This is a draft document and is subject to revision.

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Waste Water Discharge Licence Application Form

EPA Ref. Nº: *(Office use only)*	

Environmental Protection Agency
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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

		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.

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

CONTENTS

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.

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. <u>The abbreviation "N/A" should not be used</u>.

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.

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.

Supporting information should form **Attachment Nº A.1**

SECTION A: NON-TECHNICAL SUMMARY

The village of Kilworth is situated 1km off the main Dublin – Cork National Route, N8, circa 5km north of Fermoy. The village is predominately rural in setting, however the village has expanded in recent years with the development of housing estates within the agglomeration.

The Waste Water Works and the Activities Carried Out Therein

The wastewater in Kilworth is collected in a partially combined foul and separate foul sewerage drainage network. The partially separate collection system presently has five ejector stations pumping into the main sewer that gravitates to the wastewater treatment plant. One of the ejector stations pumps directly to the manhole directly up gradient of the existing inlet works.

The wastewater treatment plant is located at the end of an un-surfaced access lane through a farm at the eastern end of the village in the townland of Knockanohill. The plant is not visible from the road. The area of the site is approximately 1 acre.

Kilworth WWTP is designed for a Population Equivalent (PE) of 2,500, which was commissioned in January 2009. Activated Sludge is the process employed at the Kilworth waste water treatment plant. Influent initially gravitates into a inlet works, which consists of a automatic screen and inlet sump. After effluent enters the sump the effluent is pumped to the aeration tank. Following the aeration tank the effluent overflows to the adjacent clarifier tank, which is equipped with an half bridge sludge scrapper. Tertiary treatment is the final stage in the treatment process and this consists of 2 Nr Sand Filters. Final influent is discharged to via 225mm outfall pipe to the River Douglas.

Sludge may be returned from the settling tank to the aeration tank and excess sludge is forwarded to the on site Picket Fence Thickener, which can cater for 30 days storage after which time sludge is removed off site for disposal.

In the event of high storm flows, effluent in excess of 3DWF will overflow the sump to a Storm Holding Tank, complete with tipping bucket. In the event of flows exceeding the capacity of the storm tank, the storm effluent will discharge via the outfall pipework.

Currently the WWTP is an average DWF of 240m^3/d entering the plant. Based average hydraulic load of 200l/d/p, the PE equates to 1,200

Kilworth WWTP is operated by Cork County Council. The plant is operated by a caretaker who duties also involves the maintenance of a number of other small WWTP's in the area. The caretaker is on duty from 8.00am to 5.30pm Monday – Saturday.

The sources of emissions from the waste water works

The pollution load for the Kilworth agglomeration arises from the following areas:

- Domestic population
- Commercial premises
- School & crèches

- Infiltration

The sewerage from all commercial premises is collected via the public sewer and treated in conjunction with the domestic waste at the WWTP.

Currently the WWTP is receiving flows has an average DWF of 230m^3/d entering the plant.

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 final effluent is discharged to the Douglas River, which is adjacent to the wastewater treatment plant site. The DWF flow to the existing WWTP is in the order of 240m^3/d.

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

Technology
The WWTP has a sufficient number of standby pumps, automatic samplers, tertiary facilities, etc is provided to ensure continuation of the wastewater treatment & reduce to emissions from the WWTP

The treatment works consists of the following elements:

- Inlet Works
- Forward Feed Sump
- Aeration Tank
- Settling Tank
- Storm Tank
- Picket Fence Thickener
- Outfall to Douglas River

Techniques
The new WWTP shall be operated and managed in accordance with the Performance Management System, developed by the Water Service National Training Group (WSMTG).

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

A new WWTP was recently installed at the site and was commissioned in January 2009. The PE of the new WWTP is 2,500 and has a construction of cost of in the order of €1 million Euro. This was upgrade was undertaken under the Serviced Land Initiative programme.

Following the upgrade of the WWTP, Cork County Council does not envisage any further planned measures for Kilworth WWTP.

Measures planned to monitor emissions into the environment

The Cork County Council Environmental Laboratory carries out sampling of the influent and effluent biannually. Sampling, Monitoring and analysis of the wastewater sludge is also undertaken by the Environmental Laboratory.

The Cork County Council Environmental Department located in Inniscarra takes samples from the River Bride upstream and downstream of the wastewater treatment plant approximately 6 times per year. Samples of the influent and effluent are also taken at these times.

The new wastewater treatment plant shall be equipped with automatic samplers on the inlet, overflow and outlet lines.

The EU Water Framework Directive Monitoring Programme is to be fully operational by the year 2012. This monitoring programme was prepared by the EPA to meet the requirements of the EU Water Framework Directive (2000/60/EC) and National Regulations implementing the Water Framework Directive (S.I. No. 722 of 2003) and National Regulations implementing the Nitrates Directive (S.I. No. 788 of 2005).

List of Attachments include the following:

- Location Map Scale 1:50,000 Attachment A1 Map 1
- Site Location Map of WWTP & Pumping Stations Attachment A1 Map 2
- Site Layout Attachment A1 Map 3

SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration:	Kilworth & Environs

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.

Name*:	Cork County Council
Address:	Northern Division
	Annabella
	Mallow
	Co. Cork
Tel:	022 21123
Fax:	022 21983
e-mail:	Frank.cronin@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.

Name*:	Frank Cronin
Address:	Northern Division
	Annabella
	Mallow
	Co. Cork
Tel:	022 21123
Fax:	022 21983
e-mail:	Frank.cronin@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

Name*:	Not Applicable
Address:	Not Applicable
Tel:	Not Applicable
Fax:	Not Applicable
e-mail:	Not Applicable

*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

Name*:	Not Applicable
Address:	Not Applicable
Tel:	Not Applicable
Fax:	Not Applicable
e-mail:	Not Applicable

*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 (≤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 exists.

Name*:	Brendan O'Gorman
Address:	Kilworth WWTP
	Knockanohill
	Kilworth
	Co. Cork
Grid ref (6E, 6N)	184090E 102434N
Level of Treatment	Tertiary
Primary Telephone:	025-24944
Fax:	025-84072
e-mail:	Brendan.ogorman@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 (≤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**
	√	

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.

Type of Discharge	225mm diameter outfall pipe from wastewater treatment plant. Open pipe
Unique Point Code	SW – 01 KILW
Location	Knockanohill, Kilworth
Grid ref (6E, 6N)	184362E 102659N

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.

Attachment included	**Yes**	**No**
	√	

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.

Type of Discharge	Not Applicable
Unique Point Code	Not Applicable
Location	Not Applicable
Grid ref (6E, 6N)	Not Applicable

Attachment B.4 should contain appropriately scaled drawings / maps (≤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.

Attachment included	**Yes**	**No**
		√

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.

Type of Discharge	Not Applicable
Unique Point Code	Not Applicable
Location	Not Applicable
Grid ref (6E, 6N)	Not Applicable

Attachment B.5 should contain appropriately scaled drawings / maps (≤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.

Name:	Cork County Council
Address:	Planning Department
	County Hall
	Carriagrohane Road
	Cork
Tel:	021 4276891
Fax:	021 4867007
e-mail:	Planninginfo@corkcoc.ie

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

has been obtained	√	***is being processed***	
is not yet applied for		***is not required***	

Local Authority Planning File Reference Nº:	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.

Name:	Health Service Executive
Address:	North Cork Area Headquarters
	Gouldhill
	Mallow, Co. Cork
Tel:	022 30200
Fax:	022 30211
e-mail:	Gerry.oconnell.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.

Name:	Not Applicable
Address:	Not Applicable
Tel:	Not Applicable
Fax:	Not Applicable
e-mail:	Not Applicable

Relevant Authority Notified	**Yes**	**No**
		√

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

Attachment included	Yes	No
		√

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.

Attachment included	Yes	No
	√	

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.

Population Equivalent	**1,650**
Data Compiled (Year)	**2007**
Method	**Hydraulic Flow**

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.

The current population equivalent being treated at Kilworth WWTP is 1200 based on hydraulic flow assessments.

All developments with granted planning permission and all developments under construction have been included in the agglomeration. The additional p.e due to

the granted planning permissions is estimated to be in the order of 450 p.e. There are currently no planning permissions granted in relation no non domestic activities.

With the completion of the recently commissioned 2,5000 p.e WWTP the plant shall be capable of accommodating additional hydraulic and organic loading without posing an environmental risk to the receiving water.

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.

Class of waste water discharge	Fee (in €)
	€15,000

Appropriate Fee Included	Yes	No
	√	

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.

Cork County Council has recently commissioned a new WWTP for the agglomeration of Kilworth.

The new WWTP was constructed to cater for a PE of 2,500 and BOD loading of 240Kg/d to ensure compliance with the urban wastewater regulations.

The Contract for the upgrade of the WWTP includes for the following elements:

- Construction of new Inlet Works
- Construction of new Secondary Treatment Works
- Provision of Sludge Holding Tank
- Construction of new Outlet Works
- Miscellaneous Mechanical and Electrical Works
- Control / Staff Facilities Building
- Site Roads and Footpaths
- New Site Fencing
- Decommissioning existing treatment plant
- Landscaping and screen planting

With the completion of the recently commissioned 2,500 p.e WWTP the plant shall be capable of accommodating additional hydraulic and organic loading without posing an environmental risk to the receiving water.

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.

Attachment B.12 should contain the most recent licence issued under the Forsehore 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**
		√

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.

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.

Introduction

E.P.S. intends to provide a Waste Water Treatment Plant designed in accordance with BATNEEC and the Urban Waste Water Directive S.I.440 of 2004. The treated effluent would comply with the standards shown in the following table:

Parameter	Effluent Limit
BOD	10 mg/L
COD	70 mg/L
Suspended Solids	10 mg/L
TP	1 mg/L

TABLE 1 – EFFLUENT LIMITS DISCHARGE

Article I. Plant Description

The Wastewater Treatment Works have an ultimate design flow of 74.4 m^3/h (3DWF) for a population Equivalent of 2,500 PE.

The E.P.S. proposal is based on Extended Aeration Treatment plant with equipment necessary for the efficient operation of the plant. The following provisions are incorporated in the design:

1. 1 No. Automated Inlet Fine Screen
2. Provision for storm tank
3. The system offered includes as Biological Treatment based on 1 No. Aeration Treatment Tank
4. The Secondary Treatment E.P.S. proposed 1 No. Settlement Tank sized for the above loadings including Scum Box
5. Provision of 30 days on site PFT based on 4%DS

F01 Inlet Works

The maximum incoming flow to the inlet works is 148.75 m^3/h (6DWF – 41.32l/s). The inlet works comprises of 1 No. 6mm Mechanical Screen.

An ultrasonic sensor provides level measurement. The transmitter for the flow meter is mounted in the main control panel in the Control building, complete with local flow indicator.

Flows up to 3 DWF receive full treatment. Flows in excess of 3 DWF will overflow the inlet pump sump and flow to the storm water storage tank. The remainder will be pumped to the Biological Treatment streams.

F02 Biological Treatment

E.P.S. proposes the Extended Aeration Treatment Process.

Aeration system comprises of a lattice of fine bubble air diffusers and supply networks mounted on the cell floor. Diffusers are arranged so that, with a minimum of 75% diffusers in use, they will maintain the cell contents at a dissolved oxygen level, which can be varied from 0 - 2.5 mg/l. Diffusers are capable of providing fine bubbles (0.5 - 3.0 mm. in diameter) with clog free domes capable of preventing inflow to pipe-work when not in operation.

Aeration is by fine bubble diffused air through banks of diffusers installed on the bottom of the tank.

The DO control span is operational at 0-2.5 mg/L.

DO probes incorporate self-cleaning mechanism, integrated electronics; handrail mounted tilting bracket and transmitter with local LCD indicator. The readings provided by dissolved oxygen meters are used to automatically control the cell modulating valves to maintain preset dissolved oxygen set-points.

The Air blowers are capable of supplying 190 Nm^3/h at 450 mbar of free air. Provision is made for 2 No. Blowers (Duty/Standby), positive displacement low pulse, tri-lobe rotary type incorporating high efficiency motors and low noise

emission. The blower speed is controlled to maintain a constant preset air pressure in the air delivery header as air demand in the aeration basins varies. Acoustic control measures are in place to limit the operating noise to 81dBA measured at 1 m distances for the blowers in free field conditions. Each blower includes a stainless steel wafer type non-return valve with stainless steel disc and metal seating.

From proposed Settlement Tank, submersible MLSS pumps, return mixed liquor to the Aeration Tank at flow rate of 3DWF.

Sludge is wasted on a continuous basis, directly from the final settlement tank outlet by means of a submersible pump. Sludge age and MLSS is controlled directly within the system by varying the output from the sludge pumps by the use of frequency invertors linked to magnetic flow meter.

F03 Secondary Settlement Tank

The effluent coming form the aeration basin gravitates to 1 no. Secondary Settlement Tank. The proposed Settling Tank is designed for 0.75 m/hr upward flow velocity, at a hydraulic loading of 3 DWF and a side wall of 3 m. Tanks are equipped with a rotating half bridge sludge scraper, inlet diffusion drum and sludge draw- off pipework, "V" notch weir plate baffle-plate and scum collector.

Sludge settled within the secondary settlement tank is scraped by means of a bridge-mounted scrapers which deposit settled sludge into a central sludge hopper from where it is drawn by means of a gravity pipe to the return sludge pumpset located adjacent to the Settlement Tank. Flows to and from the settling basins are indicated on the control panel in the Control building. The sludge return-pump then pumps the sludge at a rate of 3 DWF and thus returns settled sludge to the start of the process.

F04 Chemical Treatment

Phosphorous exists in three main forms in wastewater; ortho-phosphate, polyphosphate and organic phosphate. During aerobic treatment, the later two

forms are converted to ortho-phosphate, which is the easiest form to precipitate using chemical addition.

E.P.S. proposes to remove phosphorous using chemical dosing of Ferric Sulphate. The Chemical Dosing location for the chemical precipitation of phosphorous shall be proposed at the aeration tank i.e. simultaneous precipitation, because polyphosphates and organic phosphorous are less easily removed than orthophosphorus.

