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at [www.epa.ie](http://www.epa.ie). This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, E.3 and F.2.

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING	VERIFIED
SW01TIMO	Primary Discharge Pt.	Cork County Council	Transitional	Courtmacsherry Estuary	pNHA, SAC	147200	043523	N
SW02TIMO	Secondary Discharge Pt.	Cork County Council	Transitional	Courtmacsherry Estuary	pNHA, SAC	147132	043496	N
SW03TIMO	Secondary Discharge Pt.	Cork County Council	Transitional	Courtmacsherry Estuary	pNHA, SAC	147141	043507	N
SW04TIMO	Secondary Discharge Pt.	Cork County Council	Transitional	Courtmacsherry Estuary	pNHA, SAC	147209	043702	N
SW05TIMO	Secondary Discharge Pt.	Cork County Council	Transitional	Courtmacsherry Estuary	pNHA, SAC	147176	043789	N

**SECTION E: MONITORING**

Advice on completing this section is provided in the accompanying Guidance Note.

**E.1 Waste Water Discharge Frequency and Quantities – Existing & Proposed**

Provide an estimation of the quantity of waste water likely to be emitted in relation to all primary and secondary discharge points applied for. This information should be included in Table E.1(i) via the following web based link: [http://78.137.160.73/epa\\_wwd\\_licensing/](http://78.137.160.73/epa_wwd_licensing/).

Provide an estimation of the quantity of waste water likely to be emitted in relation to all storm water overflows within the agglomeration applied for. This information should be included in Table E.1(ii) via the following web based link: [http://78.137.160.73/epa\\_wwd\\_licensing/](http://78.137.160.73/epa_wwd_licensing/).

Indicate if composite sampling or continuous flow monitoring is in place on the primary or any other discharge points. Detail any plans and timescales for the provision of composite sampling and continuous flow meters.

No composite sampling or continuous flow monitoring is in place at present on any of the discharge points. Sampling facilities and continuous flow meters will be provided when new Waste Water Treatment Plant is in place with likely timeframe for completion of works to be June 2014.

**E.2. Monitoring and Sampling Points**

Programmes for environmental monitoring should be submitted as part of the application. These programmes should be provided as Attachment E.2.

Reference should be made to, provision of sampling points and safe means of access, sampling methods, analytical and quality control procedures, including equipment calibration, equipment maintenance and data recording/reporting procedures to be carried out in order to ensure accurate and reliable monitoring.

In determining the sampling programme to be carried out, the variability of the emission and its effect on the receiving environment should be considered.

Details of any accreditation or certification of analysis should be included.

**Attachment E.2** should contain any supporting information.

Attachment included	Yes	No
	✓	

**E.3. Tabular data on Monitoring and Sampling Points**

Applicants should submit the following information for each monitoring and sampling point:

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
Point Code Provide label ID's assigned in section E of application	Point Type (e.g., Primary, Secondary, Storm Water Overflow)	Monitoring Type M = Monitoring S = Sampling	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used

An individual record (i.e., row) is required for each monitoring and sampling point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at [www.epa.ie](http://www.epa.ie). This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, D.2 and F.2.

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
SW01TIMO	Primary	S	147200	43523	N
SW02TIMO	Secondary	S	147132	43496	N
SW04TIMO	Secondary	S	147209	43702	N
SW05TIMO	Secondary	S	147176	43789	N
aSW01u TIMO	Receiving Water	S	146486	45753	N
aSW01d TIMO	Receiving Water	M	150426	43277	N

**E.4 Sampling Data**

Regulation 16(1)(h) of the Waste Water Discharge (Authorisation) Regulations 2007 requires all applicants in the case of an existing waste water treatment plant to specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application.

Regulation 16(1)(l) of the regulations requires applicants to give details of compliance with any applicable monitoring requirements and treatment standards.

**Attachment E.4** should contain any supporting information.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
	✓	

## SECTION F: EXISTING ENVIRONMENT & IMPACT OF THE DISCHARGE(S)

*Advice on completing this section is provided in the accompanying Guidance Note.*

Detailed information is required to enable the Agency to assess the existing receiving environment. This section requires the provision of information on the ambient environmental conditions within the receiving water(s) upstream and downstream of any discharge(s).

Where development is proposed to be carried out, being development which is of a class for the time being specified under Article 24 (First Schedule) of the Environmental Impact Assessment Regulations, the information on the state of the existing environment should be addressed in the EIS. **In such cases, it will suffice for the purposes of this section to provide adequate cross-references to the relevant sections in the EIS.**

### F.1. Assessment of Impact on Receiving Surface or Ground Water

- Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

The following is an extract from the Preliminary Report carried out by J. B. Barry & Partners Consulting Engineers for the proposed Courtmacsherry & Timoleague Sewerage Schemes. This relates to the proposed common outfall location for the two villages and its impact on environment.

“In July 2004 Irish Hydrodata Limited conducted marine studies in Courtmacsherry Harbour. The study sought to provide detailed information on the marine environment in order to assist with the production of a hydrodynamic model for the area. Hydro Environmental Limited was commissioned by J.B. Barry and Partners Ltd. to develop a model to determine an optimum outfall and WWTP location.

The various aspects of the marine study included bathymetry, current measurements and measurement of wind and tidal level data. The study also included drogue and dye tracking exercises in order to establish tidal excursions and flow patterns at various stages of the tide. Water samples were also taken and analysed for various parameters.

Hydro Environmental Limited developed a model to determine an optimum outfall and WWTP location. A refined finite model of 15m by 15m was used to model Courtmacsherry Harbour. The study domain extended from Wood Point west to the mouth of the River Argideen at Timoleague.

Four potential outfall sites were investigated as part of the Outfall site selection process.



**Table 14.1 – Potential Outfall Sites**

	<b>Easting</b>	<b>Northing</b>	<b>Reference</b>
Outfall A	149100	43840	Midway in Estuary between Timoleague & Courtmacsherry
Outfall B	150732	042818	Courtmacsherry
Outfall C	152910	42350	Approaches west of Wood Point
Outfall D	147320	43540	Timoleague

Simulations were carried out modelling 3DWF (43 l/sec) faecal coliform loads at secondary treated concentration of  $2.2 * 10^5$  Counts/100ml. Simulations were carried out over repeating spring and neap tidal cycles.

The results indicate that Outfall B at the Existing outfall location meets all EU and Irish Legislation and is therefore the preferred option. The analysis shows that taking the outfall east of Courtmacsherry Harbour to Outfall C has some minor additional benefits over Outfall B. Whilst taking the outfall further east of Wood Point into the open sea had no additional benefits due to an eddy effect at Wood Point. The model showed that discharging near Timoleague (Outfall D) would result in a considerable build-up of pollutants and would be an unsuitable discharge location.

The model also confirms there was no requirement for a Lunar clock discharge and that a continuous flow from the WWTP would allow for sufficient dilution of the final effluent.

A structural survey on the alignment and structural integrity of the existing outfall in the Bay has been undertaken and has been found to be in good order, therefore it is recommended that the existing outfall pipeline be retained and reused as the discharge point from the proposed new WWTP. Cork County Council has requested that due to the location of this existing outfall that UV disinfection be included at the WWTP due to the fact that Courtmacsherry Bay is used as an amenity area for fishing and water sports even though this is not a designated bathing area. As there are currently no aquaculture licences within Courtmacsherry Bay therefore the Shellfish Directive is not applicable.”

- Details of all monitoring of the receiving water should be supplied via the following web based link: [http://78.137.160.73/epa\\_wwd\\_licensing/](http://78.137.160.73/epa_wwd_licensing/). Tables F.1(i)(a) & (b) should be completed for the primary discharge point. Surface water monitoring locations upstream and downstream of the discharge point shall be screened for those substances listed in Tables F.1(i)(a) & (b). Monitoring of surface water shall be carried out at not less than two points, one upstream from the discharge location and one downstream.
- For discharges from secondary discharge points Tables F.1(ii)(a) & (b) should be completed. Furthermore, provide summary details and an assessment of the impacts of any existing or proposed emissions on the surface water or ground (aquifers, soils, sub-soils and rock environment), including any impact on environmental media other than those into which the emissions are to be made.

- Provide details of the extent and type of ground emissions at the works. For larger discharges to groundwaters, e.g., from Integrated Constructed Wetlands, large scale percolation areas, etc., a comprehensive report must be completed which should include, inter alia, topography, meteorological data, water quality, geology, hydrology, and hydrogeology. The latter must in particular present the aquifer classification and vulnerability. The Geological Survey of Ireland Groundwater Protection Scheme Dept of the Environment and Local Government, Geological Survey of Ireland, EPA (1999) methodology should be used for any such classification. This report should also identify all surface water bodies and water wells that may be at risk as a result of the ground discharge.

No discharges to groundwater take place in the agglomeration.

- Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative standards. Submit a copy of the most recent water quality management plan or catchment management plan in place for the receiving water body. Give details of any designation under any Council Directive or Regulations that apply in relation to the receiving water.

Courtmacsherry Estuary into which the discharges takes place is a Special Area of Conservation and a proposed National Heritage Area.

The following is an extract from the Preliminary Report carried out by J. B. Barry & Partners Consulting Engineers for the proposed Courtmacsherry & Timoleague Sewerage Schemes. This relates to the outfall location and its impact on environment.

### "Courtmacsherry Bay

The Argideen River flows fourteen miles to the estuary at Timoleague and joins the sea at the village of Courtmacsherry. The Courtmacsherry estuary is quite shallow at the western (Timoleague) end, with deeper water near Courtmacsherry itself.

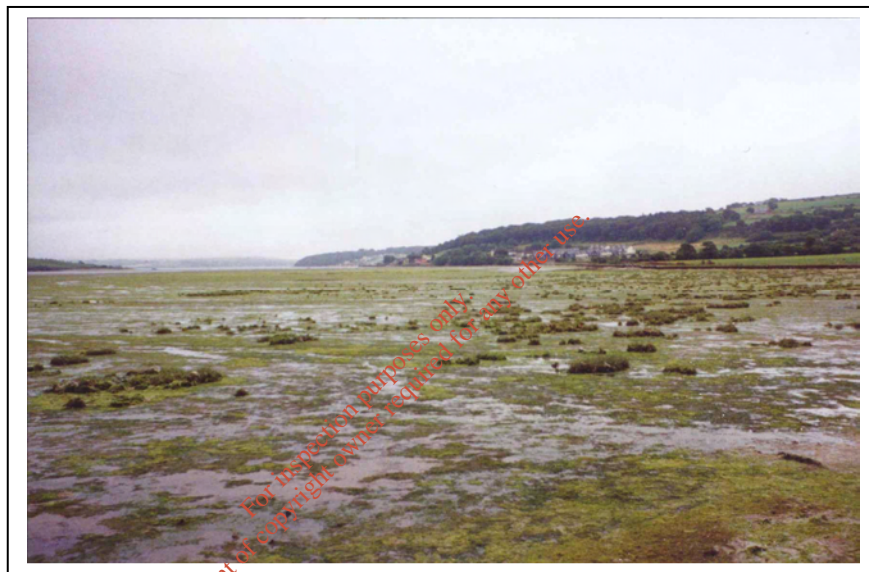
Courtmacsherry Bay and estuary has a number of beneficial uses including:

- **Amenity:** The estuary offers attractive scenic views from Courtmacsherry and Timoleague.
- **Angling:** Courtmacsherry has established itself as one of Ireland's premier Sea Angling resorts. The clean Atlantic waters warmed by the Gulf Stream add to the prolific marine life and species of fish, which live off the shore. Shore fishing is also carried out in the Estuary for bass, bot and harder.
- **Swimming:** The estuary is used for swimming at the eastern end of Courtmacsherry village.

- **Receiving Water:** The estuary is the receiving water for discharges from the Courtmacsherry septic tank.

Courtmacsherry Bay is subject to extensive algal growths see Figure 7.2, which on decaying in warm weather produces a strong smell. These growths generally consist of two or more algae, manifesting as extensive greening of the mudflats. Wave action causes these growths and other seaweeds/algae at sea to loosen and become deposited onshore where they rot in warm weather causing strong smells.

Agricultural run-off from surrounding farms is one of the main diffuse sources of nutrients in Courtmacsherry Bay.



**Figure 7.2: Algal Growths – Courtmacsherry Bay**

The quality of estuarine and coastal waters is usually monitored by a number of government and regulatory agencies, including EPA, Coastal Local Authorities, the Marine Institute’s Fisheries Research Centre (FRC), various arms of the Department of the Marine and Natural Resources and the Radiological Protection Institute of Ireland.

Cork County Council has limited water quality data available on Courtmacsherry Estuary and Bay. Water samples were taken by Cork County Council on the 23<sup>rd</sup> of July 2003 at Courtmacsherry Bay and were found to be below the standards (i.e. within the limits) for the Quality of Bathing Water Directive (76/160/EC) Guideline Levels, National Limit Values and the more stringent Blue Flag Criteria. The results are shown below in Table 7.5.

**Table 7.5: Courtmacsherry Water Samples by Cork County Council**

<b>Date</b>	<b>Total Coliforms / 100ml</b>	<b>Faecal Coliforms / 100ml</b>	<b>Faecal Streptococci / 100ml</b>
23 July 2003	43	12	24
<b>Quality of Bathing Water Directive</b> Guideline Values (lower limit)	500	100	-
<b>NLVs</b>	5,000	1,000	-

As part of the Marine Survey undertaken by JB Barry & Partners Ltd., water samples were taken at seven locations within the survey area. The locations are as follows;

1. Coolmain
2. Burren Quay
3. Argideen River
4. Timoleague Estuary
5. Courtmacsherry Strand
6. Wood Point
7. Broadstrand Bay

These locations are shown in Appendix 2.13. The results of the analysis are presented below.

(Sample 1 = Coolmain; Sample 2 = Burren Quay; Sample 3 = Argideen River; Sample 4 = Timoleague Estuary; Sample 5 = Courtmacsherry Strand; Sample 6 = Wood Point; Sample 7 = Broadstrand Bay)

Under the Quality of Bathing Waters Regulations 1992 (S.I No. 155 of 1992) (EC Directive concerning the quality of Bathing Waters in Ireland (76/160/EEC)) the samples taken at Burren Quay, Timoleague River and Timoleague Estuary exceed the guide value of 500/100mls of Total Coliforms. The Total Coliform level at Wood Point is also high at 488 MPN/100mls.

The EPA has developed a set of criteria for evaluating the key features of eutrophication in Irish Estuaries, Bays and near shore Coastal Waters. These criteria are laid out in the EPA Book 'Water Quality in Ireland 2001 – 2003'.

The water samples taken at seven locations were analysed for various criteria. Table 7.6 below shows the sample analyses results;

**Table 7.6 - Courtmacsherry Water Samples – August 5<sup>th</sup> 2004**

Sample	pH	BOD (mg O <sub>2</sub> /l)	SS (mg/l )	Salinity (ppt)	Total Ammonia (mg N/l)	Ortho- phosphate (mg P/l)	Total Phosphoru s (mg P/l)	Nitrite (mg N/l)	Nitrate (mg N/l)
1				34.2	0.035				0.051
2				33.9	0.040				0.055
3				22.4	0.026				0.980
4	7.98	4.0	236	29.5	0.038	0.017	0.290	0.008	0.277
5	8.22	1.3	19.3	34.1	0.041	0.004	0.031	0.000	0.067
6	8.14	1.6	8.2	33.9	0.039	0.004	0.023	0.001	0.041
7				33.6	0.037				0.056

Sample	Total Ammonia (mg N/l)	NH <sub>3</sub> (mg N/l)	NH <sub>4</sub> (mg N/l)	DIN (mg N/l)	Total Coliform MPN/100mls	E-Coli MPN/100 mls
1	0.035	0.00175	0.03325	0.08425	184	31
2	0.040	0.002	0.038	0.093	816	250
3	0.026	0.0013	0.0247	1.0047	840	284
4	0.038	0.0019	0.0361	0.3211	630	378
5	0.041	0.00205	0.03895	0.10595	250	79
6	0.039	0.00195	0.03705	0.07905	488	117
7	0.037	0.00185	0.03515	0.09115	117	71

**Molybdate Reactive Phosphorus (MRP)** - for this report ortho-phosphate will be compared to Molybdate Reactive Phosphorus (MRP) as they are almost the same.

**Dissolved Inorganic Nitrogen (DIN)** – sum of Nitrate, Nitrite (Total Organic Nitrogen, TON) and Ammonium

The analysis results are discussed below.

#### Sample 1 - Coolmain

Salinity: 34.2ppt  
 Dissolved Inorganic Nitrogen: 0.084 mg N/l  
 MRP: No Data

On comparison with the EPA Criteria for evaluating eutrophication in Irish estuaries, Bays and Nearshore Coastal Waters, which is included within the EPA book “Water Quality in Ireland – 2001 – 2003”.