F05 Sludge Thickening

Sludge will be pumped to a Picket Fence Thickener via duty/standby Progressive Cavity Pumps and will be capable of thickening the sludge produced to a Dry Solids Content of 4%. All supernatants will be returned to the Head of Works, and sludge shall be tanked off site.

F06 Tertiary Treatment

Water from settlement tank is fed into an area below the entire sand bed. As the water rises to the surface, the particles if dirt remain between the grains of sand. Once the water is above the sand bed, it is clean for further treatment, depending on the process.

The cleaning of the actual filter is performed by the sand washer, which continuously flushes the sand grains in the filter. An airlift sucks up sand from the bottom, where the grains are dirtiest, and feeds them into the sand washer. In the washer the dirt is separated from the grains of sand, partly through flushing, partly through fiction. The clean sand is then returned to the sand bed in an even layer at the surface.

The filter wash sequence comprises

a) Air scour.
b) Wash-water.

Two backwash pumps in a duty/standby configuration and LP blower are provided to deliver treated water and low-pressure air respectively for filter washing.

A filter wash is initiated automatically from indication of high filter differential pressure and/or on a time basis.

The control system will prevent a wash commencing if the blower or wash-water pump are inoperative, or instrument air pressure is low.

(a) In Service Sequence

When the filter is working normally the Inlet valve to filter will be fully opened. The level of water in the filter will be maintained at a pre-set operating level. This is achieved using the signal from the u/sonic level sensor to monitor the level in the filter.

If the level begins to rise, the outlet valve will open to increase compensate for increase head, which is restricting flow. This will control the water level in the filter. This will typically occur when a filter is beginning to clog. (i.e. rising water level)

If the level begins to drop, the outlet valve is throttled closed to control the rate of flow leaving the filter, which will control the water level in the filter. This will typically occur when a filter has returned to service after a backwash.

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(b) Backwash Sequence.

A differential pressure transmitter will monitor the pressure across each filter bed. When a filter begins to clog, the pressure difference across it will increase. When a predetermined value is reached a backwash cycle will begin.

At this point the inlet penstock will turn to the fully closed position. The water level in the filter will now begin to fall; when the level in the tank lowers to the

level of the backwash wall the outlet valve will be closed. The wash water outlet valve will now be opened.

F07 Final Effluent

Final effluent prior to discharge to an outfall is subject to outflow measurement and sampling. A composite flow proportional wastewater sampler provides sampling.

General Description of Pumping Stations

There are five Pumping Stations located within the agglomeration of Kilworth. These are located as per Drawing Attachment A1-Map 2. Three of the Pumping Stations are located within Housing Developments and are privately operated by the Developer's. Two of the Pumping Stations are Council operated.

Elm Place Pumping Station – Council Operated
Grid Reference:
This Pumping Station caters for domestic effluent arising from Elm Place Housing Estate. The Pumping Station consists of the following elements:

- 2 Nr pump complete with lifting chains controlled by floats
- The capacity of the sump is estimated to be 9m^3
- No overflow

Brennan Place Pumping Station – Council Operated
Grid Reference:
This Pumping Station caters for domestic effluent arising from Breenan Place Housing Estate. The Pumping Station consists of the following elements:

- 2 Nr pump complete with lifting chains controlled by floats
- The capacity of the sump is estimated to be 9m^3
- No overflow

Oak Wood Pumping Station – Privately Operated
Grid Reference:
This Pumping Station caters for domestic effluent arising from Oak Wood Housing Estate. The Pumping Station consists of the following elements:

- 2 Nr pump complete with lifting chains
- The capacity of the sump is estimated to be 9m^3
- No overflow

Pairc na gCapaill Pumping Station – Privately Operated
Grid Reference:
This Pumping Station caters for domestic effluent arising from Pairc na gCapaill Housing Estate. The Pumping Station consists of the following elements:

- 2 Nr pump complete with lifting chains
- The capacity of the sump is estimated to be 9m^3
- No overflow

Cois Coilte Pumping Station – Privately Operated
Grid Reference:
This Pumping Station caters for domestic effluent arising from Elm Place Housing Estate. The Pumping Station consists of the following elements:

- 2 Nr pump complete with lifting chains
- The capacity of the sump is estimated to be 9m^3

- No overflow

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.

Attachment included	**Yes**	**No**
	√	

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.

Primary Discharge Point SW01-KILW

Type of Discharge	225mm diameter concrete outfall pipe from wastewater treatment plant. Open pipe
Unique Point Code	SW – 01 KILW
Location	Knockanohill, Kilworth
Grid ref (6E, 6N)	184362E, 102659N

The primary discharge point, SW01-Kilworth, is the main outlet from Kilworth Wastewater Treatment Plant. The outfall traverses a field in a north easterly direction, approximately 300m from the outlet manhole to the River Douglas. The point of discharge is a 225mm concrete open pipe.

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**
		√

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/. ***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/. 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
SW01-KILW	Primary	Cork County Council	River	Rover Douglas		184362	102659

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. 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.

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/.

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/.

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.

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
SW01	Primary	Sampling	184090	102434	N
aSW01u	u/s	Sampling	183987	103428	N
aSW01d	d/s	Sampling	184728	102117	N

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. 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.

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.

Attachment included	Yes	No
	√	

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.

- 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/. 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.

- 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.

- 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.

- 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.

- 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[1] 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[2];

  [1]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)

  [2]Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (OJ No. L 103, 25.4.1979)

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

- 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.**

The plant is performing satisfactorily at present and operating within the requirements of the following legislation. As the plant has been recently upgraded there are no improvements planned at present for the Kilworth Wastewater Treatment Plant.

Water Quality Standards

The Water Framework Directive (WFD) aims to establish an integrated approach to water protection, improvement and sustainable use. In order to achieve the requirements of the WFD, Ireland has been divided into a number or River Basin Districts or management units. The South Western River Basin District (SWRBD) comprises substantially the counties of Cork and Kerry, all of Cork City, and also parts of counties Limerick, South Tipperary and Waterford.

The River Douglas is included in the SWRBD. The overall objectives of the SWRBD project include the following:

- Strengthen compliance with EU Directives and national legislation
- Collect and analyse information to determine water quality and identify possible threats to water status
- Prevent further deterioration and protect/enhance water quality
- Develop a programme of measures to address all significant pressures and sources of impact on aquatic ecosystems and groundwater
- Encourage and facilitate public participation including the maintenance of a project website
- Promote sustainable water use

In order to achieve these objectives the following project tasks have been identified:

- Identify pressures on water bodies and assess risk of not achieving compliance with the Water Framework Directive
- Prepare a Characterisation Report
- Identify Heavily Modified (HMWB) and Artificial Water Bodies (AWB)
- Establish risk to waters from Hazardous Substances
- Establish data management system and GIS
- Prepare programme of measures
- Review of monitoring needs
- Design monitoring programme
- Prepare River Basin Management Strategy
- Assist public participation in the project
- Prepare printed reports
- Assist capacity building

The SWRBD proposed set water quality standards for the River Douglas under a water quality / catchments management plan. The River Douglas water body has been given Moderate Status due to its location in a *Margaritifera margaritifera* catchment and also on the advice of the Central Fisheries Board on the basis of fish status.

The River Basin Management System currently being developed will include a programme of measures and a River Basin Management Strategy, designed to achieve at least good status for all waters by 2015, and to maintain high status where it exists. Therefore discharges from Kilworth Wastewater Treatment Plant cannot cause deterioration in good water quality under the Water Framework Directive at present.

The River Douglas is not a designated Shellfish area under the Shellfish Waters Regulations, S.I.200 of 1994. The Araglin River into which the River Douglas flows, is also not designated under these regulations, neither is the River Blackwater of which the Araglin River is a tributary. The confluence of the River Douglas and Araglin River is approximately 1.4km downstream, while the confluence of the Araglin River and the River Blackwater is approximately 3.4km downstream of the discharge point.

The River Douglas is not designated a Salmonid Water under Salmonid Water Regulations, S.I. 293 of 1988, however the River Blackwater which the Araglin River joins, is designated Salmonid Water under Salmonid Water Regulations, S.I. 293 of 1988.

The River Douglas is not designated a Bathing Water under the Bathing Water Regulations, S.I. 178 of 1998 as amended.

The River Douglas is not a designated Sensitive Area under the Urban Wastewater Treatment Regulations 2001 (S.I. 254 of 2001). The River Blackwater downstream of Mallow Railway to Ballyduff Bridge is a designated Sensitive Area. This is not within 2km of any discharge point from Kilworth Wastewater Treatment wastewater works.

Drinking Water is not abstracted downstream of the discharge point from the WWTP. Kilworth Public Water Supply is supplied by a bored well located at Downing Bridge Area located along the N8 west of the village and WWTP.

Areas of Conservation

The Department of the Environment, Heritage and Local Government is responsible for the designation of conservation sites in Ireland. It is required under European law and national laws to conserve habitats and species, through designation of conservation areas under Special Areas of Conservation, Natural Heritage Areas and Special Protected Areas.

Special Areas of Conservation
Candidate Special Areas of Conservation (cSACs) are protected under the European Union (EU) Habitats Directive (92/43/EEC), as implemented in Ireland by the European Communities (Natural Habitats) Regulations, 1997.

The Blackwater River cSAC (Site Code: 002170) is very large, extending from the tidal estuary of the river at Youghal Co. Cork to the upper tributaries and their flood plains, in Cos. Cork Kerry, Limerick, Tipperary and Waterford, including the River Douglas is a designated Special Area of Conservation.

The cSAC is designated on the basis of the presence of a large number of EU Habitats Directive Annex 1 habitats and Annex 2 species. Many of these are estuarine habitats and species found only in the lower reaches of the River Blackwater, however a number may be present in the River Douglas section of the cSAC including, for example the Annex 1 habitats, 'alluvial wet woodlands',

'floating river vegetation', and 'old oak woodlands'; and the Annex 2 species sea lamprey, river lamprey, brook lamprey, Atlantic salmon, freshwater pearl-mussel and otter.

The Blackwater River Site Synopsis is included in this attachment.

Natural Heritage Areas
The River Douglas does flow through a Proposed Natural Heritage Areas (NHA). Natural Heritage Areas are the basic designation for wildlife. An NHA is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection.

Under the Wildlife Amendment Act 2000, NHAs are legally protected from damage from the date they are formally proposed for designation.

Special Protected Areas
Special Protection Areas (SPAs) are designated in order to safeguard certain habitats pursuant to EU Directive requirements. The EU Birds Directive (79/409/EEC) requires designation of SPAs for listed rare and vulnerable species, migratory species and wetlands.

No designated special protected areas are located along the River Douglas. There are areas of the River Blackwater that are designated SPAs, however these are located downstream of Fermoy and therefore greater than 2km from all discharge points.

Receiving Water Quality Requirement

Water Quality analysis data for the River Douglas was obtained from Cork County Council. The EPA also takes samples from two locations along the River Douglas. In the vicinity of the treatment plant, two nr monitoring stations are relevant to Kilworth WWTP. These stations are the flowing:

- Glansheskin Bridge – upstream of Kilworth WWTP discharge point by approximately 1.2km.
- Douglas Bridge – down stream of Kilworth WWTP discharge point by approximately 650m.

Table F1-1: Biological Quality Rating for River Douglas – Upstream & Downstream of Discharge

Sampling Location	**EPA Biological Quality Rating (Q values)**			
	1995 -1997	**2001 – 2003**	**2006**	**Target**
Glansheskin Bridge	4-5	4-5	4-5	4-5
Douglas Bridge	4	3-4	3-4	4

The Royal Commission in its report on Water Quality Guidelines recommends that *"in all circumstances effluent discharges which are calculated to raise the BOD of the receiving water, outside the mixing zone, by more than 1 mg/l should be discouraged".* The average existing background level for BOD is estimated at 1mg/l. Therefore the receiving water limiting value for BOD for this river is 2mg/l.

The standard water quality requirements for dangerous substances are based on the Water Quality (Dangerous Substances) Regulations 2001.

Hence, the principal receiving water quality requirements are given in Table 3 below: -

Table F1-2: Receiving Water Quality Limiting Values

Parameter	Water Quality Standard (mg/l)
Chromium	30
Copper	30
Lead	10
Nickel	50
Zinc	100

Based on Hardness of receiving waters >100mg/l CaCO3

Effluent Standards

The treated effluent quality requirements shown in the table below are determined with respect to the EC Urban Wastewater Directive, given effect in Irish Law by S.I.254 of 2001.

Table F1-3: Minimum Effluent Standards based on S.I.254 of 2001 and Recorded Effluent Concentrations

Parameter	Effluent Standards (mg/l)	Actual Concentrations* (mg/l)
Biological Oxygen Demand (BOD)	25	169.35
Suspended Solids (SS)	35	146.6

*Actual Concentration is the average effluent concentrations recorded at the outlet of the WWTP by Cork County Council Wastewater Laboratory during the period Nov '07 to Jan '09.

From Table 4 above, it is evident that treated effluent from the old Kilworth wastewater treatment plant was not compliant with the quality of effluent standards set out in the above legislation. The New Wastewater Treatment Plant is being commissioned in early 2009 and as a result the effluent standards will be in compliance with the regulations.

Assimilative Capacity of the Receiving Water – Data relates to the old WWTP (new WWTP commissioned in early 2009, as such data could not be included due requirement to submit data by deadline required.)

Assimilative Capacity of the Receiving Water

a) **<u>Mass Balance Equation for Orthophosphate:</u>**

Median flow of River = 0.29 m^3/sec
Median oPO_4-P in River (upstream) = 0.05 mg/L

Average volume of discharge = 0.0045 m^3/sec
Median value for oPO_4-P in discharge = 5.1 mg/L

$$C_{final} = \frac{(0.28 \times 0.05) + (0.0045 \times 5.1)}{0.29 + 0.0045}$$

C_{final} = 0.12 mg/L oPO_4-P

The increase in Orthophosphate due to the discharge of the **old Kilworth WWTP** is 70 μg/L.

b) **Mass Balance Equation for BOD:**

Flow of River (95%) = 0.24 m^3/sec
Average BOD in River (upstream) = 2 mg/L

Average volume of discharge = 0.0042 m^3/sec
Average BOD in discharge = 169.35 mg/L

$$C_{final} = \frac{(0.24 \times 2) + (0.0042 \times 169.35)}{0.24 + 0.0042}$$

C_{final} = 4.88 mg/L BOD

The increase in BOD due to the discharge of the Old Kilworth WWTP is 2.88 mg/L.

c) **Mass Balance Equation for Suspended Solids:**

Flow of River (95%) = 0.24 m^3/sec
Average Suspended Solids in River (upstream) = 1mg/L

Average volume of discharge = 0.0042 m^3/sec
Average Suspended Solids in discharge = 146.6mg/L

$$C_{final} = \frac{(0.24 \times 1) + (0.0042 \times 146.6)}{0.24 + 0.0042}$$

C_{final} = 3.5 mg/L Suspended Solids

The increase in Suspended Solids due to the discharge of the Old Kilworth WWTP is 2.5 mg/L.

d) **Mass Balance Equation for Total Phosphate:**

50% Median flow of River = 0.29 m^3/sec
Median TPO_4-P in River (upstream) = 0.125 mg/L

Average volume of discharge = 0.0042 m^3/sec
Median TPO_4-P in discharge = 6.816 mg/L

$$C_{final} = \frac{(.29 \times 0.122) + (0.0042 \times 6.816)}{0.29 + 0.0042}$$

C_{final} = 0.22 mg/L TPO_4-P

The increase in Total Phosphate due to the discharge of the Old Kilworth WWTP is 95μg/L.

e) **Mass Balance Equation for Total Nitrogen:**

Flow of River (95%) = 0.24 m^3/sec
Average Total Nitrogen in River (upstream) = 1.4 mg/L

Average volume of discharge = 0.0042 m^3/sec
Average Total Nitrogen in discharge = 44.5 mg/L

$$C_{final} = \frac{(0.24 \times 1.4) + (0.0042 \times 44.5)}{0.24 + 0.0042}$$

C_{final} = 2.14 mg/L Total Nitrogen

The increase in Total Nitrogen due to the discharge of the Old Kilworth WWTP is 0.74 mg/L.

f) **Mass Balance Equation for Sulphate:**

Flow of River (95%) = 0.24 m^3/sec
Average Sulphate in River (upstream) = 30 mg/L

Average volume of discharge = 0.0042 m^3/sec
Average Sulphate of discharge = 30 mg/L

Average Sulphate in River (downstream) = 30 mg/L

$$(0.0665 \times 30) + (0.0042 \times 30)$$

$$C_{final} = \frac{}{0.24 + 0.0042}$$

C_{final} = 0 mg/L Sulphate

The increase in Sulphate due to the discharge of the Old Kilworth WWTP is 0 mg/L.

g) **Mass Balance Equation for Ammonia-N:**

Flow of River (95%) = 0.24m^3/sec
Average Ammonia-N in River (upstream) = 0.075 mg/L

Average volume of discharge = 0.0042 m^3/sec
Average Ammonia-N in discharge = 27.125 mg/L

Average Ammonia-N in River (downstream) = 0.075 mg/L

$$C_{final} = \frac{(0.24 \times 0.075) + (0.0042 \times 27.125)}{0.24 + 0.0042}$$

C_{final} = 0.54 mg/L Ammonia

The increase in Ammonia due to the discharge of Watergrasshill WWTP is 0.465mg/L.

Assimilative Capacity Calculations were not performed for the following parameters, as the substances were below the limit of detection in the upstream samples, in the discharge samples and in the downstream samples:

(a) Chromium
(b) Copper
(c) Lead
(d) Nickel
(e) Cadmium
(f) Barium
(g) Boron
(h) Zinc
(i) Fluoride

Discharges in proximity of Wastewater Works

Water quality analysis data presented in Tables 5 & 6 below was recorded by Cork County Council wastewater laboratory and covers a sampling period in January 2009.

Table F1-5: Upstream Water Quality

Parameter	**Upstream Monitoring Station**
	20/01/09
Ph	7.5
BOD	2
SS	3
Ammonia	0.05
Ortho-Phosphate	0.05

Table F1-6: Downstream Water Quality

Parameter	**Downstream Monitoring Station**
	20/01/09
Ph	7.5
BOD	2
SS	1
Ammonia	0.05
Ortho-Phosphate	0.05

Limited data to determine effects.

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
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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. 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 or down gradient of the discharge point.

Attachment F.2 should contain any supporting information.

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).

The plant is operating satisfactory at present and is operating within the requirements of the relevant legislation, outlined above. Recent improvements include the construction and commissioning of the new 3,150 PE WWTP and laying of new sewer collection system.

Water Framework Directive 2000/60/EC

The Water Framework Directive (WFD) aims to establish an integrated approach to water protection, improvement and sustainable use. In order to achieve the requirements of the WFD, Ireland has been divided into a number or River Basin Districts or management units. The South Western River Basin District (SWRBD) comprises substantially the counties of Cork and Kerry, all of Cork City, and also parts of counties Limerick, South Tipperary and Waterford.

The overall objectives of the South Western River Basin District project include the following:

- Strengthen compliance with EU Directives and national legislation
- Collect and analyse information to determine water quality and identify possible threats to water status
- Prevent further deterioration and protect/enhance water quality
- Develop a programme of measures to address all significant pressures and sources of impact on aquatic ecosystems and groundwater
- Encourage and facilitate public participation including the maintenance of a project website
- Promote sustainable water use

In order to achieve these objectives the following project tasks have been identified:

- Identify pressures on water bodies and assess risk of not achieving compliance with the Water Framework Directive
- Prepare a Characterisation Report
- Identify Heavily Modified (HMWB) and Artificial Water Bodies (AWB)
- Establish risk to waters from Hazardous Substances
- Establish data management system and GIS
- Prepare programme of measures
- Review of monitoring needs
- Design monitoring programme
- Prepare River Basin Management Strategy
- Assist public participation in the project
- Prepare printed reports
- Assist capacity building

The EPA also takes samples from one location along the River Douglas downstream (d/s) of the WWTP (prior confluence of River Douglas & Araglin River). This is located at the following:

- Douglas Bridge 650m downstream of discharge

Table G1-1: Upstream Water Quality

Parameter	**Upstream Monitoring Station**
	20/01/09
Ph	7.5
BOD	2
SS	3
Ammonia	0.05
Ortho-Phosphate	0.05

Table G1-2: Downstream Water Quality

Parameter	**Downstream Monitoring Station**
	20/01/09
Ph	7.5
BOD	2
SS	1
Ammonia	0.05
Ortho-Phosphate	0.05

Birds Directive 79/409/EEC

Special Protection Areas (SPAs) are designated in order to safeguard certain habitats pursuant to EU Directive requirements. The EU Birds Directive (79/409/EEC) requires designation of SPAs for listed rare and vulnerable species, migratory species and wetlands.

No designated special protected areas are located along the Douglas River. There are areas of the River Blackwater which are designated SPAs however these are located downstream of Fermoy and therefore, greater than 2km from the discharge point.

Groundwater Directives 2006/118/EC

The Groundwater Directive 2006/118/EC has been developed in response to the requirements of Article 17 of the Water Framework Directive: Strategies to prevent and control pollution to groundwater. Groundwater Quality standards are to be established by the end of 2008.

Downing Bridge PWS, which supplies Kilwoth village and hinterland is the closest PWS that utilise ground water for medium sized water supplies.

With the proper mitigation measures in place the operation of the wastewater treatment plant does not have any significant negative impacts on the existing groundwater.

Drinking Water Directives 80/778/EEC

There are no areas along the River Douglas, Araglin River or River Blackwater downstream of kilworth WWTP designated for the abstraction of water intended for human consumption.

Urban Waste Water Treatment Directive 91/271/EEC

The Urban Wastewater Treatment Regulations (S.I. 254 of 2001) gives effect to provisions of the Urban Wastewater Treatment Directive (91/271/EEC). The 2001 Irish Regulations cover the various requirements in relation to the collection and treatment of urban wastewater.

Article 4(1)(c) states that "In the case of urban wastewater entering collecting systems, a sanitary authority shall provide treatment plants, which provide for secondary treatment or an equivalent treatment by 31 December 2005 in respect of all discharges to freshwaters and estuaries from agglomerations with a population equivalent of between 2,000 and 10,000."

Kilworth Wastewater Treatment Plant was commissioned in early 2009 and was designed to treat effluent to a 25/35ppm standard.

The Second Schedule (Part 1) of the 2001 Regulations states that effluent should be treated to the following standards.

Table G1-3: Minimum Effluent Standards based on SI 254 of 2001

Parameter	**Conc. (mg/l)**	**Minimum Percentage of Reduction**
Biochemical Oxygen Demand (BOD)	25	70 - 90
Chemical Oxygen Demand (COD)	125	75
Suspended Solids	35	90

The aeration and clarifying plant at the Kilworth wastewater treatment plant is treating effluent to a high standard. Efficiencies of BOD, COD and SS removal for the plant is typically in excess of 85%. The effect of the discharges on the quality of the receiving waters is assessed in Attachment F1.

The Third Schedule of the 2001 Regulations gives a list of Sensitive areas.

Article 4(2)(a) states that all discharges into Sensitive Areas require more stringent treatment than secondary treatment. The River Douglas is not a

designated Sensitive Area. The River Blackwater downstream of Mallow Railway Bridge to Ballyduff Bridge is designated a Sensitive Area. This is not within 2km of any discharge point form the Kilworth wastewater treatment works.

The Fifth Schedule of the 2001 Regulations gives a methodology for monitoring the final effluent from the wastewater treatment plant. Item 3 states "The minimum annual number of samples shall be determined according to the size of the treatment plant and be collected at regular intervals during the year." For a PE of between 2000-9999 4 samples should be taken each year. Cork County Council wastewater laboratory carries out regular testing at the outlet of the treatment plant.

Shellfish Directive 79/923/EEC

The River Douglas is not a designated Shellfish Area under the Shellfish Waters Regulations, S.I. 200 of 1994. The River Blackwater, into which the Araglin River flows (after joining the River Douglas), is also not designated under these regulations.

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Habitats Directive 92/43/EEC

Candidate Special Areas of Conservation (cSACs) are protected under the European Union (EU) Habitats Directive (92/43/EEC), as implemented in Ireland by the European Communities (Natural Habitats) Regulations, 1997.

The Blackwater River cSAC (Site Code: 002170) is very large, extending from the tidal estuary of the river at Youghal Co. Cork to the upper tributaries and their flood plains, in Cos. Cork Kerry, Limerick, Tipperary and Waterford.

The cSAC is designated on the basis of the presence of a large number of EU Habitats Directive Annex 1 habitats and Annex 2 species.

The Blackwater River Site Synopsis is included in this attachment.

Environmental Liabilities Directive 2004/35/EC

The Environmental Liability Directive is about preventing and remedying environmental damage. It aims to hold operators whose activities have caused environmental damage financially liable for remedying this damage, and it aims to hold those whose activities have caused an imminent threat of environmental damage liable for taking preventive actions.

Cork County Council Wastewater Laboratory carries out monitoring of the effluent from the wastewater treatment plant on a regular basis.

Failure to meet the specified treated effluent standards may result in final penalties to Cork County Council. As a result, the risk of environmental pollution from the treatment plant may be reduced.

Bathing Water Directive 76/160/EEC

The River Douglas is not designated a Bathing Water under the Bathing Water Regulations, S.I. 178 of 1998 as amended.

Dangerous Substances Directive 2006/11/EC

The level of dangerous substances in both the effluent discharged from Kilworth wastewater treatment plant and the river itself is significantly lower than the concentration limits set in the directive.

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.

Receiving Water Quality Requirement based on Phosphorus Regulations 2008

The effluent arising from the WWTP is discharge to the River Douglas, which flows adjacent to the WWTP site boundary. The River Douglas is a tributary of the Araglin River, which in turn is a tributary of the Blackwater River (Munster).

The EPA have three number stations on the River Douglas, upstream along the Douglas the Q value of the river is 4-5, while downstream of the River the Q value is 3-4.

Effluent Standards

The treated effluent quality requirements are determined with respect to the EC Urban Wastewater Directive, given effect in Irish Law by S.I.254 of 2001. The wastewater treatment processes should reduce nutrients in the final effluent. The minimum effluent standard based on S.I.254 of 2001 for Phosphorus in wastewater effluent is 2mg/l.

As a natural consequence of secondary treatment, there will be an uptake of phosphorous for biomass synthesis at the wastewater treatment plant in Kilworth This is evident from Tables 3 &4 below showing the uptake of phosphorus through the wastewater treatment plant.

Table G2-3: Phosphorus Levels in Influent to WWTP

Parameter	**Inlet Monitoring Station**

	08/07	**01/09**
Ortho-Phosphate	4.9	5.6

Table G2-4: Phosphorus Levels in Effluent from WWTP

Parameter	**Outlet Monitoring Station**	
	08/07	**01/09**
Ortho-Phosphate	-	4.77

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.

Recently the WWTP was upgraded at a cost of €0.8 M. These projects were upgraded under the Serviced Land Initiative Scheme. No further works are listed to be carried out under the current Water Services Investment Programme 2007 -2009. The PE of the previous WWTP was designed for 800, while the new WWTP is designed for a PE of 2,500.

With these recent improvements to the WWTP it will 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.

Attachment included	**Yes**	**No**
	√	

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.

There are no overflows within the agglomeration other that those from the primary overflow.

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.

Attachment included	**Yes**	**No**
		√

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 :_____ **Date :**_____
(on behalf of the organisation)

Print signature name: _____

Position in organisation:_____

SECTION I: JOINT DECLARATION

Joint Declaration [Note1]

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.