On the 5th of August 2004, Coolmain had a salinity of 34.2ppt and a DIN of 0.084 mg/l N. The EPA states that a water sample with a salinity of 34ppt should have a DIN value of 0.314mg/l N or less in order to prevent eutrophication. As Coolmain had a DIN value of 0.084 mg/l N eutrophication is not thought to be a problem.

**Sample 2 – Burren Quay**

Salinity:	33.9ppt	
Dissolved Inorganic Nitrogen:		0.093 mg N/l
MRP:	No Data	

Burren Quay had a salinity of 33.9ppt and a DIN of 0.093 mg/l N. The EPA states that a water sample with a salinity of 34ppt should have a DIN value of 0.314mg/l N or less in order to prevent eutrophication. As Burren Quay had a DIN value of 0.093 mg/l N eutrophication is not thought to be a problem.

**Sample 3 – Argideen River**

Salinity:	22.4	
Dissolved Inorganic Nitrogen:		1.00 mg N/l
MRP:	No Data	

The Argideen River was found to have a salinity of 22.4ppt and a DIN value of 1.00 mg/l N. The EPA states that a water sample with a salinity of 22ppt should have a DIN value of 1.081mg/l N or less in order to prevent eutrophication. This area is at risk of eutrophication as there is only 0.081mg/l difference between the EPA Criteria and what was sampled.

**Sample 4 – Timoleague Estuary**

Salinity:	29.5	
Dissolved Inorganic Nitrogen:		0.321 mg N/l
MRP:	17 ug/l P	

Timoleague Estuary has a salinity of 29.5ppt, a DIN value of 0.321 mg/l N and an MRP value of 17 ug/l P. The EPA states that a water sample with a salinity of 29ppt should have a DIN of less than 0.633 mg/l and a MRP of less than 47 ug/l. According to these results Timoleague Estuary is not at risk of eutrophication.

**Sample 5 – Courtmacsherry Strand**

Salinity:	34.1	
Dissolved Inorganic Nitrogen:		0.106 mg N/l
MRP:	4 ug/l P	

Courtmacsherry Strand has a salinity of 34.1ppt, a DIN value of 0.106 mg/l N and an MRP value of 4 ug/l P. The EPA states that a water sample with a salinity of 34ppt should have a DIN of less than 0.314 mg/l and a MRP of less than 41 ug/l. According to these results Courtmacsherry Strand is not at risk of eutrophication.

**Sample 6 – Wood Point**

Salinity: 33.9  
 Dissolved Inorganic Nitrogen: 0.079 mg N/l  
 MRP: 4 ug/l P

Wood Point has a salinity of 33.9 ppt, a DIN value of 0.079 mg/l N and an MRP value of 4 ug/l P. The EPA states that a water sample with a salinity of 34ppt should have a DIN of less than 0.314 mg/l and a MRP of less than 41 ug/l. According to these results Wood Point is not at risk of eutrophication.

#### Sample 7 – Broadstrand Bay

Salinity: 33.6  
 Dissolved Inorganic Nitrogen: 0.091 mg N/l  
 MRP: No Data

Broadstrand Bay has a salinity of 33.6 ppt and a DIN value of 0.091 mg/l N. The EPA states that a water sample with a salinity of 34ppt should have a DIN of less than 0.314 mg/l. According to these results Broadstrand Bay is not at risk of eutrophication.

Therefore in summary, from the seven samples taken on the 5<sup>th</sup> August 2004 only Sample 3 (Argideen River) was at risk of eutrophication. However, the above results were taken on one day only, and cannot be considered representative for a longer period. The results appear to be good and this may be due to the dissolved inorganic nitrogen being taken up in algal growth.”

- Provide a statement as to whether or not emissions of main polluting substances (as defined in the *Dangerous Substances Regulations S.I. No. 12 of 2001*) to water are likely to impair the environment.

As the source of the waste water in Courtmacsherry is essentially domestic it is not considered likely that emissions of main polluting substances will impair the environment.

- In circumstances where water abstraction points exist downstream of any discharge describe measures to be undertaken to ensure that discharges from the waste water works will not have a significant effect on faecal coliform, salmonella and protozoan pathogen numbers, e.g., *Cryptosporidium* and *Giardia*, in the receiving water environment.

No water abstraction points exist downstream of any discharge.

- Indicate whether or not emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have a significant effect on –
  - (a) a site (until the adoption, in respect of the site, of a decision by the European Commission under Article 21 of Council Directive 92/43/EEC for the purposes of the third paragraph of Article 4(2) of that Directive) –



- (i) notified for the purposes of Regulation 4 of the Natural Habitats Regulations, subject to any amendments made to it by virtue of Regulation 5 of those Regulations,
  - (ii) details of which have been transmitted to the Commission in accordance with Regulation 5(4) of the Natural Habitats Regulations, or
  - (iii) added by virtue of Regulation 6 of the Natural Habitats Regulations to the list transmitted to the Commission in accordance with Regulation 5(4) of those Regulations,
- (b) a site adopted by the European Commission as a site of Community importance for the purposes of Article 4(2) of Council Directive 92/43/EEC<sup>1</sup> in accordance with the procedures laid down in Article 21 of that Directive,
  - (c) a special area of conservation within the meaning of the Natural Habitats Regulations, or
  - (d) an area classified pursuant to Article 4(1) or 4(2) of Council Directive 79/409/EEC<sup>2</sup>;

<sup>1</sup>Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ No. L 206, 22.07.1992)

<sup>2</sup>Council Directive 79/409/EEC of 7 April 1979 on the conservation of wild birds (OJ No. L 133, 25.4.1979)

- o Describe, where appropriate, measures for minimising pollution over long distances or in the territory of other states.

The following excerpts from the Preliminary Report on the Upgrading of the Courtmacsherry and Timoleague Sewerage Schemes prepared by J. B. Barry & Partners Consulting Engineers deals with the effluent quality standards taken into account in the design of the upgrade of the Timoleague Sewerage Scheme and with the studies carried out in relation to the impact on the environment including the impact from the options considered for the siting of the proposed Waste Water Treatment Plant.



## “LEGISLATION AND EFFLUENT QUALITY STANDARDS

### *Introduction*

The methodology adopted in determining the required effluent quality standards for the discharges from the proposed WWTP(s) is as follows:-

- Establish the beneficial uses of the receiving water
- Review the current legislation (mandatory standards and guideline values)
- Determine the Effluent Quality Standards which will ensure the quality of the receiving water achieves its required standards

The standards so determined must then be set against the regulatory standards, which must be achieved, and appropriate standards selected. The relevant legislation is as follows: -

- EC Directive (91/271/EEC) concerning Urban Waste Water Treatment
- EC Directive (76/160/EEC) on the Quality of Bathing Waters
- EC Directive (79/923/EEC) on the Quality of Shellfish Waters

The EC Directives are given effect in Irish Law by Statutory Instruments.

### *Legislation and Development*

The situation regarding effluent treatment and disposal has undergone significant change throughout the 70's, 80's, 90's and up to the present time. In the early part of this period, the design standards generally adopted were (Royal Commission) standards that required BOD and Suspended Solids level in the receiving water of 3-4 mg/l. Primary sedimentation followed by disposal through a short sea outfall would produce compliance with these standards. There has been significant development of legislation with regards to the collection and treatment of sewage waste since then.

The European Commission (E.C.), in 1976, introduced the E.C. Directive on the Quality of Bathing Waters (76/160/EC). The Minister of the Environment published in 1980, the Irish National Limit Values (NLVs), which relates to the quality of bathing waters. These are enshrined in the Quality of Bathing Water Regulations, 1992. The NLVs and the E.C. Bathing Water Directive limits are presented in Table 6.1.

The Quality of Bathing Water Regulations also state that to ensure conformance with the Regulations 80% of the samples must comply with the NLVs and 95% of the samples must comply with mandatory values.

**Table 6.1 Quality of Bathing Water Regulations – Guideline Levels**

	<b>Total Coliforms</b>	<b>Faecal Coliforms</b>
<b>Directive on the Quality of Bathing Waters (76/160/EC)</b>		
Guideline	500 / 100ml	100 / 100ml
Mandatory	10,000 / 100ml	2,000 / 100ml
<b>Irish National Limit Value (1980)</b>		
NLV	5,000 / 100ml	1,000 / 100ml

Another major "milestone" in effluent treatment/disposal policy came with the introduction in 1991 by the European Commission of the E.C. Directive on Urban Waste Water Treatment (91/271/E.E.C.). In January 1990 the Minister for the Environment dedicated Ireland's Environmental Action Programme to complying with the requirements of the E.C. Urban Waste Water Directive, which was then available in draft form. This programme set policy objectives and target dates for the Irish Waste Water Disposal Industry.

The EC Directive concerning Urban Wastewater Treatment (Urban Waste Water Treatment Directive 91/271/EEC) represents a fundamental change in this approach as it provides for uniform emission standards. The Directive specifies uniform limits or maximum concentration values and a percentage reduction of pollutants. These standards are not related to the nature and quantity of the wastewater, the available dilutions or assimilative capacity or to the beneficial uses of the receiving waters.

The EU Urban Waste Water Treatment Directive (91/271/EEC) sets standards for the physical/ chemical parameters of treated effluent. These standards are shown in Table 6.2.

**Table 6.2 Urban Waste Water Treatment Directive Effluent Standards**

<b>Parameter</b>	<b>Maximum Concentration Column 1</b>	<b>Minimum % Reduction Column 2</b>
Biochemical Oxygen Demand (BOD <sub>5</sub> )	25mg/l	70 - 90
Chemical Oxygen Demand (COD)	125mg/l	75
Total Suspended Solids (TSS)	35mg/l	90

## ENVIRONMENTAL STUDIES

### *Introduction*

In accordance with the EC (Environmental Impact Assessment) Regulations 1989 to 1999 an Environmental Impact Statement (EIS) is required for a WWTP if the design PE is greater than 10,000 PE. The design PE for the combined Courtmacsherry and Timoleague Municipal WWTP is approximately 5,000 for the year 2030 and hence an EIS is not a statutory requirement. However, a number of environmental studies have been carried out that will facilitate the design of the scheme and the planning application process. These include Outfall Modelling Reports, a Flora and Fauna Study and an Archaeology Study.

The Environmental Studies assesses the various impacts that will result from the proposed development. Where significant adverse impacts are likely to occur, the studies identify appropriate mitigation measures in the design or construction of the project. The environmental studies are summarised below.

### *Environmental status*

J B Barry and Partners have reviewed current legislation including the Bathing Water Directive, Shellfish Directive, Habitats Directive and Blue Flag Beach lists to determine whether any environmentally sensitive areas are close to the proposed WWTP and the Outfall.

Special Areas of Conservation (SAC) status exists in Courtmacsherry Bay. This shall be taken into account when designing the outfall location and diffuser structure.

### *Outfall Modelling Report*

J B Barry and Partners have commissioned Hydro Environmental Ltd. to prepare an Outfall Model Study to assess the most feasible and environmentally suitable outfall location. Full details of the Outfall Model are contained in Volume 3.

### *Flora and Fauna Study*

An Ecological Constraints Flora and Fauna Report were prepared by Natura Environmental Consultants (Natura) in January 2005.

The objective of the consultants report was to identify ecological issues that are to be taken into account at both national and local level when planning and designing the proposed development. This report focused on the proposed sewerage pipeline route and the location of the WWTP(s) and outfall point.

The study consisted of a baseline survey of the flora and fauna along the proposed pipeline and at the proposed locations of the treatment works and pumping station.

The following are the main ecological features in the Courtmacsherry and Timoleague area.

**Rare Plants** – There are a number of rare plants found in the Courtmacsherry and Timoleague area. There are records of rare plant species, sea kale, occurring on shingle in the Courtmacsherry Area. Additionally, tor-grass (*Brachypodium pinnatum*), a rarely occurring grass was recorded on cliffs between Broad strand and Wood Point.

**Fauna** – Courtmacsherry estuary is of ornithological importance for the many waders and wildfowl that feed on the mud and sandflats. The otter is also likely to use to the estuary and to occur along the banks of the Argideen River. The principle constraint relating to fauna is the potential impact on bird feeding sites and high tide roosts. It is therefore recommended that construction be carried out during the **summer months** to lessen the temporary impact of disturbance to the birds.

**Main waterways and fisheries** – The Argideen River is an important sea trout river and holds good stocks of brown trout. In Courtmacsherry Bay the fish species caught include mullet, mackerel and plaice.

**Designation** - The main ecological constraint is that Courtmacsherry estuary is designated a proposed Natural Heritage Area (pNHA) and a Special Area of Conservation (SAC) (site code 001230). The pNHA and SAC cover the entire estuary from the lower reaches of the Argideen River in Timoleague to the mouth of the estuary at Wood Point. The SAC designation continues along the sea cliffs and includes Broad Strand. Along the proposed route, the designated area boundary follows the R601 road. At Wood Point the designation also includes an area of woodland.

The principal ecological constraints including designation, habitats and important areas for flora and fauna are presented in Table 16.1 below.

**Table 16.1 - Principal ecological constraints of wastewater treatment plant site locations\* and sewerage pipe line route.**

Ecological Constraint	WWTP locations and sewerage pipe route
SAC	Site 1, 2, 3, 4, 5 and sewerage pipe route
Tidal River	Site 1,
Salt marsh	Site 1, sewerage pipe route
Shingle and gravel shores	Survey required
Sand shore/muddy sand sores	Site 2, 3, 4, sewerage pipe route
Rocky sea cliffs	Site 5
Woodland/ mature trees	Site 4, site 5, sewerage pipe route
Rare plant	Survey required of shingle shores (if present)
Feeding site for wintering birds	Site 1, Site 3 (fields)
Roost site for wintering birds	Site 1

**In conclusion**

- The proposed WWTP at Site 1 (Timoleague village) is the least suitable location in terms of ecological constraints. This area contains important saltmarsh habitat (Annex 1, EU Habitats Directive) and is the most important high tide roost for wintering birds in the estuary.
- Construction of a WWTP in the agricultural fields of proposed Site 3 (Peters Point) would impact on an important feeding site for birds.
- Proposed Sites 2, 4 and 5 would have least impacts on coastal habitats and important bird feeding and roosting sites.
- The construction should be scheduled outside of months September to March inclusive as this is when birds reach peak numbers.

\*

- Site 1 – Timoleague – South of Village
- Site 2 – Field 2.0 km east of Timoleague
- Site 3 – Field 0.25 km west of Courtmacsherry and 0.5 km east of Ballynamona House (preferred site)
- Site 4 – Within Courtmacsherry Village at the existing Septic Tank
- Site 5 – Upon Cliff at Wood Point

Based on the technical, economic and environmental criteria Site 3 is the preferred site option for the location of the WWTP.

Attachment F.1 contains Hydraulic Modelling and Ecology reports.

- This section should also contain full details of any modelling of discharges from the agglomeration. Full details of the assessment and any other relevant information on the receiving environment should be submitted as **Attachment F.1.**

Attachment included	Yes	No
	✓	

**F.2 Tabular Data on Drinking Water Abstraction Point(s)**

Applicants should submit the following information for each downstream or downgradient drinking water abstraction point. The zone of contribution for the abstraction point should be delineated and any potential risks from the waste water discharge to the water quality at that abstraction point identified.

ABS_CD	AGG_SERVED	ABS_VOL	PT_CD	DIS_DS	EASTING	NORTHING	VERIFIED
Abstraction Code	Agglomeration served	Abstraction Volume in m <sup>3</sup> /day	Point Code Provide label ID's	Distance Downstream in meters from Emission Point to Abstraction Point	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used

**Note:** Attach any risk assessment that may have been carried out in relation to the abstraction point(s) listed.

An individual record (i.e. row) is required for each abstraction point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at [www.epa.ie](http://www.epa.ie). This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, D.2 and E.3.

There are no drinking water abstraction points downstream of the discharges from Courtmacsherry agglomeration.

**Attachment F.2** should contain any supporting information.

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## SECTION G: PROGRAMMES OF IMPROVEMENTS

*Advice on completing this section is provided in the accompanying Guidance Note.*

### **G.1 Compliance with Council Directives**

Provide details on a programme of improvements to ensure that emissions from the agglomeration or any premises, plant, methods, processes, operating procedures or other factors which affect such emissions will comply with, or will not result in the contravention of the;

- Dangerous Substances Directive 2006/11/EC,
- Water Framework Directive 2000/60/EC,
- Birds Directive 79/409/EEC,
- Groundwater Directives 80/68/EEC & 2006/118/EC,
- Drinking Water Directives 80/778/EEC,
- Urban Waste Water Treatment Directive 91/271/EEC,
- Habitats Directive 92/43/EEC,
- Environmental Liabilities Directive 2004/35/EC,
- Bathing Water Directive 76/160/EEC, and
- Shellfish Waters Directive (79/923/EEC).

### **Dangerous Substances Directives 2006/11/EC**

The effluent for the agglomeration of Courtmacsherry is mainly touristic and domestic; the industrial contribution can be considered as negligible. For this reason, it can be assumed that any dangerous substances mentioned in the Dangerous Substances Regulations will not be present in the discharge. The new WWTP proposed in the programme of improvement shall advance the level of control by increasing the level of sampling and monitoring. The detection of dangerous substances if any will be then facilitated.