Agglomeration details

Leading Local Authority	Cork County Council
Co-Applicants	
Agglomeration	Kilworth
Population Equivalent	1650
Level of Treatment	Tertiary
Treatment plant address	Knockanohill, Kilworth, Co. Cork
Grid Ref (12 digits, 6E, 6N)	184090 / 102434
EPA Reference No:	

Contact details

Contact Name:	Frank Cronin
Contact Address:	Water Services North, Cork County Council, Anabella, Mallow, Co. Cork
Contact Number:	022-21123
Contact Fax:	022-21983
Contact Email:	Frank.cronin@corkcoco.ie

Table D.1(i)(a): EMISSIONS TO SURFACE/GROUND WATERS (Primary Discharge Point)

Discharge Point Code: SW-1

Local Authority Ref No:	SW01-KILW	
Source of Emission:	Kilworth Wastewater Treatment Plant	
Location:	Knockanohill, Kilworth, Co. Cork	
Grid Ref (12 digits, 6E, 6N)	184362 / 102659	
Name of Receiving waters:	Douglas	
Water Body:	River Water Body	
River Basin District	South Western RBD	
Designation of Receiving Waters:	U/S of Salmoid Water	
Flow Rate in Receiving Waters:	0.12	$m^3.sec^{-1}$ Dry Weather Flow
	0.24	$m^3.sec^{-1}$ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)		

Emission Details:

(i) Volume emitted			
Normal/day	363 m^3	Maximum/day	2173 m^3
Maximum rate/hour	90.75 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.0042 m^3/sec		

Table D.1(i)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of The Emission (Primary Discharge Point)

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
pH	pH	24 hr composite	< 9	
Temperature	°C	24 hr composite	< 30	
Electrical Conductivity (@ 25°C)	µS/cm	24 hr composite	= 1000	
Suspended Solids	mg/l	24 hr composite	= 35	76.05
Ammonia (as N)	mg/l	24 hr composite	= 0	0
Biochemical Oxygen Demand	mg/l	24 hr composite	= 25	54.32
Chemical Oxygen Demand	mg/l	24 hr composite	= 125	271.6
Total Nitrogen (as N)	mg/l	24 hr composite	= 50	108.65
Nitrite (as N)	mg/l	24 hr composite	= 0	0
Nitrate (as N)	mg/l	24 hr composite	= 0	0
Total Phosphorous (as P)	mg/l	24 hr composite	= 2	4.35
OrthoPhosphate (as P)	mg/l	24 hr composite	= 1.7	3.4
Sulphate (SO_4)	mg/l	24 hr composite	= 0	0
Phenols (Sum)	µg/l	24 hr composite	= 0	0

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Table D.1(i)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of The Emission (Primary Discharge Point)

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
Atrazine	µg/l	24 hr composite	= 0	0
Dichloromethane	µg/l	24 hr composite	= 0	0
Simazine	µg/l	24 hr composite	= 0	0
Toluene	µg/l	24 hr composite	= 0	0
Tributyltin	µg/l	24 hr composite	= 0	0
Xylenes	µg/l	24 hr composite	= 0	0
Arsenic	µg/l	24 hr composite	= 0	0
Chromium	µg/l	24 hr composite	= 0	0
Copper	µg/l	24 hr composite	= 0	0
Cyanide	µg/l	24 hr composite	= 0	0
Flouride	µg/l	24 hr composite	= 0	0
Lead	µg/l	24 hr composite	= 0	0
Nickel	µg/l	24 hr composite	= 0	0
Zinc	µg/l	24 hr composite	= 0	0
Boron	µg/l	24 hr composite	= 0	0
Cadmium	µg/l	24 hr composite	= 0	0
Mercury	µg/l	24 hr composite	= 0	0
Selenium	µg/l	24 hr composite	= 0	0
Barium	µg/l	24 hr composite	= 0	0

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

TABLE E.1(i): WASTE WATER FREQUENCY AND QUANTITY OF DISCHARGE – Primary and Secondary Discharge Points

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)
SW-1	365	132495

TABLE E.1(ii): WASTE WATER FREQUENCY AND QUANTITY OF DISCHARGE – Storm Water Overflows

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)	Complies with Definition of Storm Water Overflow

TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	184728 / 102117

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	23/10/08	01/01/09	08/01/09	20/01/09			
pH			= 7.7	= 7.5	Grab	2	Electrochemical
Temperature		= 0			Grab	0	Electrochemical
Electrical Conductivity (@ 25°C)			= 141	= 198	Grab	0.5	Electrochemical
Suspended Solids			= 5	= 3	Grab	0.5	Gravimetric
Ammonia (as N)	= 0.1		= 0.2	= 0.05	Grab	0.02	Colorimetric
Biochemical Oxygen Demand			= 3	< 2	Grab	0.06	Electrochemical
Chemical Oxygen Demand			< 21	= 22	Grab	8	Digestion & Colorimetric
Dissolved Oxygen		= 0			Grab	0	ISE
Hardness (as $CaCO_3$)		= 0			Grab	0	Titrimetric
Total Nitrogen (as N)			= 2.1	= 1.6	Grab	0.5	Digestion & Colorimetric
Nitrite (as N)			= 0.009		Grab	0	Colorimetric
Nitrate (as N)			= 1.53		Grab	0.5	Colorimetric
Total Phosphorous (as P)	< 0.2		< 0.2	= 0.07	Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)	< 0.05		< 0.05	= 0.05	Grab	0.02	Colorimetric
Sulphate (SO_4)	< 30		< 30		Grab	30	Turbidimetric
Phenols (Sum)			< 0.1		Grab	0.1	GC-MS 2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	

TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	184728 / 102117

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	23/10/08	01/01/09	08/01/09	20/01/09			
Atrazine			< 0.01		Grab	0.96	HPLC
Dichloromethane			< 1		Grab	1	GC-MS1
Simazine			< 0.01		Grab	0.01	HPLC
Toluene			< 1		Grab	0.02	GC-MS1
Tributyltin		= 0			Grab	0.02	GC-MS1
Xylenes			< 1		Grab	1	GC-MS1
Arsenic			< 0.96		Grab	0.96	ICP-MS
Chromium	< 20		< 20	< 20	Grab	20	ICP-OES
Copper	< 20		< 20	< 20	Grab	20	ICP-OES
Cyanide			< 5		Grab	5	Colorimetric
Flouride			= 41		Grab	100	ISE
Lead	< 20		< 20	< 20	Grab	20	ICP-OES
Nickel	< 20		< 20	< 20	Grab	20	ICP-OES
Zinc	< 20		< 20	< 20	Grab	20	ICP-OES
Boron	< 20		< 20	< 20	Grab	20	ICP-OES
Cadmium	< 20		< 20	< 20	Grab	20	ICP-OES
Mercury			< 0.2		Grab	0.2	ICP-MS
Selenium			< 0.74		Grab	0.74	ICP-MS
Barium	= 32		= 46	= 26	Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn

TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	183987 / 103428

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	23/10/08	01/01/09	08/01/09	20/01/09			
pH			= 7.4	= 7.5	Grab	2	Electrochemical
Temperature		= 0			Grab	0	Electrochemical
Electrical Conductivity (@ 25°C)			= 124	= 112	Grab	0.5	Electrochemical
Suspended Solids			< 2.5	= 1	Grab	0.5	Gravimetric
Ammonia (as N)	< 0.1		< 0.1	< 0.05	Grab	0.02	Colorimetric
Biochemical Oxygen Demand			= 2	< 2	Grab	0.06	Electrochemical
Chemical Oxygen Demand			< 21	= 24	Grab	8	Digestion & Colorimetric
Dissolved Oxygen		= 0			Grab	0	ISE
Hardness (as $CaCO_3$)		= 0			Grab	0	Titrimetric
Total Nitrogen (as N)			= 1.5	= 1.4	Grab	0.5	Digestion & Colorimetric
Nitrite (as N)			< 0.004		Grab	0	Colorimetric
Nitrate (as N)			= 1.24		Grab	0.5	Colorimetric
Total Phosphorous (as P)	< 0.2		< 0.2	= 0.05	Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)	< 0.05		< 0.05	< 0.05	Grab	0.02	Colorimetric
Sulphate (SO_4)	< 30		< 30		Grab	30	Turbidimetric
Phenols (Sum)			< 0.1		Grab	0.1	GC-MS 2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	

TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	183987 / 103428

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	23/10/08	01/01/09	08/01/09	20/01/09			
Atrazine			< 0.01		Grab	0.96	HPLC
Dichloromethane			< 1		Grab	1	GC-MS1
Simazine			< 0.01		Grab	0.01	HPLC
Toluene			< 1		Grab	0.02	GC-MS1
Tributyltin		= 0			Grab	0.02	GC-MS1
Xylenes			< 1		Grab	1	GC-MS1
Arsenic			< 0.96		Grab	0.96	ICP-MS
Chromium	< 20		< 20	< 20	Grab	20	ICP-OES
Copper	< 20		< 20	< 20	Grab	20	ICP-OES
Cyanide			< 5		Grab	5	Colormetric
Flouride			= 35		Grab	100	ISE
Lead	< 20		< 20	< 20	Grab	20	ICP-OES
Nickel	< 20		< 20	< 20	Grab	20	ICP-OES
Zinc	< 20		< 20	< 20	Grab	20	ICP-OES
Boron	< 20		< 20	< 20	Grab	20	ICP-OES
Cadmium	< 20		< 20	< 20	Grab	20	ICP-OES
Mercury			< 0.2		Grab	0.2	ICP-MS
Selenium			= 0.9		Grab	0.74	ICP-MS
Barium	= 21		= 58	= 24	Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn

Annex 2: Check List For Regulation 16 Compliance

Regulation 16 of the waste water discharge (Authorisation) Regulations 2007 (S.I. No. 684 of 2007) sets out the information which must, in all cases, accompany a discharge licence application. In order to ensure that the application fully complies with the legal requirements of regulation 16 of the 2007 Regulations, all applicants should complete the following.

In each case, refer to the attachment number(s), of your application which contains(s) the information requested in the appropiate sub-article.

Regulation 16(1) **In the case of an application for a waste water discharge licence, the application shall -**		**Attachment Number**	**Checked by Applicant**
(a)	give the name, address, telefax number (if any) and telephone number of the applicant (and, if different, of the operator of any treatment plant concerned) and the address to which correspondence relating to the application should be sent and, if the operator is a body corporate, the address of its registered office or principal office,	B.1	Yes
(b)	give the name of the water services authority in whose functional area the relevant waste water discharge takes place or is to take place, if different from that of the applicant,	Not Applicable	Yes
(c)	give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the waste water treatment plant and/or the waste water discharge point or points to which the application relates,	B.2	Yes
(d)	state the population equivalent of the agglomeration to which the application relates,	B.9	Yes
(e)	specify the content and extent of the waste water discharge, the level of treatment provided, if any, and the flow and type of discharge,	C,D	Yes
(f)	give details of the receiving water body, including its protected area status, if any, and details of any sensitive areas or protected areas or both in the vicinity of the discharge point or points likely to be affected by the discharge concerned, and for discharges to ground provide details of groundwater protection schemes in place for the receiving water body and all associated hydrogeological and geological assessments related to the receiving water environment in the vicinity of the discharge.	F.1	Yes
(g)	identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and, if Regulation 17 does not apply, provide details of the likely environmental consequences of any such discharges,	E.3	Yes
(h)	in the case of an existing waste water treatment plant, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application,	E.4	Yes
(i)	describe the existing or proposed measures, including emergency procedures, to prevent unintended waste water discharges and to minimise the impact on the environment of any such discharges,	G.3	Yes
(j)	give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points,	Not Applicable	Yes
(k)	give details, and an assessment of the effects, of any existing or proposed emissions on the environment, including any environmental medium other than those into which the emissions are, or are to be made, and of proposed measures to prevent or eliminate or, where that is not practicable, to limit any pollution caused in such discharges,	F.1	Yes
(l)	give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,	E1, E.4	Yes
(m)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.	G.1	Yes
(n)	Any other information as may be stipulated by the Agency.	Not Applicable	Yes
Regulation 16(3) **Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by -**		**Attachment Number**	**Checked by Applicant**
(a)	a copy of the notice of intention to make an application given pursuant to Regulation 9,	B.8	Yes
(b)	where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13,	Not Applicable	Yes
(c)	Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate -	B	Yes
(c) (i)	the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and	B3	Yes
(c) (ii)	the point or points at which monitoring and sampling are undertaken or are to be undertaken,	E.3	Yes
(d)	such fee as is appropriate having regard to the provisions of Regulations 38 and 39.	E.9 (iii)	Yes

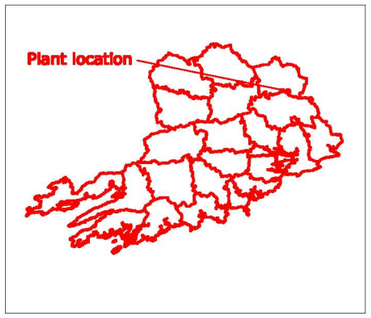
Regulation 16(4) An original application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under Regulation 16(3) in hardcopy or in an electronic or other format as specified by the Agency.		Attachment Number	Checked by Applicant
1	An Original Application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under regulation 16(3) in hardcopy or in electronic or other format as specified by the agancy.		Yes
Regulation 16(5) **For the purpose of paragraph (4), all or part of the 2 copies of the said application and associated documents and particulars may, with the agreement of the Agency, be submitted in an electronic or other format specified by the Agency.**		**Attachment Number**	**Checked by Applicant**
1	Signed original.		Yes
2	2 hardcopies of application provided or 2 CD versions of application (PDF files) provided.		Yes
3	1 CD of geo-referenced digital files provided.		Yes
Regulation 17 **Where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency**		**Attachment Number**	**Checked by Applicant**
1	EIA provided if applicable	Not Applicable	Yes
2	2 hardcopies of EIS provided if applicable.	Not Applicable	Yes
3	2 CD versions of EIS, as PDF files, provided.	Not Applicable	Yes

ANNEX 1: TABLES / ATTACHMENT

Attachment	Description
A1 Map 1	1:50,000 Location Map
A1 Map 2	Site Location of WWTP
A1 Map 3	Wastewater Treatment Plant – Site Layout
B1 Map 4	Agglomeration
B2 Map 5	Layout of Waste Water Treatment Plant
B3 Map 6	Location of Primary Discharge Point SW01 KILW
B3 Map 7	Location of Sampling Points
B4	Not Applicable
B5	Not Applicable
B6	Part VIII Planning
B7	Not Applicable
B8 Map 8	Location of Site Notice
B8	Notice & Advertisement
B10	WSIP Programme
B 11	Not Applicable
B 12	Not Applicable
C1 Map 9	Layout Wastewater Treatment Plant
C1 Drg 1	Schematic of Wastewater Treatment Plant
C2	Not Applicable
D1	Influent Results
Section D2	Discharge Points
E2	
Section E3	Monitoring & Sampling Points
E4	
F1	Flow Survey Laboratory Test Results SAC Blackwater River Site Synopsis
F2	Not Applicable
G1	SAC Blackwater River Site Synopsis WSIP Programme
G2	WSIP Programme Laboratory Test Results
G3	WSIP Programme
G4	Not Applicable

NOTES

1. Dimensions are not to be scaled from drawing. For any discrepancies found consult with the design office.
2. This drawing is to be read in conjunction with the Specification.
3. This drawing is to be read in conjunction with all other contract drawings.