### **Water Framework Directive 2000/60/EC**

The following is an extract from the Preliminary Report carried out by J. B. Barry & Partners Consulting Engineers for the proposed Courtmacsherry & Timoleague Sewerage Schemes on water quality. (For full detailed extract see section F1 above)

#### **“Courtmacsherry Bay**

The Argideen River flows fourteen miles to the estuary at Timoleague and joins the sea at the village of Courtmacsherry. The Courtmacsherry estuary is quite shallow at the western (Timoleague) end, with deeper water near Courtmacsherry itself.

Courtmacsherry Bay and estuary has a number of beneficial uses including:

- **Amenity:** The estuary offers attractive scenic views from Courtmacsherry and Timoleague.

- **Angling:** Courtmacsherry has established itself as one of Ireland's premier Sea Angling resorts. The clean Atlantic waters warmed by the Gulf Stream add to the prolific marine life and species of fish, which live off the shore. Shore fishing is also carried out in the Estuary for bass, bot and harder.
- **Swimming:** The estuary is used for swimming at the eastern end of Courtmacsherry village.
- **Receiving Water:** The estuary is the receiving water for discharges from the Courtmacsherry septic tank.

Courtmacsherry Bay is subject to extensive algal growths see Figure 7.2, which on decaying in warm weather produces a strong smell. These growths generally consist of two or more algae, manifesting as extensive greening of the mudflats. Wave action causes these growths and other seaweeds/algae at sea to loosen and become deposited onshore where they rot in warm weather causing strong smells

Agricultural run-off from surrounding farms is one of the main diffuse sources of nutrients in Courtmacsherry Bay.

The quality of estuarine and coastal waters is usually monitored by a number of government and regulatory agencies, including EPA, Coastal Local Authorities, the Marine Institute's Fisheries Research Centre (FRC), various arms of the Department of the Marine and Natural Resources and the Radiological Protection Institute of Ireland.

Cork County Council has limited water quality data available on Courtmacsherry Estuary and Bay. Water samples were taken by Cork County Council on the 23<sup>rd</sup> of July 2003 at Courtmacsherry Bay and were found to be below the standards (i.e. within the limits) for the Quality of Bathing Water Directive (76/160/EC) Guideline Levels, National Limit Values and the more stringent Blue Flag Criteria. The results are shown below in Table 7.5.

**Table 7.5: Courtmacsherry Water Samples by Cork County Council**

Date	Total Coliforms / 100ml	Faecal Coliforms / 100ml	Faecal Streptococci / 100ml
23 July 2003	43	12	24
<b>Quality of</b>	500	100	-



<b>Bathing Water Directive</b> Guideline Values (lower limit)			
<b>NLVs</b>	5,000	1,000	-

As part of the Marine Survey undertaken by JB Barry & Partners Ltd., water samples were taken at seven locations within the survey area.

Under the Quality of Bathing Waters Regulations 1992 (S.I No. 155 of 1992) (EC Directive concerning the quality of Bathing Waters in Ireland (76/160/EEC)) the samples taken at Burren Quay, Timoleague River and Timoleague Estuary exceed the guide value of 500/100mls of Total Coliforms. The Total Coliform level at Wood Point is also high at 488 MPN/100mls.

The EPA has developed a set of criteria for evaluating the key features of eutrophication in Irish Estuaries, Bays and near shore Coastal Waters. These criteria are laid out in the EPA Book 'Water Quality in Ireland 2001 – 2003'.

The water samples taken at seven locations were analysed for various criteria.

In summary, from the seven samples taken on the 5<sup>th</sup> August 2004 only Sample 3 (Argideen River) was at risk of eutrophication. However, the above results were taken on one day only, and can not be considered representative for a longer period. The results appear to be good and this may be due to the dissolved inorganic nitrogen being taken up in algal growth."

The Courtmacsherry Estuary is considered to be "probably at risk" of not achieving good status. The objectives of the Water Framework Directive are to protect all high status waters, prevent further deterioration of all waters and to restore degraded surface and ground waters to good status by 2015. Cork County Council through the Water Services Investment Programme propose to construct a new wastewater treatment facility at Courtmacsherry to provide secondary treatment to the effluent prior to discharge, thus improving water quality in Courtmacsherry Estuary.

In the context of proposed Timoleague Pumping Station, the current relevant standards were applied to the overflows from the pumping stations, and these were then input to the hydraulic model. Using the model it was decided to limit storm overflows from the pumping stations to Courtmacsherry Estuary to 7 (seven) spills per bathing season or flows in excess of Formula A, whichever is more stringent. The hydraulic model demonstrates that the Timoleague PS should only overflow under the 1 in 1 year storm. Storm tanks will be required at the WWTP. The overall installation will comply fully with the DEHLG "Procedures and Criteria in relation

to Storm Water Overflows”. It is also proposed to screen to 6mm and separate gross solids from the incoming flows.

### **Birds Directive 79/409/EEC**

As part of the Preliminary Report carried out by J. B. Barry & Partners Consulting Engineers for the proposed Courtmacsherry & Timoleague Sewerage Schemes a report was compiled by Natura Consultants on the Assessment of Ecological Constraints.

The following are extracts from that report:

#### **“Methodology**

“A desk study was carried out to collate the available information on the ecological environment. The National Parks and Wildlife Service (NPWS) database of designated conservation areas and records of rare and protected plant species were checked with regard to the location of the proposed development. BirdWatch Ireland was consulted with regard to the use of the estuary by wetland birds. Data on birds using the estuary was obtained from The Irish Wetlands Birds Survey I-WeBS. The I-WeBS volunteer, Peter Wolstenholm was consulted regarding important bird areas within the estuary.

A field-visit was not conducted for the ecological constraints assessment. Aerial photographs were used to identify potentially sensitive ecological sites such as woodlands, scrub, wetlands and river systems.

For the purpose of this study the proposed waste water treatment plant locations have been referred to numerically as sites 1-5 and are located in west to east direction from Timoleague Village to The Point in Courtmacsherry.

Throughout this report habitats are classified using *A Guide to Habitats in Ireland* (Fossitt, 2000). These habitats were evaluated and given an overall significance rating on the basis of the criteria outlined in NATURA scheme for site evaluation (Appendix I). The scientific and common names are given for plants and follow Webb *et al.* (1996) and Scannell and Synnott (1987) respectively. Only common names are given for mammals and birds (Whilde, 1993).”

“Designated areas are a primary constraint and all parts of the proposed sewerage scheme route will impact temporarily on the cSAC during the construction phase. NPWS should be contacted and notified of the development and their views sought regarding impacts and mitigation.

Further constraints in relation to the cSAC of Courtmacsherry estuary will occur in the area of saltmarsh and muddy shore adjacent to Timoleague village and along the bridge of the R601. This area also serves as the most important bird area within the estuary. It is an important feeding site at low tide and the salt marsh is an important high tide roost for all birds using the area (P. Wolstenholm, *pers comm.*)

A further constraint relating to the cSAC designation is the area of woodland at Wood Point.”

**“Principal ecological constraints of waste water treatment plant site locations and sewerage pipe line route.**

<b>Ecological Constraint</b>	<b>WWTP locations and sewerage pipe route</b>
Feeding site for wintering birds	Site 1, Site 3 (fields)
Roost site for wintering birds	Site 1

- Site 1 – Timoleague – South of Village
- Site 2 – Field 2.0 km east of Timoleague
- Site 3 – Field 0.25 km west of Courtmacsherry and 0.5 km east of Ballynamona House (preferred site)
- Site 4 – Within Courtmacsherry Village at the existing Septic Tank
- Site 5 – Upon Cliff at Wood Point

### **Fauna**

“The principle constraint relating to fauna is the potential impact on bird feeding sites and high tide roosts. The area of mudflats and saltmarsh adjacent to WWTP site 1 is the most important bird feeding and high tide roost in the estuary. However, this is a seasonal constraint as bird numbers peak in the period September to March inclusive. Construction carried out during summer months would lessen the temporary impact of disturbance to birds.

The agricultural fields that would be impacted on at WWTP site 3 are important feeding sites for birds of the estuary (especially at high tide). There would be a permanent loss of feeding area if the WWTP was built on this site.

There would be no significant impact on otter using the area.

If the development necessitates the removal of mature trees, a bat survey should be conducted to determine if they are used/ suitable bat roosts. This should be carried out in the period of April to September.”

### **Conclusions**

- The proposed sewerage scheme passes through the Courtmacsherry estuary which is of international importance due to its cSAC designation.
- The proposed WWTP at site 1 (Timoleague village) is the least suitable location in terms of ecological constraints. This area contains important saltmarsh habitat (Annex 1, EU Habitats Directive) and is the most important high tide roost for wintering birds in the estuary.
- Construction of a WWTP in the agricultural fields of proposed site 3 (Peters Point) would impact on an important feeding site for birds.
- Proposed sites 2, 4 and 5 would have least impacts on coastal habitats and important bird feeding and roosting sites.

- Construction should be scheduled outside of months September to March inclusive as this is when birds reach peak numbers.
- The sewerage scheme has the potential to impact on areas where there are stands of mature trees. Mature trees are potential bat roosts and should be subject to survey if likely to be impacted.”

**Groundwater Directives 80/68/EEC & 2006/118/EC**

Not Applicable as there are no emissions to groundwater.

**Drinking Water Directives 80/778/EEC**

Not Applicable as there are no abstraction points downstream of any discharge points pertaining to this licence.

**Urban Waste Water Treatment Directive 91/271/EEC**

The treated effluent quality standard for the Courtmacsherry Waste Water Treatment Plant is to comply with the E.U. Urban Waste Water Treatment Directive Standards which are as follows:

- |   |                        |         |
|---|------------------------|---------|
| • | BOD                    | 25mg/l  |
| • | COD                    | 125mg/l |
| • | Total Suspended Solids | 35mg/l  |

Detailed design of the proposed treatment plant has not yet been carried out. A typical plant would consist in this case of screening, aeration, settlement with return of sludge and sludge treatment and removal and will also include storm water storage.

Tertiary treatment to remove phosphorus and total nitrogen may also be required in the future if the population increases above 10,000 PE or Courtmacsherry Bay gets designated a sensitive water. It is recommended that sufficient land shall be obtained for the WWTP in order that additional process units can be added to the plant if this situation arises in the future.

**Habitats Directive 92/43/EEC**

As part of the Preliminary Report carried out by J. B. Barry & Partners Consulting Engineers for the proposed Courtmacsherry & Timoleague Sewerage Schemes a report was compiled by Natura Consultants on the Assessment of Ecological Constraints (see Attachment F1). The report found the following conclusions:

- The proposed sewerage scheme passes through the Courtmacsherry estuary which is of international importance due to its cSAC designation.

- The proposed WWTP at site 1 (Timoleague village) is the least suitable location in terms of ecological constraints. This area contains important saltmarsh habitat (Annex 1, EU Habitats Directive) and is the most important high tide roost for wintering birds in the estuary.
- Construction of a WWTP in the agricultural fields of proposed site 3 (Peters Point) would impact on an important feeding site for birds.
- Proposed sites 2, 4 and 5 would have least impacts on coastal habitats and important bird feeding and roosting sites.
- Construction should be scheduled outside of months September to March inclusive as this is when birds reach peak numbers.
- The sewerage scheme has the potential to impact on areas where there are stands of mature trees. Mature trees are potential bat roosts and should be subject to survey if likely to be impacted.”

Site 1 – Timoleague – South of Village

Site 2 – Field 2.0 km east of Timoleague

Site 3 – Field 0.25 km west of Courtmacsherry and 0.5 km east of Ballynamona House (preferred site)

Site 4 – Within Courtmacsherry Village at the existing Septic Tank

Site 5 – Upon Cliff at Wood Point

### **Environmental Liabilities Directive 2004/35/EC**

It is likely that under the DBO contract for the proposed Timoleague/Courtmacsherry Wastewater Treatment Plant, a Performance Management System will be required. Such a system would provide a uniform approach to dealing with performance management issues, including procedures for dealing with plant operation, and in particular for dealing with emergencies or failure to meet treated effluent standards. Failure to meet the specified treated effluent standards may result in final penalties to the operating contractor. As a result, the risk of environmental pollution from the treatment plant should be reduced.

### **Bathing Water Directive 76/160/EEC**

There are a number of bathing beaches in Courtmacsherry. (However there is no designated Bathing Water in the area). In Ireland the legislation governing the quality of bathing waters is set out in the Quality of Bathing Waters Regulations, 1992 (S.I. 155 of 1992) and amendments which transpose the EU Directive 76/160/EC concerning the quality of bathing water.

There is currently no blue flag beach in the Courtmacsherry and Timoleague area. Nevertheless, it is considered that the disposal of treated effluent should result in compliance with the Irish National Limit values for bathing waters.

Sampling carried out by Cork County Council in 2003 and outlined in Section F1 above show levels well under the limits for Bathing Waters at Courtmacsherry.

**Shellfish Waters Directive (79/923/EEC).**

The following is an extract from the Preliminary Report carried out by J. B. Barry & Partners Consulting Engineers for the proposed Courtmacsherry & Timoleague Sewerage Schemes on this directive:

“As part of this study, the Department of Communications, Marine and Natural Resources (DOCMNR) was contacted in order to obtain information on aquaculture activity in the vicinity of Courtmacsherry and Timoleague.

The DOCMNR confirmed that currently there are no shellfish licences within the Bay. Any future licence applications would be considered on their individual merits.

Therefore currently neither the Shellfish Directive nor the more stringent SHELLSAN guidelines will apply to the Courtmacsherry and Timoleague Sewerage Scheme. However, it has been requested by Cork County Council that the option of installing and operating UV disinfection is further investigated due to the amount of water sports activity that is currently undertaken within the Bay.”

**Attachment G.1** should contain the most recent programme of improvements, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

Attachment included	Yes	No
	✓	

**G.2 Compliance with Water Quality Standards for Phosphorus Regulations (S.I. No. 258 of 1998).**

Provide details on a programme of improvements, including any water quality management plans or catchment management plans in place, to ensure that improvements of water quality required under the Water Quality Standards for Phosphorous Regulations (S.I. No. 258 of 1998) are being achieved. Provide details of any specific measures adopted for waste water works specified in Phosphorus Measures Implementation reports and the progress to date of those measures. Provide details highlighting any waste water works that have been identified as the principal sources of pollution under the P regulations.

Tertiary treatment to remove phosphorus and total nitrogen may be required in the future if the population increases above 10,000PE or Courtmacsherry Bay gets designated sensitive water. Sufficient land is recommended to be obtained for the WWTP in order that additional process units can be added to the plant if this situation arises in the future.

**Attachment G.2** should contain the most recent programme of improvements and any associated documentation requested under Section G.3 of the application.

Attachment included	Yes	No
		✓

**G.3 Impact Mitigation**

Provide details on a programme of improvements to ensure that discharges from the agglomeration will not result in significant environmental pollution.

**Attachment G.3** should contain the most recent programme of improvements, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
	✓	

**G.4 Storm Water Overflow**

Provide details on a programme of improvements to ensure that discharges other than the primary and secondary discharges comply with the definition of 'storm water overflow' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007.

**Attachment G.4** should contain the most recent programme of improvements, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
	✓	

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**SECTION H: DECLARATION**

**Declaration**

I hereby make application for a waste water discharge licence/revised licence, pursuant to the provisions of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).

I certify that the information given in this application is truthful, accurate and complete.

I give consent to the EPA to copy this application for its own use and to make it available for inspection and copying by the public, both in the form of paper files available for inspection at EPA and local authority offices, and via the EPA's website.

This consent relates to this application itself and to any further information or submission, whether provided by me as Applicant, any person acting on the Applicant's behalf, or any other person.

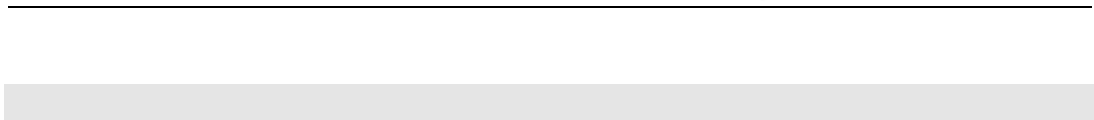
Signed by : Niall O'Mahony  
(on behalf of the organisation)

Date : 18/6/09

Print signature name: NIALL O'MAHONY

Position in organisation: SENIOR ENGINEER

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**SECTION I: JOINT DECLARATION**

**Joint Declaration <sup>Note1</sup>**

I hereby make application for a waste water discharge licence/revised licence, pursuant to the provisions of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).

I certify that the information given in this application is truthful, accurate and complete.

I give consent to the EPA to copy this application for its own use and to make it available for inspection and copying by the public, both in the form of paper files available for inspection at EPA and local authority offices, and via the EPA's website.

This consent relates to this application itself and to any further information or submission whether provided by me as Applicant, any person acting on the Applicant's behalf, or any other person.