Key Map

No.	Date	Dwn	Surv	Chkd	Revision Description

Cork County Council,
Northern Division.

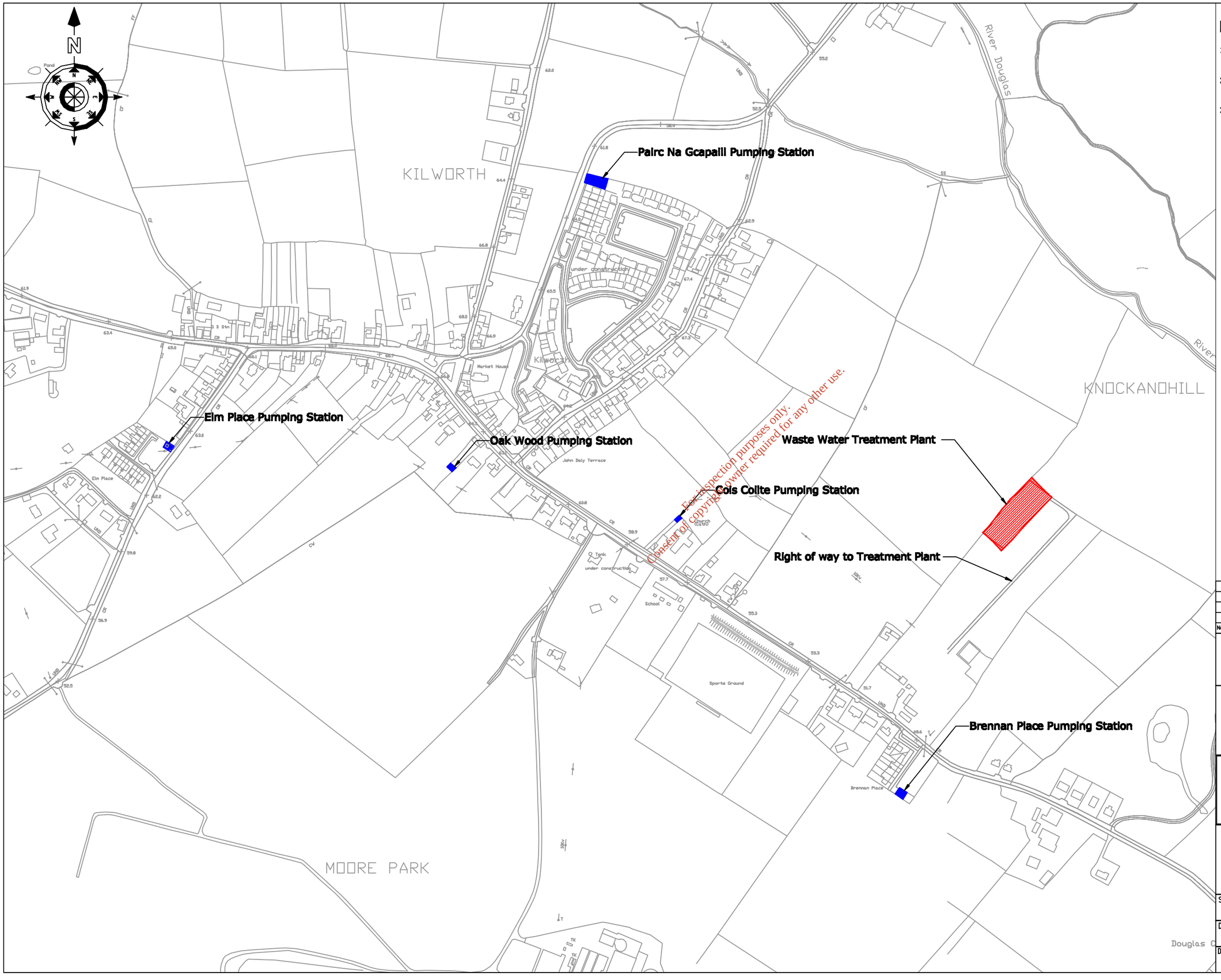
N. O'KEEFFE, B.E.,
COUNTY ENGINEER,
COUNTY HALL,
CORK.

Job Title: **Kilworth & Environs Waste Water Discharge Licence Application**

Drawing Title:

Location Map
Scale - 1:50,000
Attachment A1 - Map 1

Scales:	Surveyed by:	Drawn by:
1:50,000 @ A3	D.L.	D.L.
Designed by:	**Checked by:**	**Date:**
F.J.	F.C.	August 2008
Drawing number:		**Rev.**
A1 - Map 1		-



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No.	Date	Drwn	Surv	Chkd	Revision Description

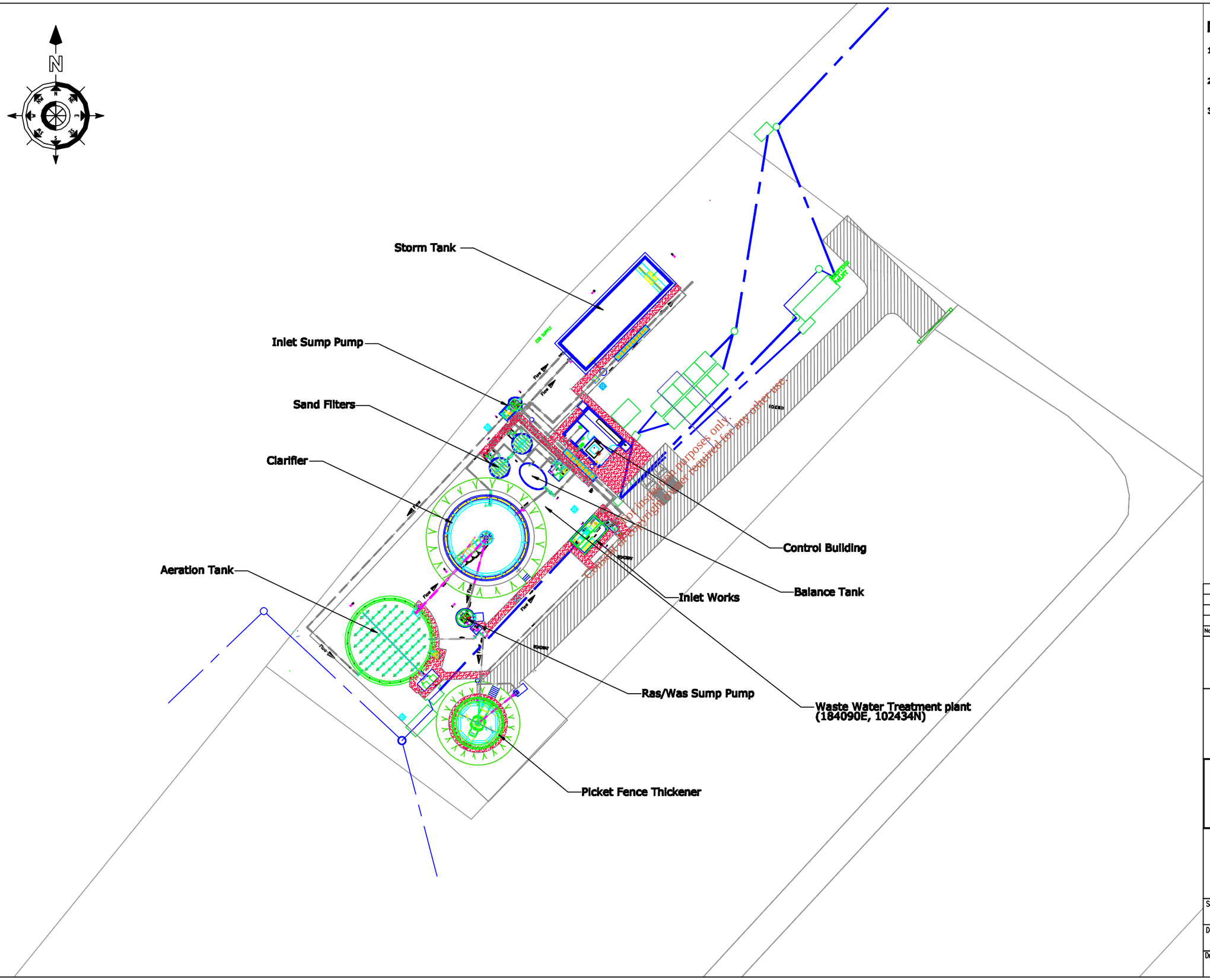
Cork County Council,
Northern Division.

N. O'KEEFFE, B.E.,
COUNTY ENGINEER,
COUNTY HALL,
CORK.

Job Title:
Kilworth & Environs
Waste Water Discharge
Licence Application

Drawing Title:
Site Locations of W.W.T.P.
& Pumping Stations
Attachment A1 - Map 2

Scales:	Surveyed by:	Drawn by:
1:5000 @ A3	D.L.	D.L.
Designed by:	**Checked by:**	**Date:**
F.J.	F.C.	August 2006
Drawing number:		**Rev:**
A1-Map 2		-



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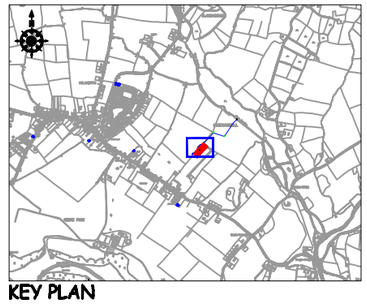


KEY PLAN

No.	Date	Drwn	Surv	Chkd	Revision Description

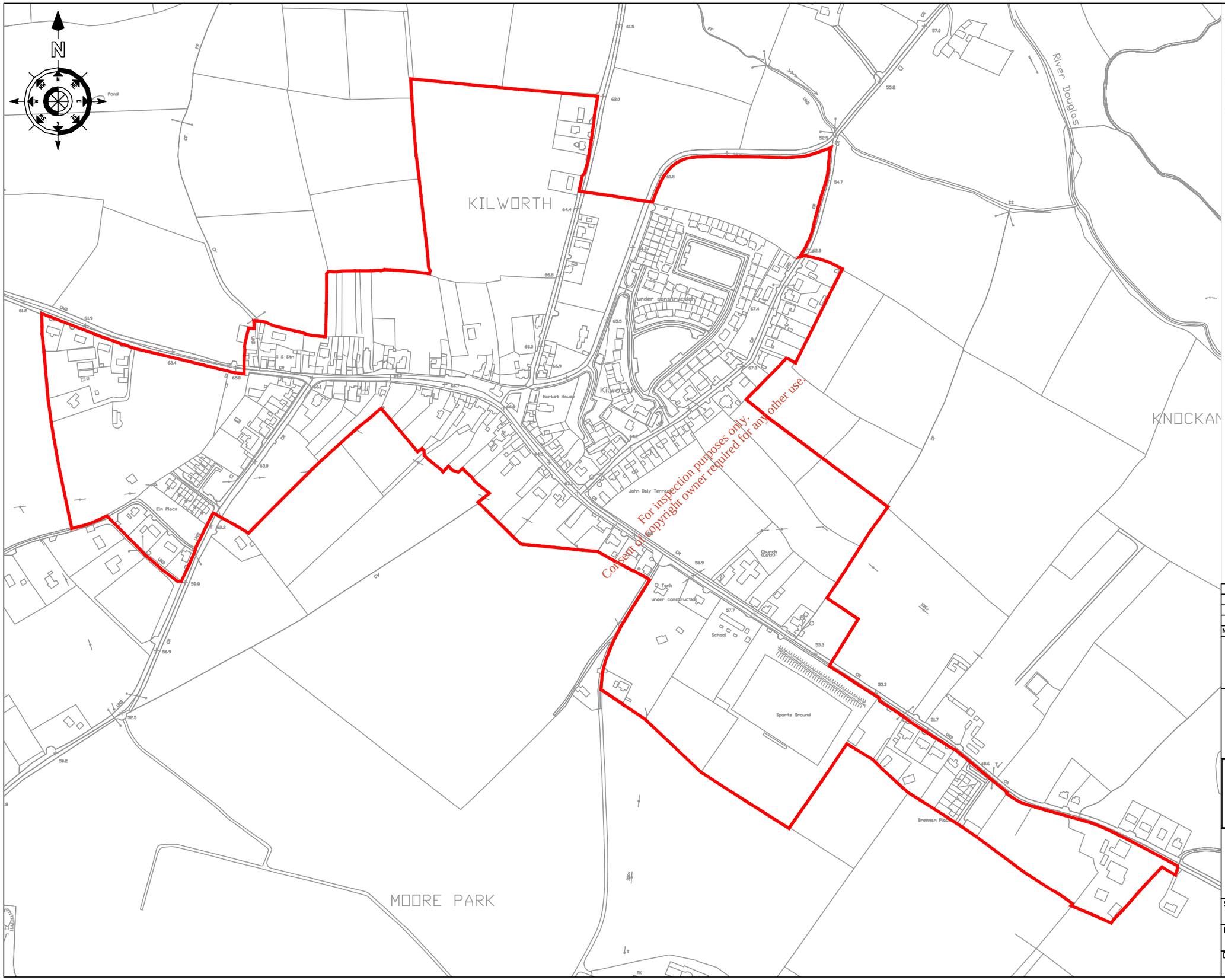
Cork County Council,
Northern Division.

N. O'KEEFFE, B.E.,
COUNTY ENGINEER,
COUNTY HALL,
CORK.

Job Title:
Kilworth & Environs
Waste Water Discharge
Licence Application

Drawing Title:
Waste Water Treatment Plant
Site Layout
Attachment A1 - Map 3

Scales:	Surveyed by:	Drawn by:
1:500 @ A3	D.L.	D.L.
Designed by:	**Checked by:**	**Date:**
F.J.	F.C.	August 2008
Drawing number:		**Rev:**
A1 - Map 3		-



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No.	Date	Drwn	Surv	Chkd	Revision Description

Cork County Council,
Northern Division.

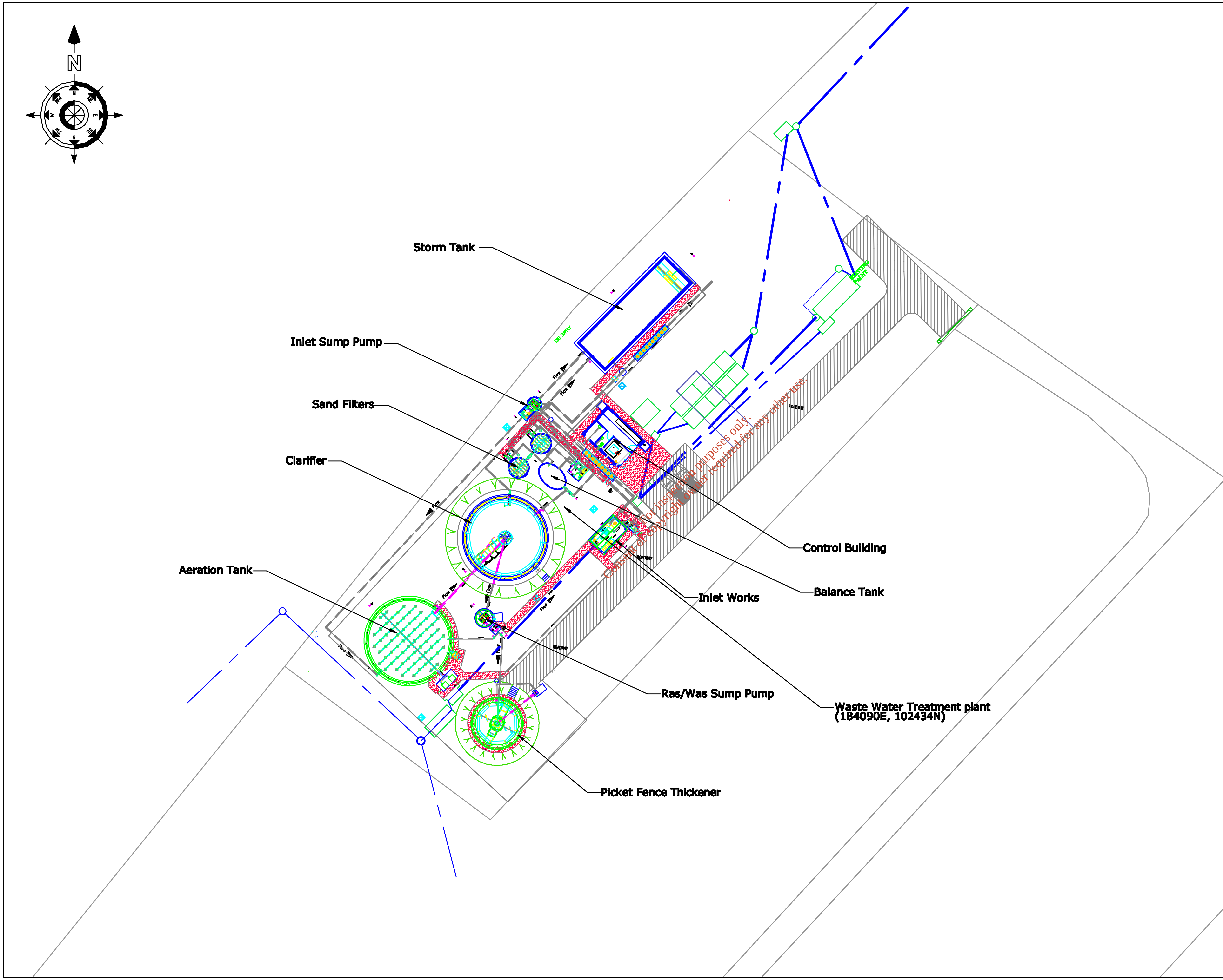
N. O'KEEFFE, B.E.,
COUNTY ENGINEER,
COUNTY HALL,
CORK.

Job Title: **Kilworth & Environs Waste Water Discharge Licence Application**

Drawing Title:

Agglomeration Boundary Attachment B1 - Map 4

Scales:	Surveyed by:	Drawn by:
1:5000 @ A3	D.L.	D.L.
Designed by:	**Checked by:**	**Date:**
F.J.	F.C.	August 2008
Drawing number:		**Rev:**
B1 - Map 4		-



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KEY PLAN

No.	Date	Drwn	Surv	Chkd	Revision Description

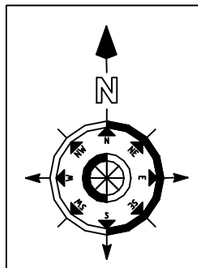
Cork County Council,
Northern Division.

N. O'KEEFFE, B.E.,
COUNTY ENGINEER,
COUNTY HALL,
CORK.

Job Title:
Kilworth & Environs Waste Water Discharge Licence Application

Drawing Title:
Layout of Waste Water Treatment Plant Attachment B2 - Map 5

Scales: 1:500 @ A3	Surveyed by: D.L.	Drawn by: D.L.
Designed by: F.J.	Checked by: F.C.	Date: August 2008
Drawing number: B2 - Map 5		Rev: -



KNOCKANOHILL

River Douglas

Primary Discharge point
SW-01 Kilworth
(184362E, 102659N)

NOTES

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3. This drawing is to be read in conjunction with all other contract drawings.

No.	Date	Drwn	Surv	Chkd	Revision Description

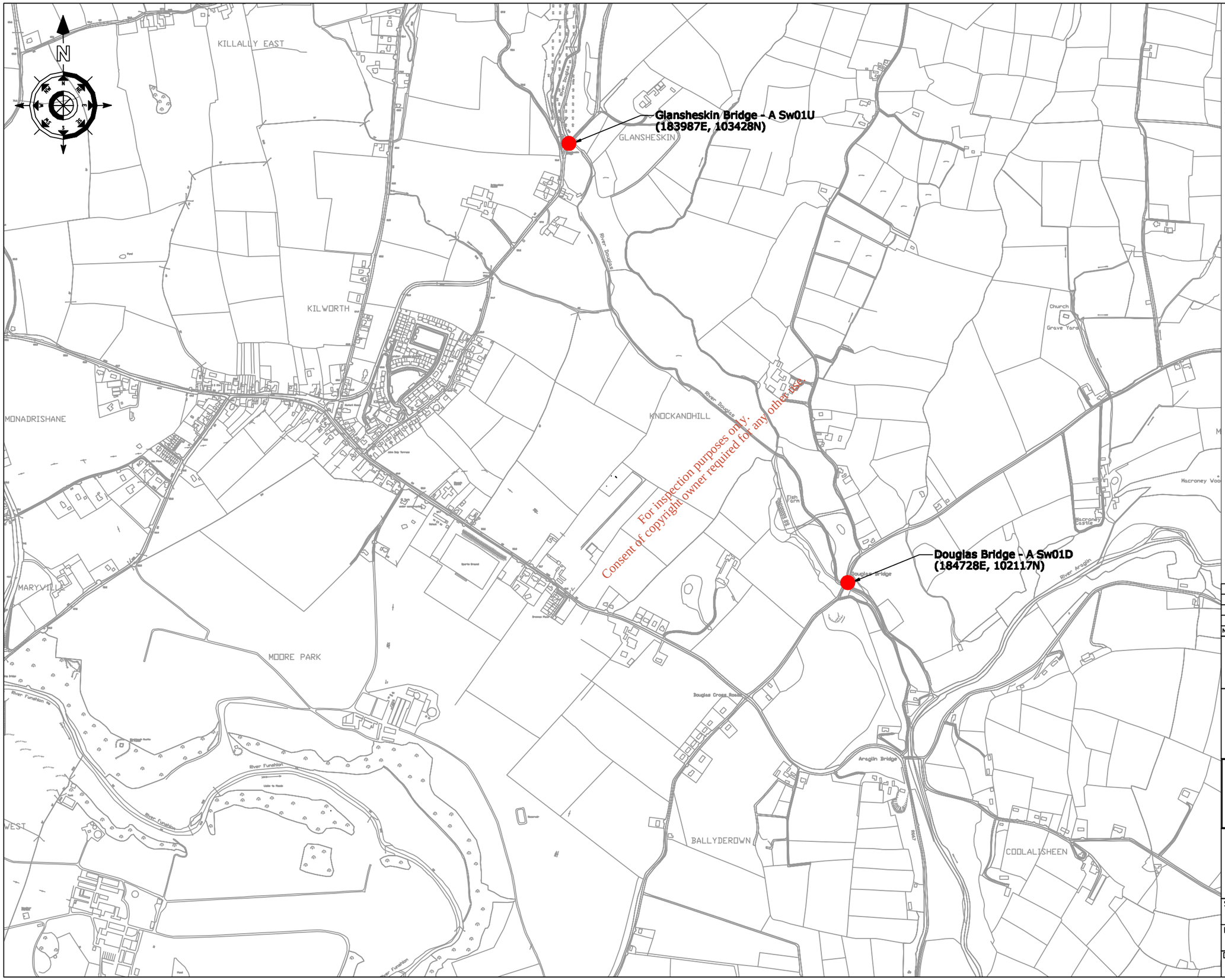
Cork County Council,
Northern Division.

N. O'KEEFFE, B.E.,
COUNTY ENGINEER,
COUNTY HALL,
CORK.

Job Title: **Kilworth & Environs Waste Water Discharge Licence Application**

Drawing Title:
Location of Primary Discharge Point SW01 - Kilworth Attachment B3 - Map 6

Scales:	Surveyed by:	Drawn by:
1:1000 @ A3	D.L.	D.L.
Designed by:	**Checked by:**	**Date:**
F.J.	F.C.	August 2008
Drawing number:		**Rev:**
B3 - Map 6		-



NOTES

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3. This drawing is to be read in conjunction with all other contract drawings.

No.	Date	Drwn	Surv	Chkd	Revision Description

Cork County Council,
Northern Division.

N. O'KEEFFE, B.E.,
COUNTY ENGINEER,
COUNTY HALL,
CORK.

Job Title: **Kilworth & Environs Waste Water Discharge Licence Application**

Drawing Title:

Locations of sampling points Attachment B3 - Map 7

Scales:	Surveyed by:	Drawn by:
1:10,000 @ A3	D.L.	D.L.
Designed by:	**Checked by:**	**Date:**
F.J.	F.C.	December 2008
Drawing number:		**Rev:**
B3 - Map 7		-

Comhairle Contae Chorcaí
Cork County Council

County Hall,
Cork, Ireland.
Tel: (021) 4276891 • Fax: (021) 4276321
Web: www.corkcoco.ie
Halla an Chontae,
Corcaigh, Éire.
Fón: (021) 4276891 • Faics: (021) 4276321
Suíomh Gréasáin: www.corkcoco.ie

Ms. Bernie O'Leary,
Cork County Council,
Annabella,
Mallow,
Co. Cork.

Direct Dial: 021-4285457
Email: helen.bowman@corkcoco.ie

24th July, 2007.

Re: Report under Article 179(3)(b) of the Planning & Development Act, 2000
Report under Article 81 of the Planning & Development Regulations 2001

(a). Construction of new Wastewater Treatment Plant at Ballynoe, Fermoy.
(b). New cemetery at Lismire, Newmarket.
(c). Construction of new 1000 cubic m reservoir at Gortnagraige, Mallow
(d). Provision of new 50,000 gallon reservoir at Lyraneag, Rockchapel
(e). Mallow/Ballyviniter RWSS - Box Cross - Phase 1 - new pumping station and new production borehole stations.
(f). Construction of Wastewater Treatment Plant at Knockanohill, Kilworth.

I refer to your email dated 16th July, 2007, in connection with the above.

At the meeting of Cork County Council held on 23rd July, 2007 the recommendations of the Northern Committee were approved.

MAURICE MANNING,
SENIOR EXECUTIVE OFFICER.

Recycled

CORK COUNTY COUNCIL (NORTH)

LOCAL GOVERNMENT PLANNING AND DEVELOPMENT ACT 2000 & PART 8, ARTICLE 81 OF THE PLANNING & DEVELOPMENT REGULATIONS 2001 (AS AMENDED BY ARTICLE 17 OF THE PLANNING & DEVELOPMENT REGULATIONS 2006) AND ARTICLE 83 OF THE PLANNING & DEVELOPMENT REGULATIONS 2001 (AS AMENDED BY ARTICLE 19 OF THE PLANNING & DEVELOPMENT REGULATIONS 2006.)

DEVELOPMENT: *Construction of wastewater treatment plant with associated site works*

LOCATION: *Knockanohill, Kilworth, Fermoy, Co. Cork.*

NATURE/EXTENT/PRINCIPLE FEATURES OF PROPOSED DEVELOPMENT:

Construction of a Wastewater Treatment Plant incorporating Inlet Works, Detention Tank(s), Secondary Treatment Works, Sludge Holding Tank(s), Outlet Works, Control Building, Site Road and Footpaths, Site Fencing and other associated site works.