**Lead Authority**

**Signed by :** \_\_\_\_\_ **Date :** \_\_\_\_\_  
*(on behalf of the organisation)*

**Print signature name:** \_\_\_\_\_

**Position in organisation:** \_\_\_\_\_

**Co-Applicants**

**Signed by :** \_\_\_\_\_ **Date :** \_\_\_\_\_  
*(on behalf of the organisation)*

**Print signature name:** \_\_\_\_\_

**Position in organisation:** \_\_\_\_\_

**Signed by :** \_\_\_\_\_ **Date :** \_\_\_\_\_  
*(on behalf of the organisation)*

**Print signature name:** \_\_\_\_\_

**Position in organisation:** \_\_\_\_\_

**Note 1:** In the case of an application being lodged on behalf of more than a single water services authority the following declaration must be signed by all applicants.

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## **Attachments Table of Contents Annex 1**

### **Section A – Non-Technical Summary**

Attachment A1 ..... **TIMO A1-01** – Site Location Map of Agglomeration

### **Section B – General**

Attachment B1 ..... **TIMO B1-01** – Timoleague Agglomeration Boundary Map

Attachment B2 ..... **TIMO B2-01** – Proposed Wastewater Treatment Plant Site Boundary

Attachment B3 ..... **TIMO B3-01** – Location of Existing Primary Discharge Point

**TIMO B3-02** – Location of Proposed Primary Discharge Point

Attachment B4 ..... **TIMO B4-01** – Location of Secondary Discharge Point (Existing Points)

Attachment B5 ..... **TIMO B5-01** – Location of Proposed Stormwater Overflow Discharge Point

Attachment B8 ..... Copy of Site Notice  
Newspaper Advertisement  
**TIMO B8.01** – Location of Site Notice

Attachment B9 ..... Fee – Confirmation of Payment

Attachment B10 ..... Capital Investment Programme

### **Section C – Infrastructure and Operation**

Attachment C1 ..... Process Flow Diagrams  
**TIMO C1.01** – Proposed Pump Station and Rising Main to WWTP

Attachment C2 ..... **TIMO C2.01** – Proposed Outfall Details

### **Section E – Monitoring**

Attachment E2 ..... Monitoring Programme

Attachment E4 ..... Sampling Data

## **Section F – Existing Environment and Impact of the Discharges**

Attachment F1 .....	<b>TIMO F.1.3</b> - Environmental Areas Classification
	F.1-1 – Discharge Modelling
	F.1-2 – Discharge Modelling
	F.1-3 – Discharge Modelling
	F.1-4 – Discharge Modelling
	F.1-5 – Ecology Report

## **Section G – Programme of Improvements**

Attachment G1 .....	Programme of Improvements
Attachment G3 .....	Programme of Improvements
Attachment G4 .....	Programme of Improvements

## **Tables**

Agglomeration Details

Tables D.1 – Emissions to Surface/Ground Waters

Table E.1 - Wastewater Frequency and Quantity of Discharge

Table F.1 - Surface/Ground Water Monitoring

## **Annex II**

Checklist for Regulation 16/17 Compliance

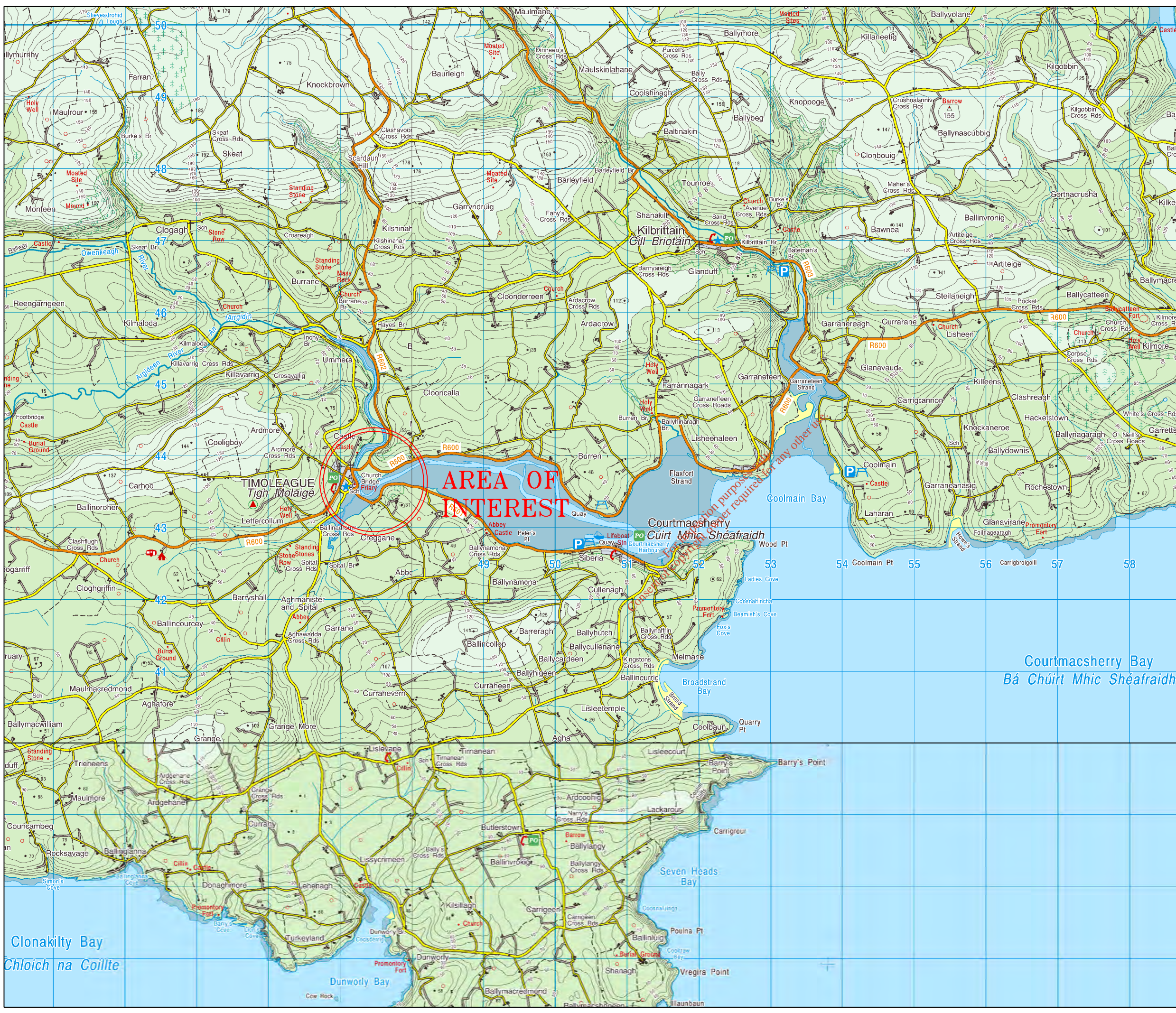
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# **ATTACHMENT No A.1**

## **Non-Technical Summary Supporting Information**

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**Cork County Council,  
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SEN. ENGR. (WATER SERVICES),  
COURTHOUSE, SKIBBEREEN.  
  
M. MURRELL,  
DIRECTOR OF SERVICES  
WEST CORK

Job Title:  
**TIMOLEAGUE\_WASTE\_WATER  
DISCHARGE\_LICENCE\_APPLICATION**

Drawing Title:  
**ATTACHMENT\_A.1  
AGGLOMERATION\_LOCATION\_MAP**

Prepared By: J.CREAGH	Checked By: D.GROARKE	Date: JUNE.2009
Drawing number: TIMO_A1_01	Scales: 1/50000	Rev: -

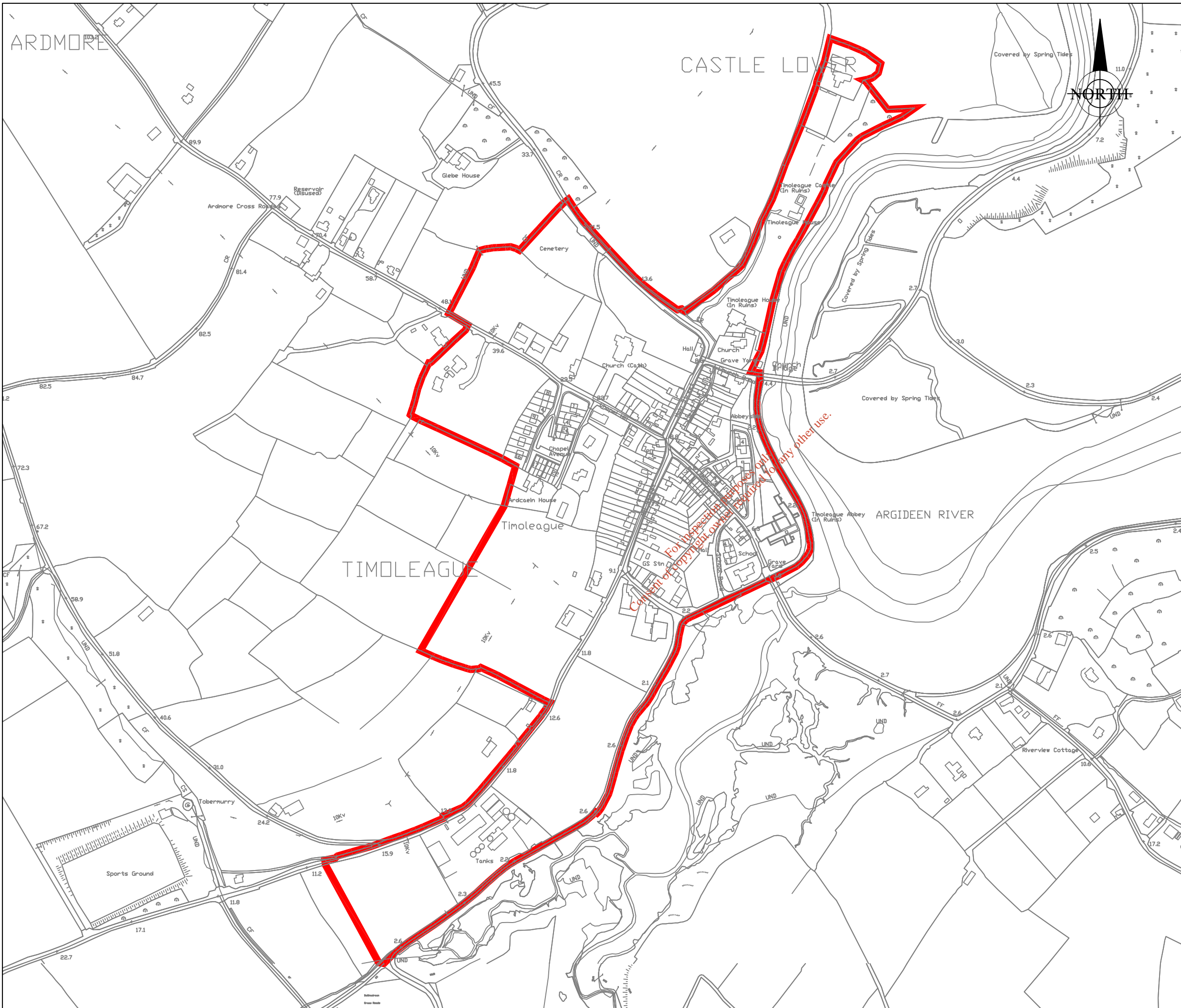


# **ATTACHMENT No B.1**

## **AGGLOMERATION BOUNDARY**

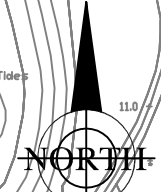
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**LEGEND**

——— AGGLOMERATION BOUNDARY

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DIRECTOR OF SERVICES  
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Job Title:  
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DISCHARGE\_LICENCE\_APPLICATION**

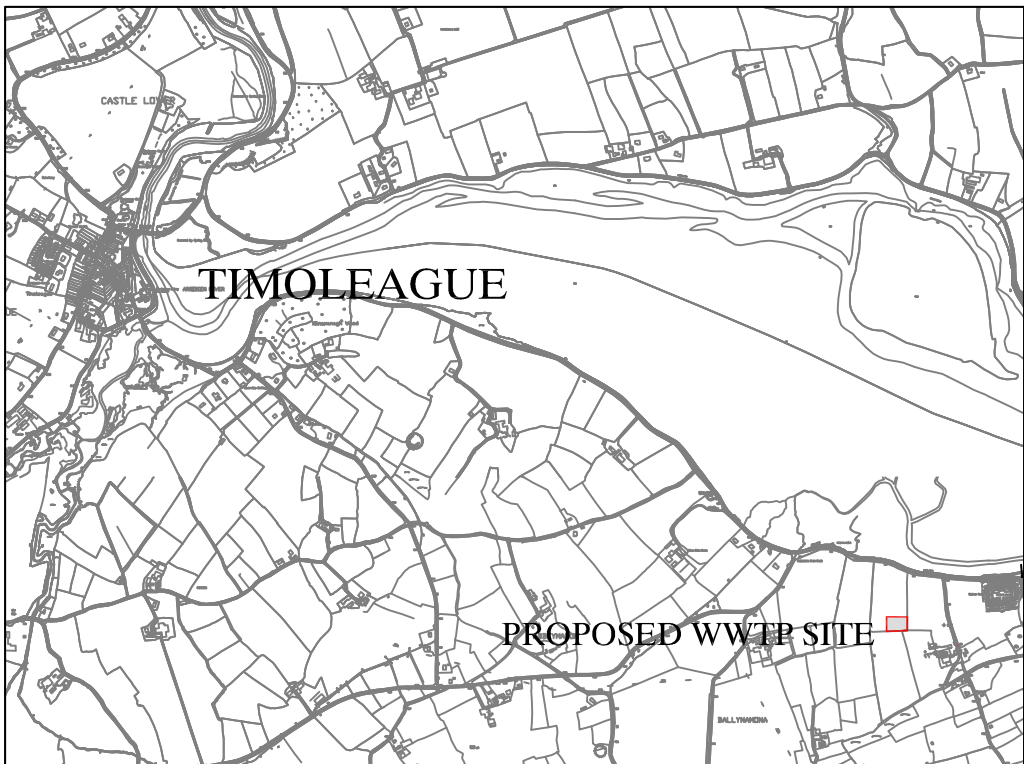
Drawing Title:  
**ATTACHMENT\_B.1  
AGGLOMERATION\_BOUNDARY**

Prepared By: J. CREAGH	Checked By: D. GROARKE	Date: JUNE.2009
Drawing number: TIMO_B1_01	Scales: 1:10000	Rev: -

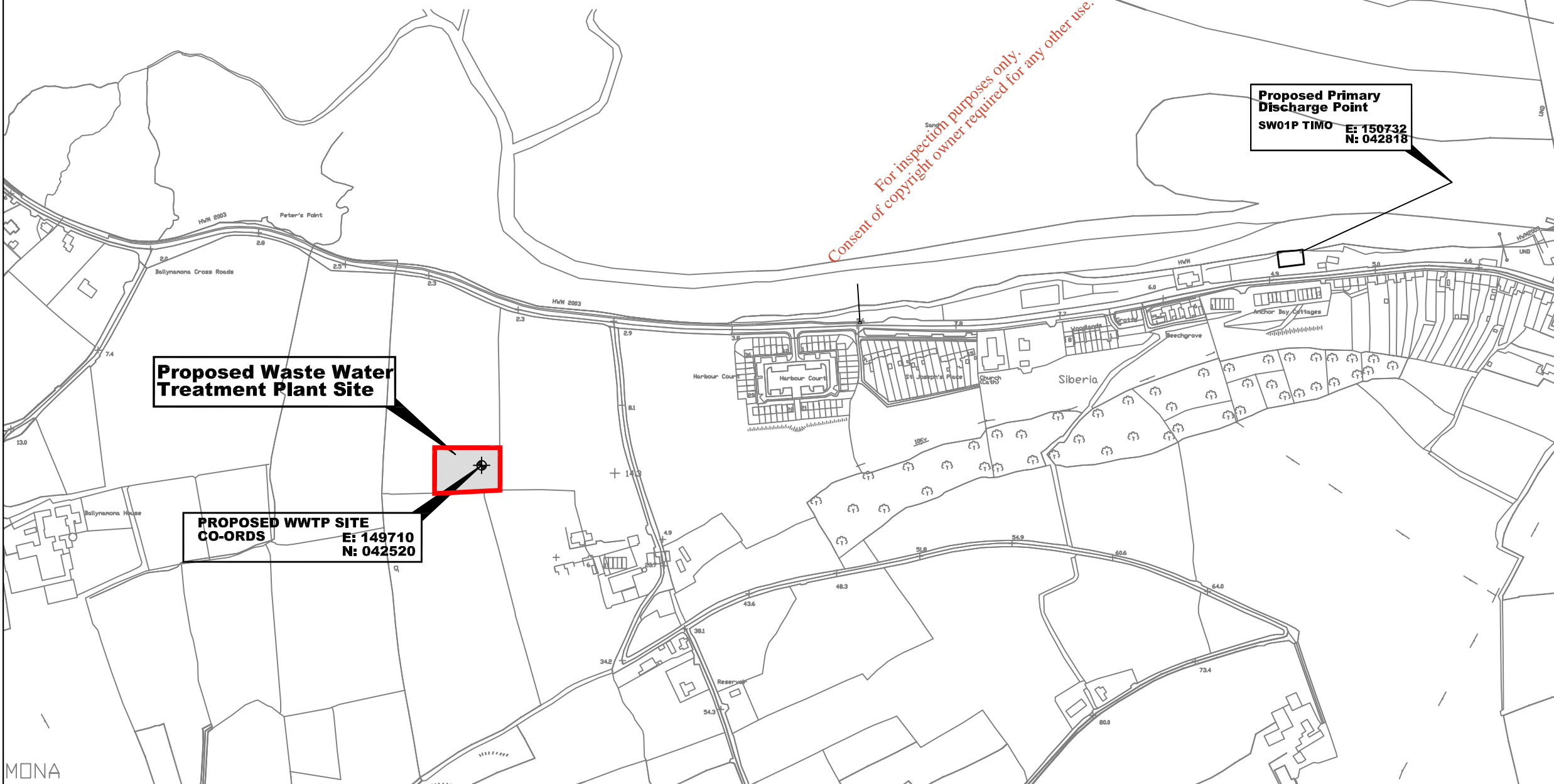
# **ATTACHMENT No B.2**

## **WWTP SITE BOUNDARY**

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KEY PLAN 1/25000



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**LEGEND**

SITE BOUNDARY

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M. MURRELL,  
DIRECTOR OF SERVICES  
WEST CORK