The proposed Wastewater Treatment Plant will be constructed within the existing Wastewater Treatment Plan site which is located approximately 900m east of Kilworth village centre in the townland of Knockanohill.

PERSONS OR BODIES WHO MADE SUBMISSIONS OR OBSERVATIONS:

None

LIKELY IMPLICATIONS WITH RESPECT TO THE PROPER PLANNING AND DEVELOPMENT OF THE AREA:

None (See Report of Bob Gunkel, Senior Planner attached)

IT IS PROPOSED:

To proceed with the above development

This report is submitted to the members of Cork County Council in the course of compliance with Section 2 (7) of the City and County Management (Amendment) Act, 1995.

SIGNED: _____
A/Senior Engineer – Water Services

DATE: 16/07/2007

Comhairle Contae Chorcaí
Cork County Council

Annabella,
Mallow,
Co. Cork.
Tel: (022) 21123 • Fax: (022)21983
Email: northcork@corkcoco.ie
Web: www.corkcoco.ie
Annabella,
Mala,
Co. Chorcaí.
Fón: (022) 21123 • Faics: (022) 21983
R-phost: northcork@corkcoco.ie
Suíomh Gréasáin: www.corkcoco.ie

Billy O'Sullivan BE
Senior Executive Engineer
Water Services
Cork County Council
Annabella
Co. Cork.

13 July 2007

RE: Part 8 application for proposed Wastewater Treatment Plant with associated works at Knockanohill, Kilworth, Fermoy, Co. Cork.

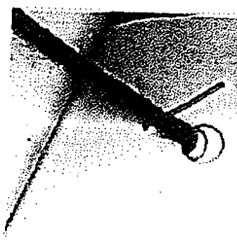
Cork County Council is proposing to replace the existing wastewater treatment plant which is presently operating at full capacity. This issue is referred to in paragraph 8.2.7 of the Kilworth plan in the Fermoy Local Area Plan 2005 which states: *"Kilworth is currently experiencing some infrastructure difficulties. The sewage treatment plant is close to capacity"*.

Added to this is the recent boom in housing development, resulting in the construction of nearly 80 dwellings over the last five years with more under construction.

This is to certify that the proposal for a new wastewater treatment plant at Knockanohill, Kilworth is in accordance with the provisions off the 2003 County Development Plan and the 2005 Fermoy Area Local Area Plan and is in compliance with the proper planning and sustainable development of the area.

Bob Gunkel
Senior Planner

Recycled



Contact Marie on 021 4223722.

Legal Notices

Two Examiners

18/05/07

THE HIGH COURT
Record No. 3066 544 COS
In the Matter of
CASTLEMAHON FOOD PRODUCTS
(In Liquidation)
And in the Matter of
THE COMPANIES ACTS, 1963 to 2006
ADVERTISEMENT FOR CREDITORS

The creditors of the above company are required, on or before the 24th day of November 2007 to send their names and addresses and the particulars of their debts or claims and the names and addresses of their solicitors, if any, to Kieran Wallace, the Official Liquidator of the said company at KPMG, 1 Stoke's Place, St Stephen's Green, Dublin 2 and if so required by notice in writing from the Official Liquidator, are to file such affidavits in proof of claims as they may be advised and to give notice of filing thereof to the said Official Liquidator, and to attend at such time and place as shall be specified in such notice or, in default thereof, they will be excluded from any distribution made before such debts or claims are proved.

The 6th day of December 2007, at 11 o'clock in the forenoon at the Examiner's Office, Second Floor, Courts Service Building, 15-24 Phoenix Street North, Smithfield, Dublin 7 has been appointed for hearing and adjudicating upon the said debts and claims.

Dated May 9, 2007.

B O'SULLIVAN
Assistant Examiner

AN CHURT DUICHE
(THE DISTRICT COURT)
District Court Area of Millstreet
District Court Number 18
AUCTIONEERS AND HOUSE AGENTS ACTS, 1947/1967
CATHERINE POMEROY MURPHY
- Applicant

Take notice that on Thursday, June 21, 2007, an application will be made to the judge sitting at Millstreet District Court for a renewal of a Certificate of Qualification to hold an Auctioneer's Licence on behalf of the above named Applicant, whose principal place of business is at West End, Millstreet in the County of Cork.

Dated May 17, 2007.

MAURICE LENEHAN & CO.
Solicitors

West End, Millstreet, Co. Cork.

To: The District Court Clerk,
Courthouse,
Mallow, Co. Cork

And: The Superintendent,
Garda Siochana,
Kanturk, Co. Cork.

Cork County Council proposes to undertake the following development:

Location	Nature and Extent of Development
Community Park, Douglas, Co. Cork.	Development of a new playground and associated paving, drainage and lighting works.

Plans and particulars of the proposed development will be available for inspection at Floor 4, Recreation, Amenity, Planning and Development South Cork - Hinterland, County Hall, Cork and the Area Engineer's Office, Curren Road, Carrigaline, Co. Cork, from 9.00am to 5.00pm on each day during which said offices are open for the transaction of business, for a period beginning on Friday, the 18th of May 2007 and ending on Friday, the 29th of June 2007.

Submissions and observations with regard to the proposed development, dealing with the proper planning and sustainable development of the area in which the development is located, should be made in writing to the **Senior Engineer, Recreation, Amenity, Planning and Development, South Cork - Hinterland, Floor 4, County Hall, Cork.** on or before Friday, the 13th of July 2007.

(NORTH)

NOTICE UNDER SECTION 179 OF THE PLANNING & DEVELOPMENT ACT 2000 AND PART 8, ARTICLE 81 AND ARTICLE 83 OF THE PLANNING & DEVELOPMENT REGULATIONS 2001 (AS AMENDED BY ARTICLES 17 AND 19 OF THE PLANNING & DEVELOPMENT REGULATIONS 2006)

Pursuant to the requirements of Part 8 of the Planning & Development Regulations 2001 (as amended by Articles 17 and 19 of the Planning and Development Regulations 2006), Notice is hereby given that Cork County Council (North) proposes to carry out the following development:

Construction of a Wastewater Treatment Plant incorporating Inlet Works, Detention Tank(s), Secondary Treatment Works, Sludge Holding Tank(s), Outlet Works, Control Building, Site Road and Footpaths, Site Fencing and other associated site works at Knockanohill, Kilworth, Fermoy, Co. Cork.

The proposed Wastewater Treatment Plant will be constructed within the existing Wastewater Treatment Plant site which is located approximately 900m east of Kilworth Village centre in the townland of Knockanohill.

Plans and particulars of the proposed development will be available for inspection or purchase at the Water Services Department, Council Offices, Annabella, Mallow, Co. Cork from 9.00am to 5.00pm and at the Council Offices, The Courthouse, Mitchelstown, Co. Cork from 9.00am to 1.00pm and 2.00pm to 5.00pm on each day during which said offices are open for the transaction of business (excluding Bank Holidays) for a period ending 29th June 2007.

Submissions or observations with regard to the proposed development, dealing with the proper planning and development of the area in which the development would be situated, may be made in writing to the Senior Engineer, Water Services Department, Cork County Council (North), Annabella, Mallow, Co. Cork not later than 5.00pm, on Friday, 13th July, 2007

Director of Services, Northern Division.

June 2007.

L3606 Woodstock Road,

Alternative Route

From Carrigtwohill via Cor roads Dungold Village R626.

The purpose of the Tempora line painting.

Director of Services, Floo

TEMPORARY CLOSURE

Notice is hereby given that road will be closed to public 29th June 2007:

LP3633 Cloyne to Church to the three cross roads ir

Alternative Route

From the three cross roads roads Tullagh South Townla Village.

The purpose of the Tempor

Director of Services, Floo

TEMPORARY CLOSURE

Notice is hereby given th 75 of the Roads Act 1993, th 8.00am Monday, 4th June 2

R606 The Marsh, Capp

Alternative Route

From Innishannon Re to R600 at Pewther C. Deacon Duggan Bridge).

To Innishannon: Via Banc Kinsale to Pewther Hole (Ballythomas Cross Roads.

The purpose of the propo

Any person interested ma 3 working days from the d

Director of Services, F

Legal Notices

In the Matter of
THE COMPANIES ACTS
1963 - 2006
And in the Matter of
IMC MEASUREMENT AND CONTROL LTD
(In Voluntary Liquidation)

NOTICE OF FINAL MEETING

Notice is hereby given, pursuant to Section 265, 275 and 305 of the Companies Act, 1963, that the final Meeting of Members and of Creditors' of the above named Company, will be held at 49 South Mall, Cork on Thursday, June 21, at 11am and 11.30am respectively for the purpose of having an account laid out before them showing the manner in which the winding-up has been conducted and the property of the company disposed of and of hearing any explanations that may be given by the Liquidator and determining the manner in which the books, accounts and other documents of the company and of the Liquidator thereof shall be disposed of.

Dated this May 18, 2007.

SEAN FLYNN, FCPA, ATII
Liquidator

11 Barnstead Drive,
Church Road,
Blackrock, Cork.

Legal Notices

NOTICE OF APPLICATION TO BE DISSOLVED FROM THE REGISTER OF COMPANIES

Lilmar Securities Limited, having its registered office at Lilmar, 25 Rosebank, South Douglas Road, Cork, having ceased to trade and having no assets or liabilities, has resolved to notify the Registrar of Companies, that the Company is not carrying on business and to request the Registrar on that basis to exercise his powers pursuant to Section 311 of the Companies Act 1963 to strike the name of the Company off the register.

Dated this 16th day of May 2007

BY ORDER OF THE BOARD

TIMOTHY GERARD LOWNEY
Director

Marine Engineering Enterprise Ltd., having its registered office at Carstown, Termonfeckin, Co. Louth, having ceased to trade and having no assets or liabilities has resolved to notify the Registrar of Companies that the Company is not carrying on business and to request the Registrar on that basis to exercise his powers pursuant to Section 311 of the Companies Act, 1963, to strike the name of the company off the Register.

BY ORDER OF THE BOARD
GERARD McEVOY
Director

Public Notices

Public Notic

COMHAIRLE CATHRACH CHORC
CORK CITY COUNCIL

VARIOUS URBAN RENEWAL AND ROADWORKS PROJECTS 2007-2009
CORK CITY COUNCIL
ROADS DESIGN OFFICE

Invitation to Contractors for Expression of Int May 2007

Cork City Council invites Expressions of Interest from suitably qualified and experienced Contractors in relation to various urban renewal and roadwork proje throughout Cork City during the period 2007-2009.

The projects will typically consist of installation of ser ducting and pipe laying, construction of pavement, s construction, public lighting, erection of street furnitu other associated activities. Full details are available c www.etenders.gov.ie website.

The Pre-Qualification Questionnaire may be obtaine from:

John Stapleton
Senior Executive Engineer
Roads Design
Room 331 City Hall
Cork City

Email: John_stapleton@corkcity.ie

The closing date for submission of Questionnair 12 noon on Friday 1st of June 2007.

CORK COUNTY COUNCIL

COMHAIRLE CONTAE CHORCAÍ

TENDERS

Full details on www.etenders.gov.ie
Northern Division invites tenders from Contractors for the following:

- Construction of 9 No. Houses at Ballynae
- Development of 19 No. Serviced Sites at Millstreet.

Closing date for receipt of tenders is Friday, 15th June 2007 at 4.00pm.

Water Services, South Cork Rural invites tenders from suitably qualified civil engineering contractors for Kinsale Main Drainage Stage 2 Collection System Contract. Closing date 9th July 2007 at 4.00pm.

PUBLIC NOTICE

NOTICE IS HEREBY GIVEN, pursuant to the provision of Section 11 (1) of the Roads Act, 1993, that Cork County Council, at a meeting to be held on 9th July, 2007, in County Hall, Cork, will consider and if so decide, adopt a resolution declaring the undermentioned roads to be public roads:

- Road at The Green, Whitechurch, linear length 390 metres
- Road at Richmond, Glanmire, linear length 174 metres
- Road at Kilmorna Heights, Glanmire, linear length 120 metres
- Road at Ardagh Heights, Glanmire, linear length 500 metres
- Road at City View/Ashford Heights, Glanmire, linear length 470 metres
- Road at Ard Dara, Blarney, linear length 720.681 metres
- Road at The Heights, Rathpeacon, Killeens, Co. Cork, linear length 170.5 metres

Maps indicating these roads are available for inspection during normal office hours, at the – Roads Department, Level 5, County Hall. Objections and representations in regard to proposal to declare the above roads to be public roads will be received in writing at the Corporate Affairs Department, Floor 14, County Hall, Cork, on or before Monday, 2nd July, 2007. Objections and representations received will be considered by the Council.

SENIOR EXECUTIVE OFFICER

PLANNING

Part 8 Planning Notice
Notice under Article 81 of the Planning & Development Regulations 2001 and 2006

Cork County Council, in conjunction with Fermoy Town Council, propose to undertake the following development works:

Town Enhancement Works for Fermoy Town: McDonagh Hill, O'Connell Place and McCurtain Street (to junction with Abbey Street).

The proposed works include:

- New kerbing and footpaths/cycleways
- New road signs and road markings
- New public lighting and undergrounding of overhead services as required
- New road pavement and surface water drainage
- New and upgraded signalised pedestrian crossings locations
- Other necessary associated works.

Plans and Particulars of the proposal will be available for inspection at:

- Fermoy Town Council, Town Engineer's Office, Courthouse Road, Fermoy, Co. Cork
- Cork County Council, Floor 5, County Hall, Carrigrohane Road, Cork
- Cork National Roads Office, Richmond, Glanmire, Co. Cork

on working days from Friday, 18th May 2007 to Friday, 29th June 2007 from 9am to 5pm.

Plans and Particulars of the proposal will also be available for purchase at:

- Cork National Roads Office, Richmond, Glanmire, Co. Cork

on working days from Friday, 18th May 2007 to Friday, 29th June 2007 from 9am to 5pm.