Job Title:  
**TIMOLEAGUE\_WASTE\_WATER  
DISCHARGE\_LICENCE\_APPLICATION**

Drawing Title:  
**ATTACHMENT\_B.2  
PROPOSED\_WASTE\_WATER  
TREATMENT\_PLANT  
SITE\_BOUNDARY**

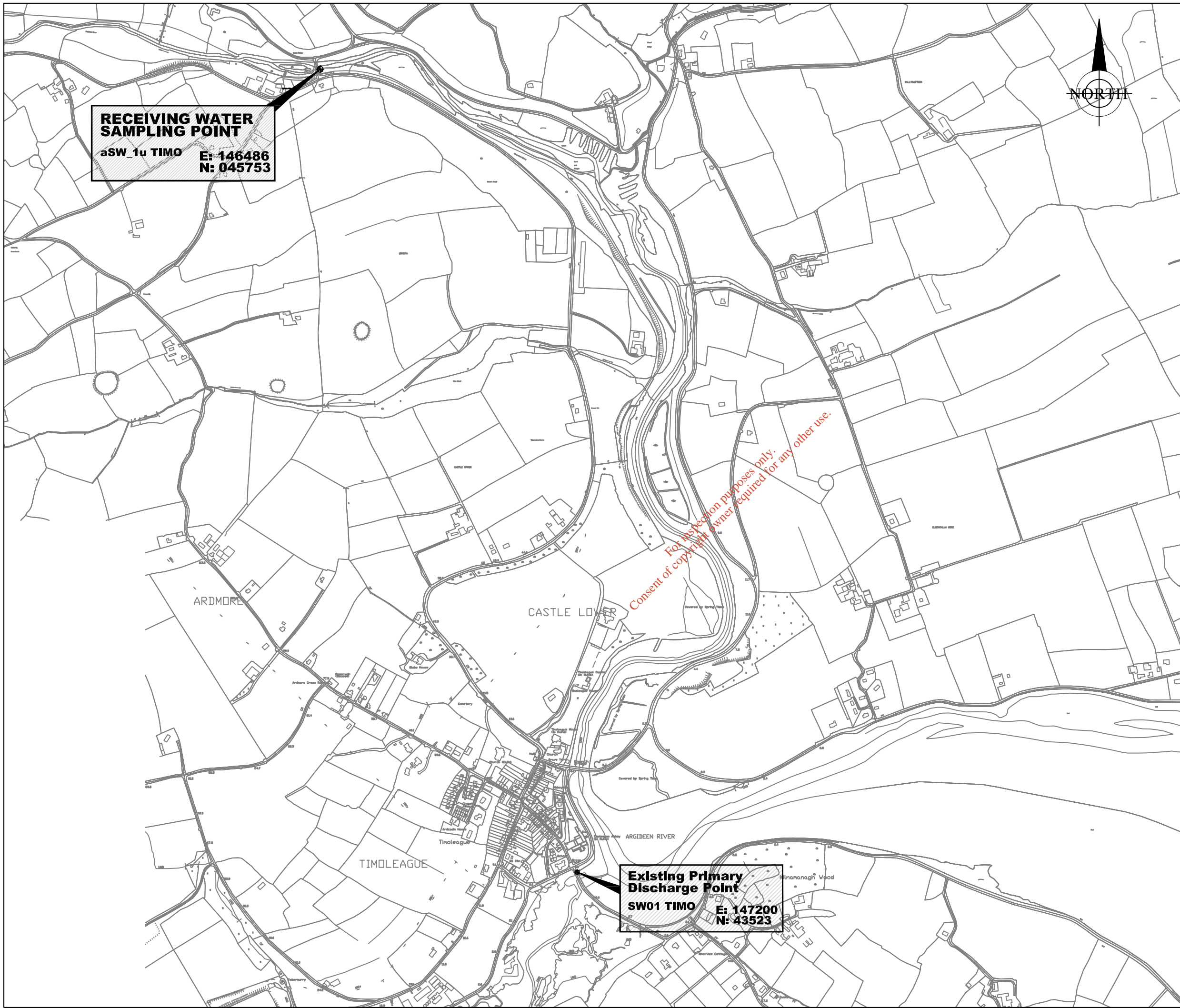
Prepared By: J.CREAGH	Checked By: D.GROARKE	Date: JUNE.2009
Drawing number: TIMO_B2_01	Scales: 1:5000	Rev: -

# **ATTACHMENT No B.3**

## **PRIMARY DISCHARGE LOCATION**

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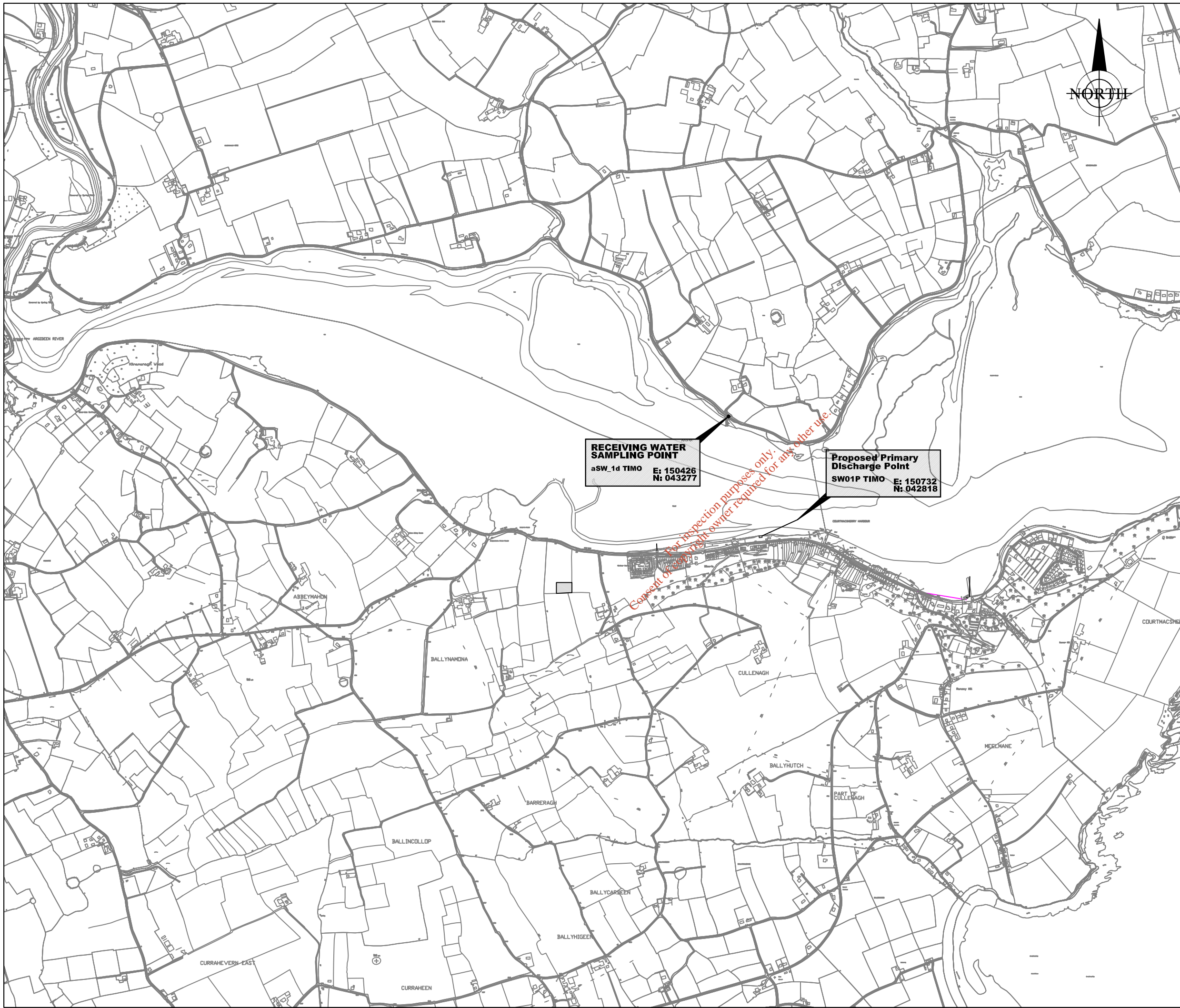
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M. MURRELL,  
DIRECTOR OF SERVICES  
WEST CORK

Job Title:  
**TIMOLEAGUE\_WASTE\_WATER  
DISCHARGE\_LICENCE\_APPLICATION**

Drawing Title:  
**ATTACHMENT\_B.3  
EXISTING\_PRIMARY  
DISCHARGE\_POINT**

Prepared By: J.CREAGH	Checked By: D.GROARKE	Date: JUNE.2009
Drawing number: TIMO_B3_01	Scales: 1:10000	Rev: -





**RECEIVING WATER SAMPLING POINT**  
 aSW\_1d TIMO E: 150426 N: 043277

**Proposed Primary Discharge Point**  
 SW01P TIMO E: 150732 N: 042818

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 DIRECTOR OF SERVICES  
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Job Title:  
**TIMOLEAGUE\_WASTE\_WATER  
 DISCHARGE\_LICENCE\_APPLICATION**

Drawing Title:  
**ATTACHMENT\_B.3  
 PROPOSED\_PRIMARY  
 DISCHARGE\_POINT**

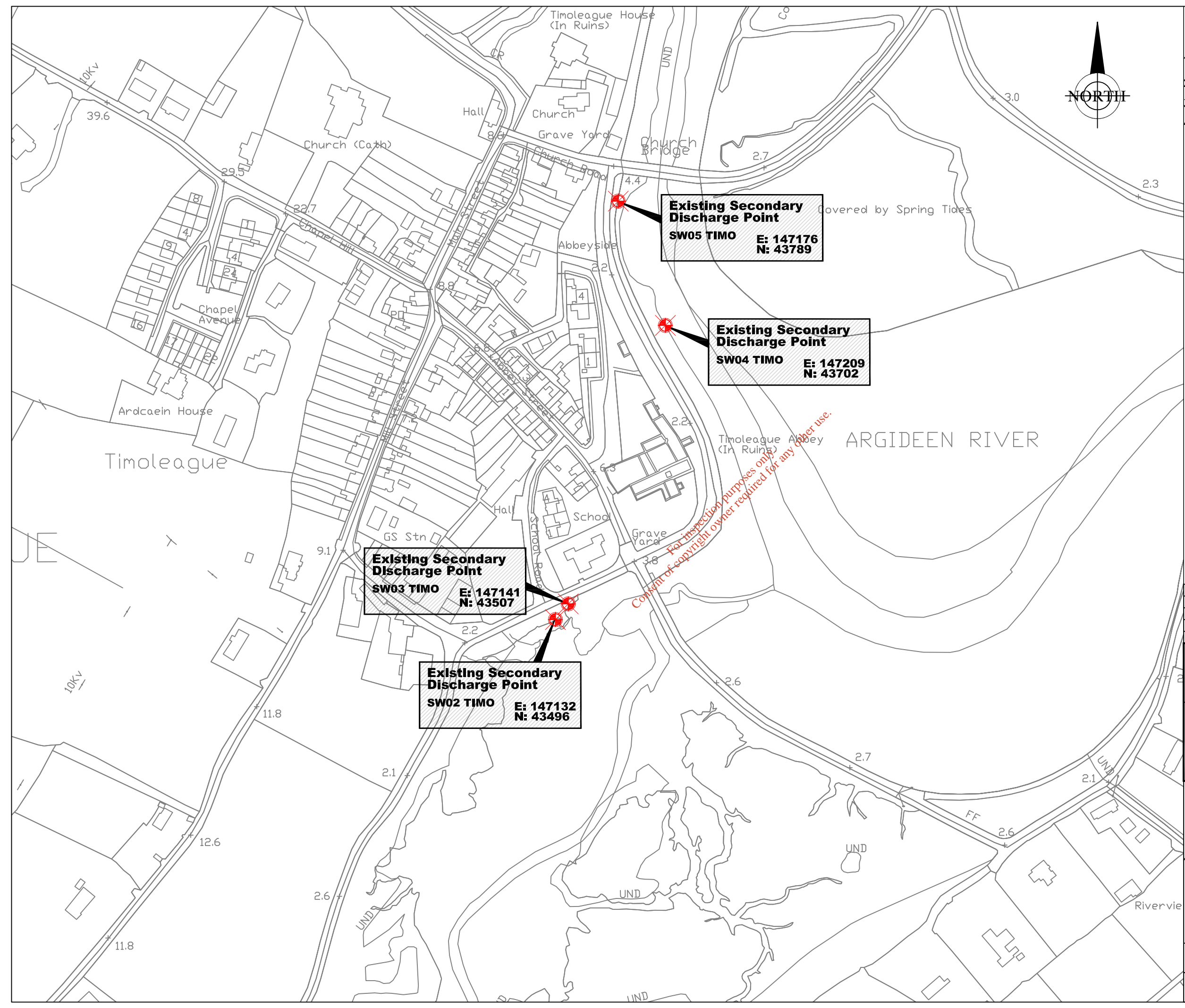
Prepared By: J.CREAGH	Checked By: D.GROARKE	Date: JUNE.2009
Drawing number: TIMO_B3_02	Scales: 1:10000	Rev: -

# **ATTACHMENT No B.4**

## **SECONDARY DISCHARGE LOCATION**

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M. MURRELL,  
DIRECTOR OF SERVICES  
WEST CORK

Job Title:  
**TIMOLEAGUE\_WASTE\_WATER  
DISCHARGE\_LICENCE\_APPLICATION**

Drawing Title:  
**ATTACHMENT\_B.4  
EXISTING\_SECONDARY  
DISCHARGE\_POINTS**

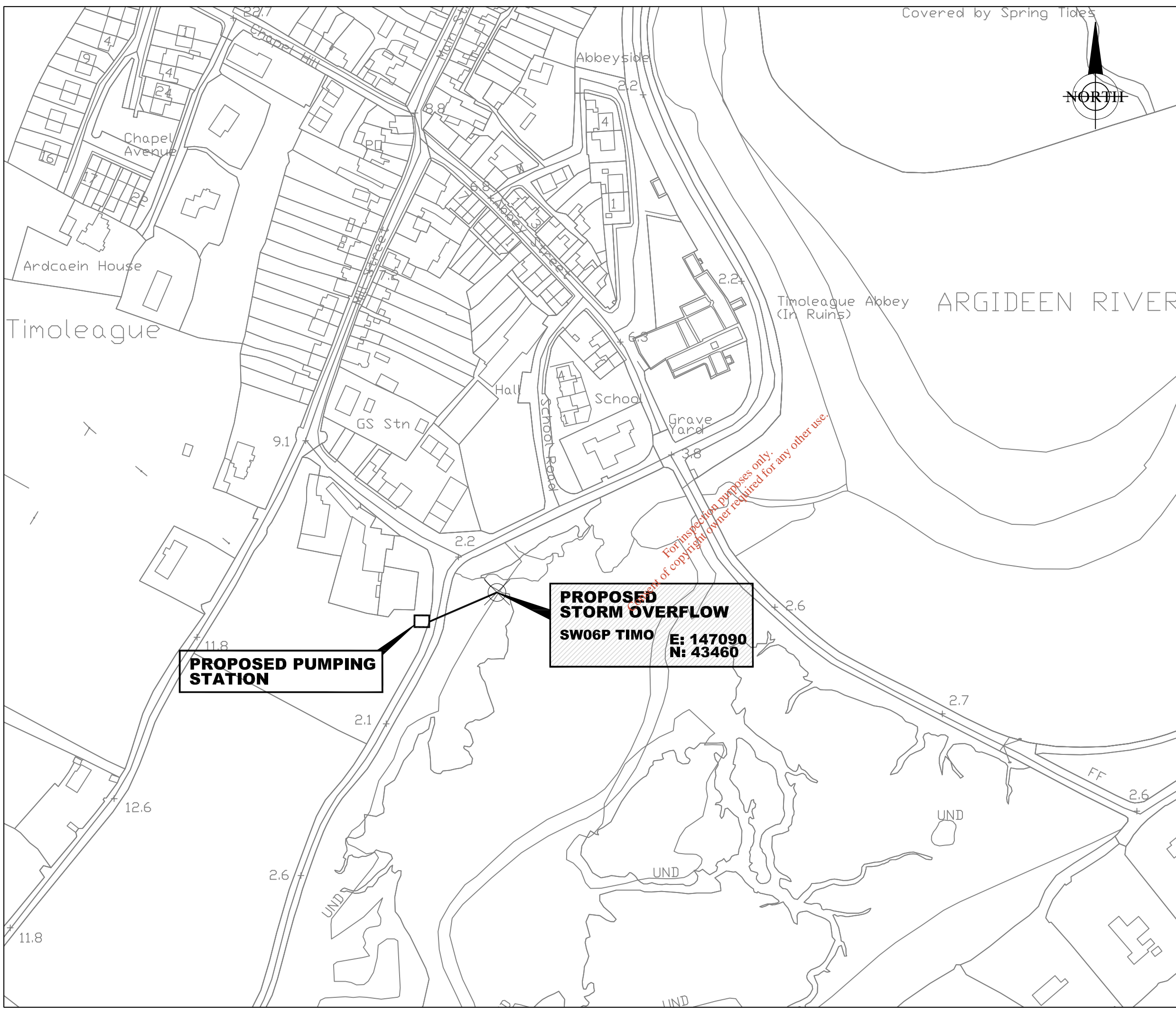
Prepared By: J.CREAGH	Checked By: D.GROARKE	Date: JUNE.2009
Drawing number: TIMO_B4_01	Scales: 1:2500	Rev: -



# **ATTACHMENT No B.5**

## **STORM WATER OVERFLOW LOCATIONS**

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Covered by Spring Tides



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**PROPOSED PUMPING STATION**

**PROPOSED STORM OVERFLOW**  
**SW06P TIMO E: 147090 N: 43460**

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No.	Date	Drawn	Checked	Revision Description

**Cork County Council,  
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 COURTHOUSE, SKIBBEREEN.  
 M. MURRELL,  
 DIRECTOR OF SERVICES  
 WEST CORK

Job Title:  
**TIMOLEAGUE\_WASTE\_WATER  
 DISCHARGE\_LICENCE\_APPLICATION**

Drawing Title:  
**ATTACHMENT\_B.5  
 PROPOSED\_STORM\_OVERFLOW  
 AT\_PROPOSED\_PUMPING\_STATION**

Prepared By: J.CREAGH	Checked By: D.GROARKE	Date: JUNE.2009
Drawing number: TIMO_B5_01	Scales: 1:2000	Rev: -

# **ATTACHMENT No B.8**

## **NOTICES AND ADVERTISEMENTS**

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# CORK COUNTY COUNCIL

## SITE NOTICE

### APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE WATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, S.I. No. 684 of 2007, Water Services (Western Division), Cork County Council, Courthouse, Skibbereen, Co. Cork is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for Timoleague Agglomeration at the following locations:

Discharge	Function	Townland	Receptor	Grid Reference
Primary	Main	Timoleague	Courtmacsherry Estuary	E147200 N043523
Secondary	Minor	Timoleague	Courtmacsherry Estuary	E147132 N043496
Secondary	Minor	Timoleague	Courtmacsherry Estuary	E147141 N043507
Secondary	Minor	Timoleague	Courtmacsherry Estuary	E147209 N043702
Secondary	Minor	Timoleague	Courtmacsherry Estuary	E147176 N043789

Cork County Council proposes to construct a new wastewater treatment plant at Cullenagh, Courtmacsherry, Co. Cork, Grid Reference (E149710, N042520). It is proposed to discharge treated wastewater from this plant to Courtmacsherry Estuary utilising existing outfall. The proposed outfall location is detailed in the table below:

Discharge Type	Function	Townland	Receptor	Grid Reference
Primary	Main	Cullenagh	Courtmacsherry Estuary	E150732 N042818

A copy of the application for the Waste Water Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall as soon as is practicable after receipt by the Agency be available for inspection or purchase at the

- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335599 Telephone: 053-9160600 Fax: 053-9160699 Email: info@epa.ie
- and at
- Cork County Council Water Services (Western Division), Courthouse, Skibbereen, Co. Cork ; Telephone: 028-21299 Fax: 028-21995.

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above.



Annabella, Mallow, Co. Cork.

application may be made to Agency at its headquarters

ENVIRONMENTAL PROTECTION AGENCY WASTEWATER DISCHARGE LICENCE

Discharge (Authorisation) Northern Division, Cork County Council, Courthouse, Skibbereen is applying to the Environmental Protection Agency for a Wastewater Discharge Licence for the following locations:

Table with 2 columns: National Grid Ref. (E164897, N099517)

Table with 3 columns: Receptor (Ross River), Grid Ref. (E164919, N099521)

Wastewater Discharge Licence application to the application as may be made in the course of the Agency's consideration of the Application shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the:

Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335 599; 6699; Email: info@epa.ie

Annabella, Mallow, Co. Cork.

application may be made to Agency at its headquarters

ENVIRONMENTAL PROTECTION AGENCY WASTEWATER DISCHARGE LICENCE

Discharge (Authorisation) Northern Division, Cork County Council, Courthouse, Skibbereen is applying to the Environmental Protection Agency for a Wastewater Discharge Licence for the following locations:

Table with 2 columns: National Grid Ref. (E149318, N101474)

Table with 3 columns: Receptor (Finnow Stream), Grid Ref. (E149349, N101796)

Wastewater Discharge Licence application to the application as may be made in the course of the Agency's consideration of the Application shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the:

Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335 599; 6699; Email: info@epa.ie

Annabella, Mallow, Co. Cork.

application may be made to Agency at its headquarters

ENVIRONMENTAL PROTECTION AGENCY WASTEWATER DISCHARGE LICENCE

Discharge (Authorisation) Northern Division, Cork County Council, Courthouse, Skibbereen is applying to the Environmental Protection Agency for a Wastewater Discharge Licence for the following locations:

Table with 2 columns: National Grid Ref. (E139139, N98377)

Table with 3 columns: Receptor (River Blackwater), Grid Ref. (E139107, N98449)

Wastewater Discharge Licence application to the application as may be made in the course of the Agency's consideration of the Application shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the:

Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335 599; 6699; Email: info@epa.ie

Annabella, Mallow, Co. Cork.

application may be made to Agency at its headquarters

A copy of the application for the Wastewater Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the:

- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335 599; Tel: 053-9160600; Fax: 053-9160699; Email: info@epa.ie and at
Cork County Council Offices, Annabella, Mallow, Co. Cork. Tel: 022-21123; Fax: 022-21893.

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above.

WESTERN DIVISION

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Wastewater Discharge (Authorisation) Regulations 2007, Water Services Western Division, Cork County Council, Courthouse, Skibbereen is applying to the Environmental Protection Agency for a Wastewater Discharge Licence for Drimoleague agglomeration at the following locations:

Table with 3 columns: Plant Name (Drimoleague WWTP), Location (Drimoleague), National Grid Ref. (E112677, N045277)

Table with 5 columns: Discharge (Primary), Function (Major), Townland (Garranes South), Receptor (River Ruagagh), Grid Ref. (E112681, N045309)

A copy of the application for the Wastewater Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the:

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Cork County Council Water Services (Western Division), Courthouse, Skibbereen, Co. Cork. Tel: 028-21299; Fax: 028-21995.

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above.

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Wastewater Discharge (Authorisation) Regulations 2007, Water Services Western Division, Cork County Council, Courthouse, Skibbereen is applying to the Environmental Protection Agency for a Wastewater Discharge Licence for Timoleague agglomeration at the following locations:

Table with 5 columns: Discharge, Function, Townland, Receptor, Grid Ref. (Multiple rows for Primary, Secondary discharges to Courtmacsherry Estuary)

Cork County Council proposes to construct a new wastewater treatment plant at Cullenagh, Courtmacsherry, Co. Cork, Grid Reference (E149710, N042520). It is proposed to discharge treated wastewater from this plant to Courtmacsherry Estuary. The proposed discharge location is detailed in the table below:

Table with 5 columns: Discharge (Primary), Function (Main), Townland (Cullenagh), Receptor (Courtmacsherry Estuary), Grid Ref. (E150732, N042818)

A copy of the application for the Wastewater Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the:

- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335 599; Tel: 053-9160600; Fax: 053-9160699; Email: info@epa.ie and at
Cork County Council Water Services (Western Division), Courthouse, Skibbereen, Co. Cork. Tel: 028-21299; Fax: 028-21995.

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above.

Table with 5 columns: Primary, Major, Discharge, Receptor, Grid Ref. (E098960, N053965)

A copy of the application for the Wastewater Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the:

- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335 599; Tel: 053-9160600; Fax: 053-9160699; Email: info@epa.ie and at
Cork County Council Water Services (Western Division), Courthouse, Skibbereen, Co. Cork. Tel: 028-21299; Fax: 028-21995.

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above.

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Wastewater Discharge (Authorisation) Regulations 2007, Water Services Western Division, Cork County Council, Courthouse, Skibbereen is applying to the Environmental Protection Agency for a Wastewater Discharge Licence for Ballydehob agglomeration at the following locations:

Table with 3 columns: Plant Name (Ballydehob WWTP), Location (Ballydehob), National Grid Ref. (E098960, N035286)

Table with 5 columns: Discharge (Primary), Function (Main), Townland (Ballydehob), Receptor (Ballydehob Bay), Grid Ref. (E099090, N035099)

Cork County Council proposes to construct a new wastewater treatment plant at Ballydehob, Co. Cork, Grid Reference (E098949, N035278). It is proposed to discharge treated wastewater from this plant to Ballydehob Bay. The proposed location is detailed in the table below:

Table with 5 columns: Discharge (Primary), Function (Main), Townland (Ballydehob), Receptor (Ballydehob Bay), Grid Ref. (E099090, N035099)

A copy of the application for the Wastewater Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the:

- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335 599; Tel: 053-9160600; Fax: 053-9160699; Email: info@epa.ie and at
Cork County Council Water Services (Western Division), Courthouse, Skibbereen, Co. Cork. Tel: 028-21299; Fax: 028-21995.

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above.

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Wastewater Discharge (Authorisation) Regulations 2007, S.I. No. 684 of 2007, Water Services (Western Division), Cork County Council, Courthouse, Skibbereen, Co. Cork is applying to the Environmental Protection Agency for a Wastewater Discharge Licence for the Castletownshend agglomeration at the following locations:

Table with 5 columns: Discharge, Function, Townland, Receptor, Grid Ref. (Multiple rows for Primary, Secondary discharges to Castlehaven Bay)

Cork County Council proposes to construct a Wastewater Treatment Plant at Castletownshend, Co. Cork, Grid Reference (E118620, N031623). It is proposed to discharge treated wastewater from this Plant to Castlehaven Bay. The proposed location is detailed in the table below:

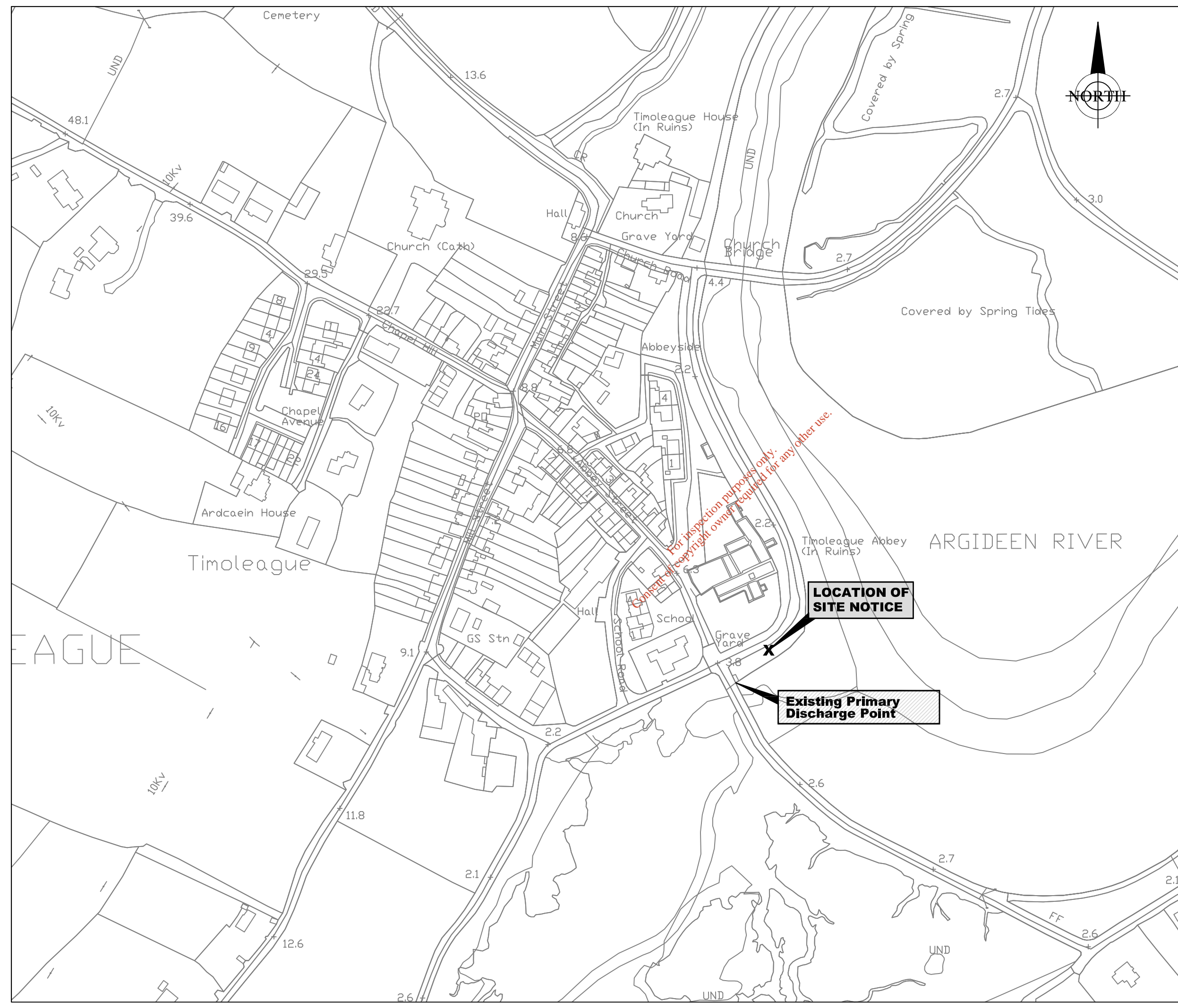
Table with 5 columns: Discharge (Primary), Function (Major), Townland (Castletownshend), Receptor (Castlehaven Bay), Grid Ref. (E118895, N031628)

A copy of the application for the Wastewater Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the:

- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335 599; Tel: 053-9160600; Fax: 053-9160699; Email: info@epa.ie and at
Cork County Council Water Services (Western Division), Courthouse, Skibbereen, Co. Cork. Tel: 028-21299; Fax: 028-21995.

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above.





**NOTES**

1. Do not scale, use figured dimensions only. If in doubt ask
2. All dimensions to be checked on site
3. Drawings to be read in conjunction with Licence application
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No.	Date	Drawn	Chkd	Revision Description

**Cork County Council,  
Western Division.**



N.O'MAHONY, B.E.,  
SEN. ENGR. (WATER SERVICES),  
COURTHOUSE, SKIBBEREEN.  
  
M. MURRELL,  
DIRECTOR OF SERVICES  
WEST CORK

Job Title:  
**TIMOLEAGUE\_WASTE\_WATER  
DISCHARGE\_LICENCE\_APPLICATION**

Drawing Title:  
**ATTACHMENT\_B.8  
LOCATION\_OF\_SITE\_NOTICE**

Prepared By: J.CREAGH	Checked By: D.GROARKE	Date: JUNE.2009
Drawing number: TIMO_B8_01	Scales: 1:2500	Rev: -

# **ATTACHMENT No B.9(iii)**

**FEE to EPA**

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# Comhairle Contae Chorcaí Cork County Council

Courthouse,  
Skibbereen, Co. Cork.  
Tel (028) 21299 • Fax (028) 21995  
Web: www.corkcoco.ie  
Teach na Cúirte,  
An Sciobairín, Co. Chorcaí.  
Fón: (028) 21299 • Faics: (028) 21995  
Suíomh Gréasáin: www.corkcoco.ie



Mr. Declan Groarke,  
Senior Executive Engineer,  
Cork County Council,  
Courthouse,  
Skibbereen.

27<sup>th</sup> May 2009

**Re:- Waste Water Discharge Regulations 2007.**

Dear Declan,

With regard to the application to the EPA for Discharge Licences for the agglomerations with P.E.s of 500 to 1,000 listed below, I confirm the following in relation to the application fee of €70,000 (being €10,000 for each agglomeration).

Transferred to EPA Bank Account:- **Account No. 23507098**

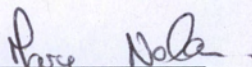
Date Transferred to EPA Bank Account:- **21<sup>st</sup> May, 2009.**

Electronic Fund Transfer Reference No.:- **1080937.**

**Agglomerations: Ballydehob  
Castletownshend  
Drimoleague  
Glengarriff  
Timoleague  
Union Hall  
Ballineen/Enniskeane**

This information should be included with the application to the EPA.

Yours faithfully,

  
Mary Nolan,  
Staff Officer.





# **ATTACHMENT No B.10**

## **CAPITAL INVESTMENT PROGRAMME**

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# Cork County

## Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost	W/S	Est. Cost
<b>Cork North</b>				
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000		
<b>Cork South</b>				
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000		
Cobh/ Middleton/ Carrigtwohill Water Supply Scheme	W	10,135,000		
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000		
Cork Water Strategy Study (G)	W	941,000		
Kinsale Sewerage Scheme	S	20,000,000		
Middleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000		
		<b>41,274,000</b>		
<b>Schemes to start 2007</b>				
<b>Cork North</b>				
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000		
<b>Cork West</b>				
Skibbereen Sewerage Scheme	S	20,000,000		
		<b>25,150,000</b>		
<b>Schemes to start 2008</b>				
<b>Cork North</b>				
Mallow/ Ballyvinter Regional Water Supply Scheme (H) W		8,652,000		
Mallow Sewerage Scheme (H)	S	5,408,000		
<b>Cork South</b>				
Ballincollig Sewerage Scheme (Nutrient Removal) (G)	S	948,000		
Ballingeary Sewerage Scheme	S	1,296,000		
Bandon Sewerage Scheme Stage 2	S	14,729,000		
City Environs (CASP) Strategic Study (G)	S	153,000		
Cloghroe Sewerage Scheme (Upgrade)	S	683,000		
Coachford Water Supply Scheme	W	1,318,000		
Garrettstown Sewerage Scheme	S	2,153,000		
Inniscarra Water Treatment Plant Extension Phase 1	W	2,678,000		
Little Island Sewerage Scheme (G)	S	2,200,000		
		<b>61,137,000</b>		
<b>Cork West</b>				
Bantry Sewerage Scheme	S	7,148,000		
Dunmanway Sewerage Scheme	S	2,153,000		
Leap/ Ballimore Water Supply Scheme	W	6,365,000		
Schull Water Supply Scheme	W	5,253,000		
<b>Schemes to start 2009</b>				
<b>Cork North</b>				
Banteer/Dromahane Regional Water Supply Scheme	W	1,576,000		
Conna Regional Water Supply Scheme Extension	W	2,627,000		
Cork NE Water Supply Scheme	W	4,326,000		
Cork NW Regional Water Supply Scheme	W	6,046,000		
Millstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000		
<b>Cork South</b>				
Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000		
Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000		
Shannagary/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000		
Youghal Sewerage Scheme	S	14,420,000		
<b>Cork West</b>				
Ballydehob Sewerage Scheme	S	683,000		
Bantry Water Supply Scheme	W	14,935,000		
Clonakilty Sewerage Scheme (Plant Capacity Increase)	S	3,677,000		
Courtmacsherry/ Timoleague Sewerage Scheme	S	2,472,000		
Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000		
		<b>164,629,000</b>		
<b>Serviced Land Initiative</b>				
<b>Cork North</b>				
Ballycough Water Supply Scheme	W	139,000		
Ballyhooley Improvement Scheme	W/S	139,000		
Brookhill-Rathgoggin Sewerage Scheme	S	406,000		
Bweeng Water Supply Scheme	W	115,000		
Churchtown Sewerage Scheme (incl. Water)	W/S	543,000		
Clondulane Sewage Treatment Plant	S	417,000		
Freemount Sewerage Scheme	S	150,000		
Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000		
Rathormac Sewerage Scheme (incl. Water)	W/S	555,000		
Spa Glen Sewerage Scheme	S	736,000		
Uplands Fermoy Sewerage Scheme (incl. Water)	W/S	1,174,000		
Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000		
<b>Cork South</b>				
Ballincollig Sewerage Scheme (Barry's Rd Foul and Storm Drainage) (G)	S	1,164,000		
Belgooley, Water Supply Scheme (incl. Sewerage)	W/S	2,913,000		
Blamey Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000		
Carrigtwohill Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000		
Castlematyr Wastewater Treatment Plant Extension	S	1,200,000		
Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000		
Dripsey Water Supply Scheme (incl. Sewerage)	W/S	1,112,000		
Glounthane Sewerage Scheme (G)	S	1,576,000		
Innishannon Sewerage Scheme	S	277,000		
Innishannon Wastewater Treatment Plant	S	694,000		
Keryypike Sewerage Scheme	S	832,000		
Keryypike Water Supply Scheme	W	416,000		
Killeagh Wastewater Treatment Plant Extension	S	1,200,000		
Killeagh Water Supply Scheme (includes Sewerage)	W/S	485,000		
Killeens Sewerage Scheme	S	420,000		
Kilnagleary Sewerage Scheme	S	694,000		
Middleton Wastewater Treatment Plant Extension	S	4,050,000		



# Cork County contd.

## Water Services Investment Programme 2007 - 2009

	W/S	Est. Cost		W/S	Est. Cost
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000	<b>Cork South</b>		
North Cobh Sewerage Scheme (G)	S	3,193,000	Carrigtwohill Sewerage Scheme (G)	S	20,000,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000	Cork Sludge Management (G)	S	14,420,000
Rochestown Water Supply Scheme	W	2,700,000	Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Saleen Sewerage Scheme	S	1,051,000	Inniscarra Water Treatment Plant (Sludge Treatment)(G)W		5,356,000
Youghal Water Supply Scheme	W	2,300,000	Macroon Sewerage Scheme	S	5,150,000
			Minane Bridge Water Supply Scheme	W	1,421,000
<b>Cork West</b>					
Castletownshend Sewerage Scheme	S	1,576,000	<b>Cork West</b>		
		<b>50,797,000</b>	Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
<b>Rural Towns &amp; Villages Initiative</b>			Cape Clear Water Supply Scheme	W	1,679,000
<b>Cork North</b>			Castletownbere Regional Water Supply Scheme	W	8,405,000
Buttevant Sewerage Scheme (Collection System)	S	2,446,000	Glengarriff Sewerage Scheme	S	2,500,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000	Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
			Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
<b>Cork South</b>					<b>95,646,000</b>
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000	<b>Water Conservation Allocation</b>		<b>12,206,000</b>
			<b>Asset Management Study</b>		<b>300,000</b>
<b>Cork West</b>			<b>South Western River Basin District (WFD) Project<sup>1</sup></b>		<b>9,400,000</b>
Ballylicky Sewerage Scheme	S	2,153,000			
Baltimore Sewerage Scheme	S	3,762,000			
Castletownbere Sewerage Scheme	S	5,302,000			
Schull Sewerage Scheme	S	3,523,000			
		<b>24,950,000</b>	<b>Programme Total</b>		<b>485,489,000</b>
<b>Schemes to Advance through Planning</b>					
<b>Cork North</b>					
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000			
Mitchelstown Sewerage Scheme	S	3,000,000			
Newmarket Sewerage Scheme	S	3,152,000			

<sup>1</sup> This project is being led by Cork County Council on behalf of other authorities in the River Basin District

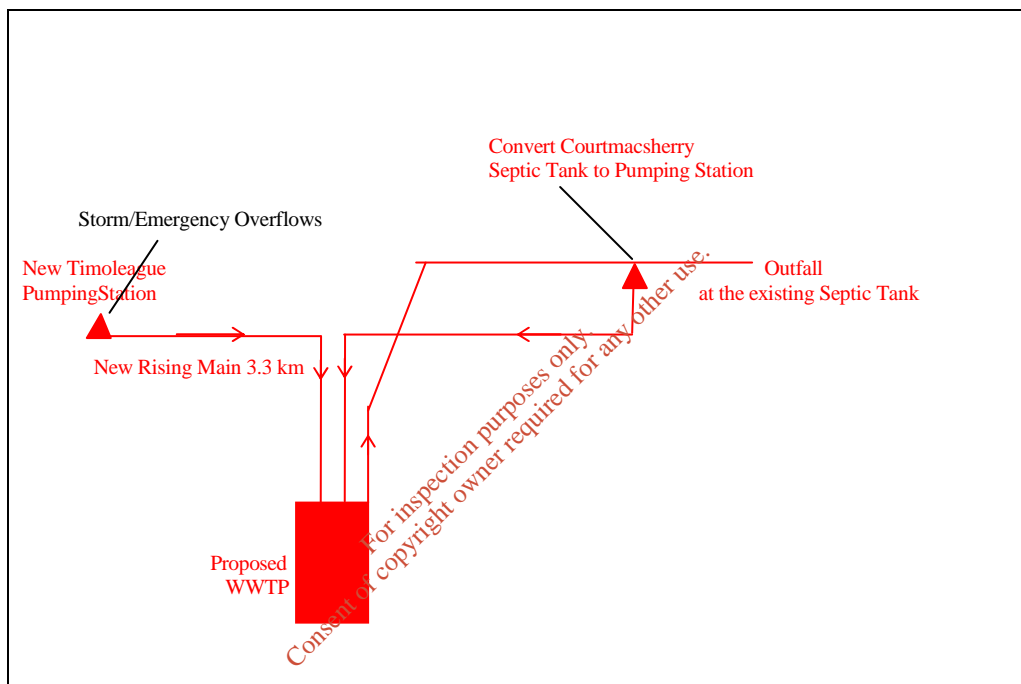
(H) Refers to a Hub as designated in the National Spatial Strategy

(G) Refers to a Gateway as designated in the National Spatial Strategy

# **ATTACHMENT No C.1**

## **OPERATIONAL INFORMATION REQUIREMENTS**

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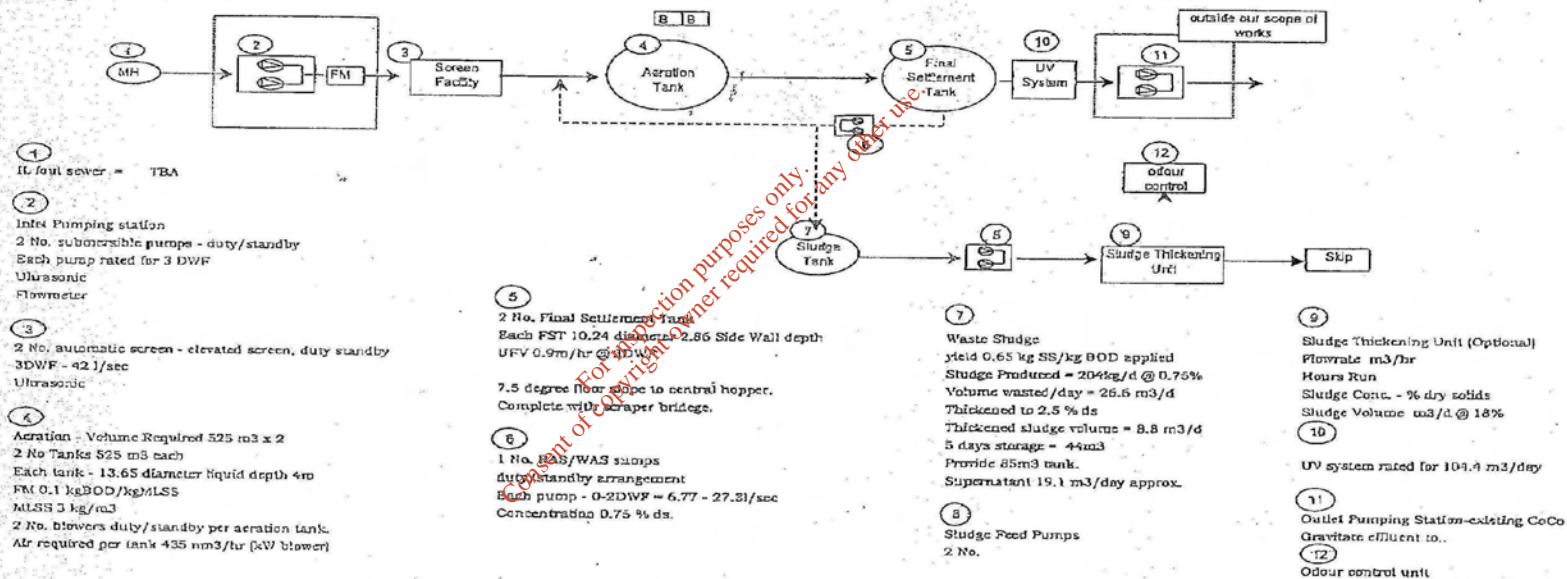


**Schematic of Proposed Sewerage Scheme at Timoleague**

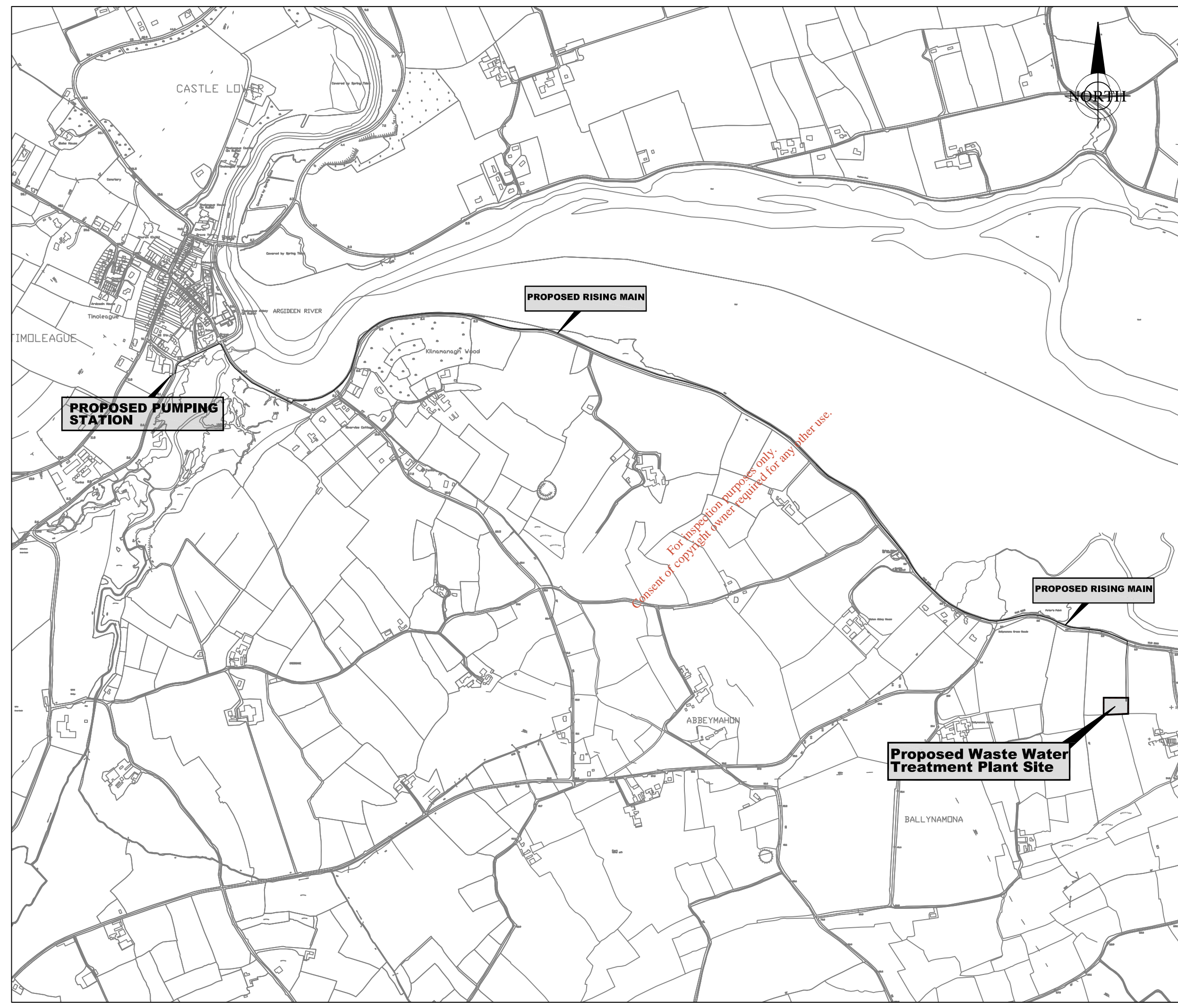
# Proposed Wastewater Treatment Plant – Indicative Layout Process Diagram (Loadings to be Revised)

## Timoleague & Courtmacsherry Combined WWTW

PE	3256
1/2d/day	225
DWF m <sup>3</sup> /d	1209.6
3DWF m <sup>3</sup> /d	3628.8
BOD gr/hd/d	60
BOD kg/d	315







**NOTES**

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2. All dimensions to be checked on site
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**PROPOSED PUMPING STATION**

**PROPOSED RISING MAIN**

**PROPOSED RISING MAIN**

**Proposed Waste Water Treatment Plant Site**

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No.	Date	Drawn	Chkd	Revision	Description

**Cork County Council,**



N.O'MAHONY, B.E.,  
SEN. ENGR. (WATER SERVICES),  
COURTHOUSE, SKIBBEREEN.  
  
M. MURRELL,  
DIRECTOR OF SERVICES  
WEST CORK

Job Title:  
TIMOLEAGUE\_WASTE\_WATER  
DISCHARGE\_LICENCE\_APPLICATION

Drawing Title:  
ATTACHMENT\_C1  
PROPOSED\_PUMPHOUSE\_AND  
RISING\_MAIN\_TO\_WWTP

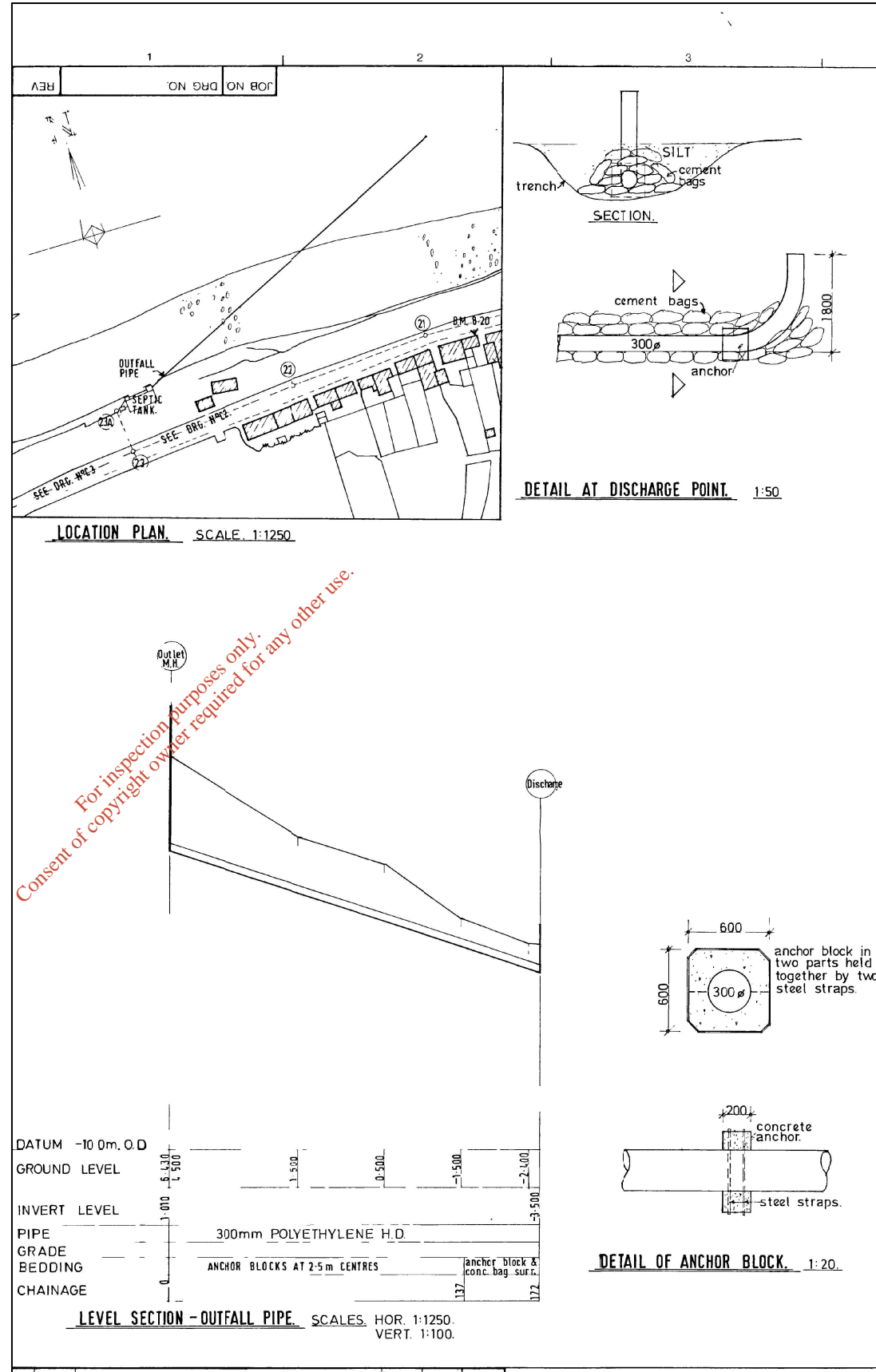
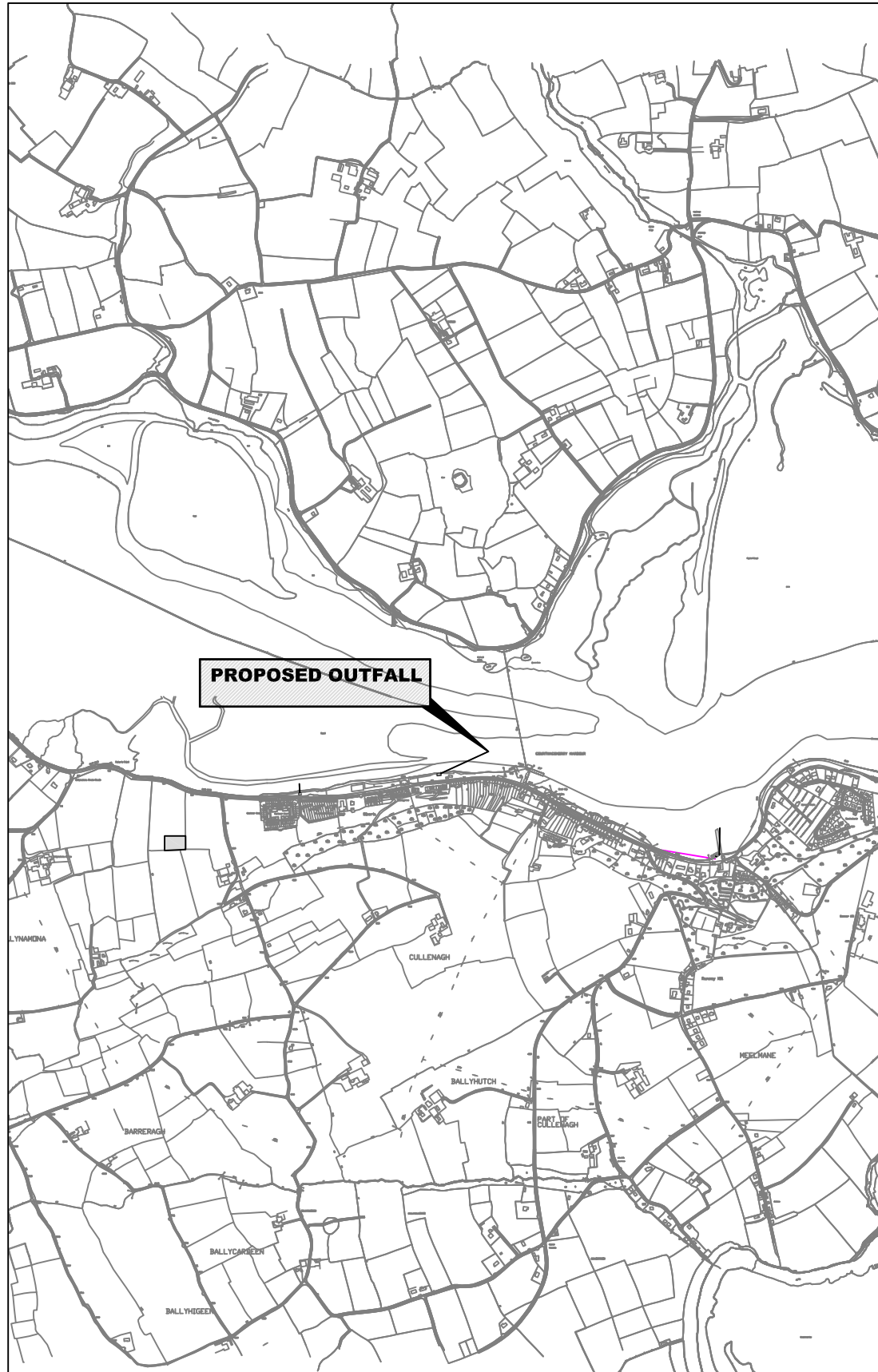
Prepared By: J.CREAGH	Checked By: D.GROARKE	Date: JUNE.2009
Drawing number: TIMO_C1_01	Scales: 1:10000	Rev: -

# **ATTACHMENT No C.2**

## **OUTFALL DESIGN AND CONSTRUCTION**

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## NOTES

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No.	Date	Drawn	Checked	Revision	Description

## Cork County Council, Western Division.



N. O'MAHONY, B.E.,  
SENIOR ENGINEER (WATER SERVICES),  
COURTHOUSE, SKIBBEREEN.  
M. MURRELL,  
DIRECTOR OF SERVICES  
WEST CORK

Job Title:  
**TIMOLEAGUE\_WASTE\_WATER  
DISCHARGE\_LICENCE\_APPLICATION**

Drawing Title:  
**ATTACHMENT\_C.2  
PROPOSED\_OUTFALL\_DETAILS**

Prepared By: J. CREAGH	Checked By: D. GROARKE	Date: JUNE. 2009
Drawing number: TIMO_C2_01	Scales: NTS	Rev: -

**ATTACHMENT No E.2**  
**MONITORING & SAMPLING POINTS**

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## **Attachment E.2 - Timoleague Waste Water Discharge Licence Application** **- Monitoring and Sampling Points**

Grab samples have been collected recently of the effluent from the primary discharge as well as receiving waters and the results are included in Attachments E.4 and F.1 of this application.

Sampling of receiving waters was carried out upstream at Inchy Bridge and downstream at Burren Quay.

There is no drinking water abstraction point downstream of the discharges and therefore the Abstraction Directive is not applicable. Neither are there Shellfish Waters in the estuary.

The recent sample analysis has been carried out by the Laboratory of Cork County Council which is accredited for a number of analytical tests under the Irish National Accreditation Board (INAB) under the ISO 17025 international standard. It is currently accredited for the following parameters under that standard system:

- pH
- Biochemical Oxygen Demand
- Chemical Oxygen Demand
- Suspended Solids
- Ammonia
- Ortho Phosphate
- Total Phosphate
- Chloride
- Sulphate

It is proposed to sample the effluent from the waste water works where accessible and receiving waters once a year in the future for the following parameters at the Cork County Council Laboratory in Skibbereen:

- pH
- Biochemical Oxygen Demand
- Chemical Oxygen Demand
- Suspended Solids
- Ammonia
- Ortho Phosphate
- Total Nitrogen

When the proposed WWTP for Timoleague is constructed it will be operated under a Design, Build & Operate contract. A comprehensive monitoring and

sampling programme will be undertaken by the contractor in accordance with the relevant standards and frequencies as set out by Cork County Council.

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# **ATTACHMENT No E.4**

## **SAMPLING DATA**

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### Attachment E4 Timoleague Discharge Locations Table E4

Sample Date	21/05/2009	21/05/2009	21/05/2009	21/05/2009
Sample	Effluent	Effluent	Effluent	Effluent
Location Number	SW02	SW01	SW04	SW05
Sample Code	GT752	GT753	GT754	GT755
Flow M <sup>3</sup> /Day	*	*	*	*
pH	8.3	8.7	8.6	7.9
Temperature °C	*	*	*	*
Cond 20 °C	1049	955	1466	3060
SS mg/L	172	155	76	157
NH <sub>3</sub> mg/L	39.7	57.8	30.4	45.5
BOD mg/L	297	189	50	69
COD mg/L	771	457	98	232
TN mg/L	75.6	105.7	50.9	75.9
Nitrite mg/L	<0.10	<0.10	1.058	<0.10
Nitrate mg/L	<0.50	<0.50	1.542	<0.50
TP mg/L	29.65	11.08	6.7	5.61
O-PO4-P mg/L	21.0	7.12	3.48	4.43
SO4 mg/L	69.3	59	81.5	130.5
Phenols µg/L	7.581	*	<0.10	5.413
Atrazine µg/L	<0.01	*	<0.01	<0.01
Dichloromethane µg/L	<1	<1	<1	<1
Simazine µg/L	<0.01	*	<0.01	<0.01
Toluene µg/L	<0.28	<0.28	<0.28	<0.28
Tributyltin µg/L	*	*	*	*
Xylenes µg/L	<1	<1	<1	<1
Arsenic µg/L	<0.96	*	<0.96	2
Chromium ug/L	<20	<20	<20	<20
Copper ug/L	34.5	<20	<20	<20
Cyanide µg/L	5	*	<5	9
Fluoride µg/L	449	473	574	476
Lead ug/L	<20	<20	<20	<20
Nickel ug/L	<20	<20	<20	<20
Zinc ug/L	130.9	61.5	<20	27.1
Boron ug/L	<20	<20	48.255	131
Cadmium ug/L	<20	<20	<20	<20
Mercury µg/L	<0.2	*	0.4	<0.2
Selenium µg/L	8.2	*	18.3	37.4
Barium ug/L	<20	<20	<20	<20

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Attachment E4 Timoleague Upstream Table E4		
Sample Date	21/05/2009	21/05/2009
Sample	River Argideen	River spital
Sample Code	GT756	GT757
Location number	1	2
Flow M <sup>3</sup> /Day	*	*
pH	7.8	7.6
Temperature °C	*	*
Cond 20 °C	207	374
SS mg/L	<2.5	5
NH <sub>3</sub> mg/L	<0.1	0.5
BOD mg/L	1	4
COD mg/L	<21	<21
TN mg/L	4.51	12.51
Nitrite mg/L	<0.10	0.257
Nitrate mg/L	3.46	8.903
TP mg/L	<0.05	0.16
O-PO <sub>4</sub> -P mg/L	*	0.09
SO <sub>4</sub> mg/L	<30	<30
Phenols µg/L	<0.10	<0.10
Atrazine µg/L	<0.01	<0.01
Dichloromethane µg/L	<1	<1
Simazine µg/L	<0.01	<0.01
Toluene µg/L	<0.28	<0.28
Tributyltin µg/L	*	*
Xylenes µg/L	<1	<1
Arsenic µg/L	<0.96	1
Chromium ug/L	<20	<20
Copper ug/L	<20	<20
Cyanide µg/L	<5	<5
Fluoride µg/L	<100	<100
Lead ug/L	<20	<20
Nickel ug/L	<20	<20
Zinc ug/L	<20	<20
Boron ug/L	30.805	<20
Cadmium ug/L	<20	<20
Mercury µg/L	<0.2	<0.2
Selenium µg/L	4.6	3.1
Barium ug/L	<20	<20

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Attachment E4 Timoleague Downstream Table E4			
Sample Date	21/05/2009		
Sample	AMBIENT		Average
Sample Code	GT758		
Flow M <sup>3</sup> /Day	*		
pH	8.3		8.3
Temperature °C	*		*
Cond 20°C	35700		35700
SS mg/L	10		10
NH <sub>3</sub> mg/L	0.5"	"saline interference	0.5"
BOD mg/L	3		3
COD mg/L	22		22
TN mg/L	1.21		1.21
Nitrite mg/L	<0.10		<0.10
Nitrate mg/L	<0.50		<0.50
TP mg/L	<0.05		<0.05
O-PO4-P mg/L	<0.05		<0.05
SO4 mg/L	*	"saline interference	*
Phenols µg/L	<0.10		<0.10
Atrazine µg/L	<0.01		<0.01
Dichloromethane µg/L	<1		<1
Simazine µg/L	<0.01		<0.01
Toluene µg/L	<0.28		<0.28
Tributyltin µg/L	*		*
Xylenes µg/L	<1		<1
Arsenic µg/L	1.7		1.7
Chromium ug/L	<20		<20
Copper ug/L	<20		<20
Cyanide µg/L	5		5
Fluoride µg/L	603	"saline interference	603
Lead ug/L	<20		<20
Nickel ug/L	<20		<20
Zinc ug/L	<20		<20
Boron ug/L	2242		2242
Cadmium ug/L	<20		<20
Mercury µg/L	<0.2		<0.2
Selenium µg/L	14.7		14.7
Barium ug/L	<20		<20

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