Submissions and observations with respect to the proposed development, dealing with the proper and sustainable development of the area in which the development would be situated, may be made in writing to:

Head of Corporate Affairs, Cork National Roads Office, Richmond, Glanmire, Co. Cork
Or
Town Engineer, Fermoy Town Council, Courthouse Road, Fermoy, Co. Cork

before 4.00pm on Friday, 13th July 2007.

(South Cork - Hinterland)

NOTICE UNDER SECTION 179 OF THE PLANNING & DEVELOPMENT ACT 2000 AND PART 8, ARTICLE 81 AND ARTICLE 83 OF THE PLANNING & DEVELOPMENT REGULATIONS 2001 (AS AMENDED BY ARTICLES 17 AND 19 OF THE PLANNING & DEVELOPMENT REGULATIONS 2006)

Cork County Council proposes to undertake the following development:

Location	Nature and Extent of Development
Community Park, Douglas, Co. Cork.	Development of a new playground and associated paving, drainage and lighting works.

Plans and particulars of the proposed development will be available for inspection at Floor 4, Recreation, Amenity, Planning and Development South Cork - Hinterland, County Hall, Cork and the Area Engineer's Office, Church Road, Carrigaline, Co. Cork, from 9.00am to 5.00pm on each day during which said offices are open for the transaction of business, for a period beginning on Friday, the 18th of May 2007 and ending on Friday, the 29th of June 2007.

Submissions and observations with regard to the proposed development, dealing with the proper planning and sustainable development of the area in which the development is located, should be made in writing to the Senior Engineer, Recreation, Amenity, Planning and Development, South Cork - Hinterland, Floor 4, County Hall, Cork, on or before Friday, the 13th of July 2007.

(NORTH)

NOTICE UNDER SECTION 179 OF THE PLANNING & DEVELOPMENT ACT 2000 AND PART 8, ARTICLE 81 AND ARTICLE 83 OF THE PLANNING & DEVELOPMENT REGULATIONS 2001 (AS AMENDED BY ARTICLES 17 AND 19 OF THE PLANNING & DEVELOPMENT REGULATIONS 2006)

Pursuant to the requirements of Part 8 of the Planning & Development Regulations 2001 (as amended by Articles 17 and 19 of the Planning and Development Regulations 2006), Notice is hereby given that Cork County Council (North) proposes to carry out the following development:

Construction of a Wastewater Treatment Plant incorporating Inlet Works, Detention Tank(s), Secondary Treatment Works, Sludge Holding Tank(s), Outlet Works, Control Building, Site Road and Footpaths, Site Fencing and other associated site works at Knockanehill, Kilworth, Fermoy, Co. Cork.

The proposed Wastewater Treatment Plant will be constructed within the existing Wastewater Treatment Plant site which is located approximately 900m east of Kilworth Village centre in the townland of Knockanehill.

Plans and particulars of the proposed development will be available for inspection or purchase at the Water Services Department, Council Offices, Annabella, Mallow, Co. Cork from 9.00am to 5.00pm and at the Council Offices, The Courthouse, Mitchelstown, Co. Cork from 9.00am to 1.00pm and 2.00pm to 5.00pm on each day during which said offices are open for the transaction of business (excluding Bank Holidays) for a period ending 29th June 2007.

Submissions or observations with regard to the proposed development, dealing with the proper planning and development of the area in which the development would be situated, may be made in writing to the Senior Engineer, Water Services Department, Cork County Council (North), Annabella, Mallow, Co. Cork not later than 5.00pm, on Friday, 13th July, 2007

Director of Services, Northern Division.

ROADS

TEMPORARY CLOSING OF PUBLIC ROAD

Pursuant to Section 75 of the of the Roads Act, 1993, NOTICE is hereby given that the following road will be closed to public traffic from Tuesday, 5th June 2007, to Monday, 25th June 2007, to facilitate road works.

Road to be Closed: L1516-63-82 - Upper Aghern to Coole, Fermoy.

Alternative Route

Traffic from Conna: Travel west on the L1521-0, L1520-39 to Castlelyons, turn right onto the L15180 and onwards to Fermoy.
Traffic from Fermoy: Turn left at the Forge Cross onto the L1537-0 and travel to the N72, turn right and travel eastwards to Daly's Cross. Turn right onto the L1532-0 and on to Conna.

Further details available at 022/30434
Director of Services, Cork County Council, Annabella, Mallow.

TEMPORARY CLOSURE OF PUBLIC ROAD - COBH

Notice is hereby given, that pursuant to Section 75 of the Roads Act 1993, the following road will be closed to public traffic from 8.00am Monday, 28th May 2007 to 6.00pm Saturday, 13th October 2007:

LP2994 and LS7015 Public Roads at Ballyleary, Cobh, between the Tay Road (LP2993) and Cobh Town (Botharsalach).

Alternative Route

Tay Road (LP2993)/Ballynoe Road (LP2095) and Tay Road (LP2993)/Ticknock Road (LP2969).

The purpose of the Temporary Closure is to facilitate the laying of sewers for North Cobh Sewerage Scheme.

Director of Services, Floor 5, County Hall.

TEMPORARY CLOSURE OF PUBLIC ROAD - MIDLETON

Notice is hereby given that, pursuant to Section 75 of the Roads Act 1993, the following road will be closed to public traffic from Monday, 28th May 2007 to Saturday, 23rd June 2007:

L3601 Castlelyons to Midleton Road from Two Pot Cross Roads to Peafield Cross Roads.

Alternative Route

Via Castlelyons Dungourney Road from Two Pot Cross Roads to Ardglass Cross Roads (L3600) and from Ardglass Cross Roads to Peafield Cross Roads via L7612.

The purpose of the Temporary Closure is to facilitate the laying of a new road surface.

Director of Services, Floor 5, County Hall.

TEMPORARY CLOSURE OF PUBLIC ROAD - MIDLETON

Notice is hereby given that, pursuant to Section 75 of the Roads Act 1993, the following road will be closed to public traffic from from 8.00am Monday, 28th May 2007 to 6.00pm Friday, 27th July 2007:

L7617 Ballyspillane (4 Cross Roads) to Walshtown More (3 Cross Roads)

Alternative Route

Travelling South (towards Midleton): Via L7615 Ballytrasna, turn left (at cabinet maker) at junction with L3610 Gortnacrue Townland, continue along the L3610 Gortnacrue Townland for 3.5km approx., then turn left at golf club onto the L3613 Killeendooling Townland.

Travelling North (away from Midleton): Via L3613 Killeendooling Townland, turn right at junction with L3610 Gortnacrue Townland (after golf club), continue along the L3610 for 3.5km approx., then turn right (at cabinet maker) onto the L7615 Ballytrasna.

The purpose of the Temporary Closure is to facilitate side cleaning, drainage works, road widening, reconstruction and resurfacing.

Director of Services, Floor 5, County Hall.

TEMPORARY CLOSURE OF PUBLIC ROAD - CARRIGTWOHILL

Notice is hereby given that, pursuant to Section 75 of the Roads Act 1993, the following road will be closed to public traffic from 8.00am Friday, 25th May 2007 to 5.00pm Friday, 8th June 2007:

L3606 Woodstock Road, Carrigtwohill, Co. Cork.

Alternative Route

From Carrigtwohill: via Carrigane Road L3617, via Lisgoold Road R626, by the three cross roads Lisgoold Village R626, via three cross roads Leamlara Village L3604.

The purpose of the Temporary Closure is to facilitate the laying of a new road surface and line painting.

Director of Services, Floor 5, County Hall.

TEMPORARY CLOSURE OF PUBLIC ROAD - CHURCHTOWN SOUTH, CLOYNE

Notice is hereby given that, pursuant to Section 75 of the Roads Act 1993, the following road will be closed to public traffic from 8.00am, Monday, 28th May 2007 to 6.00pm Friday, 29th June 2007:

LP3633 Cloyne to Churchtown South Road, from the four cross roads at Ballyknock to the three cross roads in Churchtown South Village at the community centre.

Alternative Route

From the three cross roads at Ballyknock, via the Ballydavid road (LP3639), to the four cross roads Tullagh South Townland, to the Ballyregan Road (LP3638) to Churchtown South Village.

The purpose of the Temporary Closure is to facilitate the laying of a new road surface.

Director of Services, Floor 5, County Hall.

TEMPORARY CLOSURE OF PUBLIC ROAD - KINSALE

Notice is hereby given that, Cork County Council is considering, in pursuance of Section 75 of the Roads Act 1993, the temporary closure of the following road to public traffic from 8.00am Monday, 4th June 2007 to 8.00am Friday, 8th June 2007:

R606 The Marsh, Cappagh, Kinsale, Co. Cork.

Alternative Route

From Innishannon: Via R605 at Ballythomas Cross Roads to Abbeylands, R607 and LP 3232-0 to R600 at Pewther Hole Cross, R600 through Kinsale to the Bandon River Bridge (Arch Deacon Duggan Bridge).

To Innishannon: Via Bandon River Bridge (Arch Deacon Duggan Bridge) on R600 through Kinsale to Pewther Hole Cross to LP 3232-0 and to R607 at Abbeylands to R605 at Ballythomas Cross Roads.

The purpose of the proposed Temporary Closure is to facilitate sewerage works.

Any person interested may lodge an objection in writing with the undersigned not later than 3 working days from the date of publication of the notice.

Director of Services, Floor 5, County Hall

CORK COUNTY COUNCIL (NORTH)

NOTICE UNDER SECTION 179 OF THE PLANNING & DEVELOPMENT ACT 2000 & PART 8, ARTICLE 81 AND ARTICLE 83 OF THE PLANNING & DEVELOPMENT REGULATIONS 2001 (AS AMENDED BY ARTICLES 17 AND 19 OF THE PLANNING & DEVELOPMENT REGULATIONS 2006)

Pursuant to the requirements of Part 8 of the Planning & Development Regulations 2001 (as amended by Articles 17 and 19 of the Planning and Development Regulations 2006), Notice is hereby given that Cork County Council (North) proposes to carry out the following development:

Construction of a Wastewater Treatment Plant incorporating Inlet Works, Detention Tank(s), Secondary Treatment Works, Sludge Holding Tank(s), Outlet Works, Control Building, Site Road and Footpaths, Site Fencing and other associated site works at Knockanohill, Kilworth, Fermoy, Co. Cork.

The proposed Wastewater Treatment Plant will be constructed within the existing Wastewater Treatment Plan site which is located approximately 900 m east of Kilworth Village centre in the townland of Knockanohill.

Plans and particulars of the proposed development will be available for inspection or purchase at the Water Services Department, Council Offices, Annabella, Mallow from 9:00 a.m. to 5:00 p.m. and at the Council Offices, The Courthouse, Mitchelstown from 9:00 a.m. to 1:00 p.m. and 2:00 p.m. to 5:00 p.m. on each day during which said offices are open for the transaction of business (excluding Bank Holidays) for a period ending 29th June 2007.

Submissions or observations with regard to the proposed development, dealing with the proper planning and development of the area in which the development would be situated, may be made in writing to the Senior Engineer, Water Services Department, Cork County Council (North), Annabella, Mallow, Co. Cork not later than 5:00 p.m. 13th July, 2007

Director of Service,
Northern Division.

FILE COPY

Comhairle Contae Chorcaí
Cork County Council

Mr. Bob Gunkel,
Senior Planner,
Planning Department,
Cork County Council,
County Hall,
Cork.

Annabella,
Mallow,
Co. Cork.
Tel: (022) 21123 • Fax: (022)21983
Email: northcork@corkcoco.ie
Web: www.corkcoco.ie
Annabella,
Mala,
Co. Chorcaí.
Fón: (022) 21123 • Faics: (022) 21983
R-phost: northcork@corkcoco.ie
Suíomh Gréasáin: www.corkcoco.ie

21st May, 2007

RE: PLANNING & DEVELOPMENT REGULATIONS, 2001 – NOTICE UNDER PART 8
Proposed Wastewater Treatment Plant with associated works at Knockanohill, Kilworth, Fermoy, Co. Cork

---

Dear Bob,

Cork County Council propose to construct a new wastewater treatment plant to replace the existing wastewater treatment plant which is presently operating at full capacity. The proposed Wastewater Treatment Plant will be constructed within the existing Wastewater Treatment Plan site which is located approximately 900m east of Kilworth village centre in the townland of Knockanohill.

Cork County Council are now seeking permission under Part 8 of the Planning & Development Regulations, 2001, as amended, in relation to the proposed wastewater treatment plant.

The proposed plant will be constructed as a design/build project and will include inlet works, detention tank(s), secondary treatment works, sludge holding tank, outlet works, control house, site roads and footpaths, palisade fencing around site etc. Once the new plant is commissioned and operational, it is proposed to remove the existing plant offsite for use elsewhere within the Division.

Please find attached copy of site notice, copy of newspaper advertisement and site location map. I would be obliged if you could inspect the plans and report on any likely implications of the proposed development with respect to the proper planning and development of the area.

Yours sincerely,

Billy O' Sullivan, B.E,
Executive Engineer,
WATER SERVICES.

Direct Tel: 022-30409
Email: billy.osullivan@corkcoco.ie

PLANNING & DEVELOPMENT REGULATIONS, 2001 to 2007.

Pursuant to the requirements of Part 8 of the Planning & Development Regulations, 2001 (as amended by Articles 17 and 19 of the Planning & Development Regulations 2006), notice is hereby given that Cork County Council (North) proposes to carry out the following development:

Construction of a Wastewater Treatment Plant incorporating Inlet Works, Detention Tank(s), Secondary Treatment Works, Sludge Holding Tank(s), Outlet Works, Control Building, Site Road and Footpaths, Site Fencing and other associated site works at Knockanohill, Kilworth, Fermoy, Co. Cork.

The proposed Wastewater Treatment Plant will be constructed within the existing Wastewater Treatment Plan site which is located approximately 900m east of Kilworth village centre in the townland of Knockanohill.

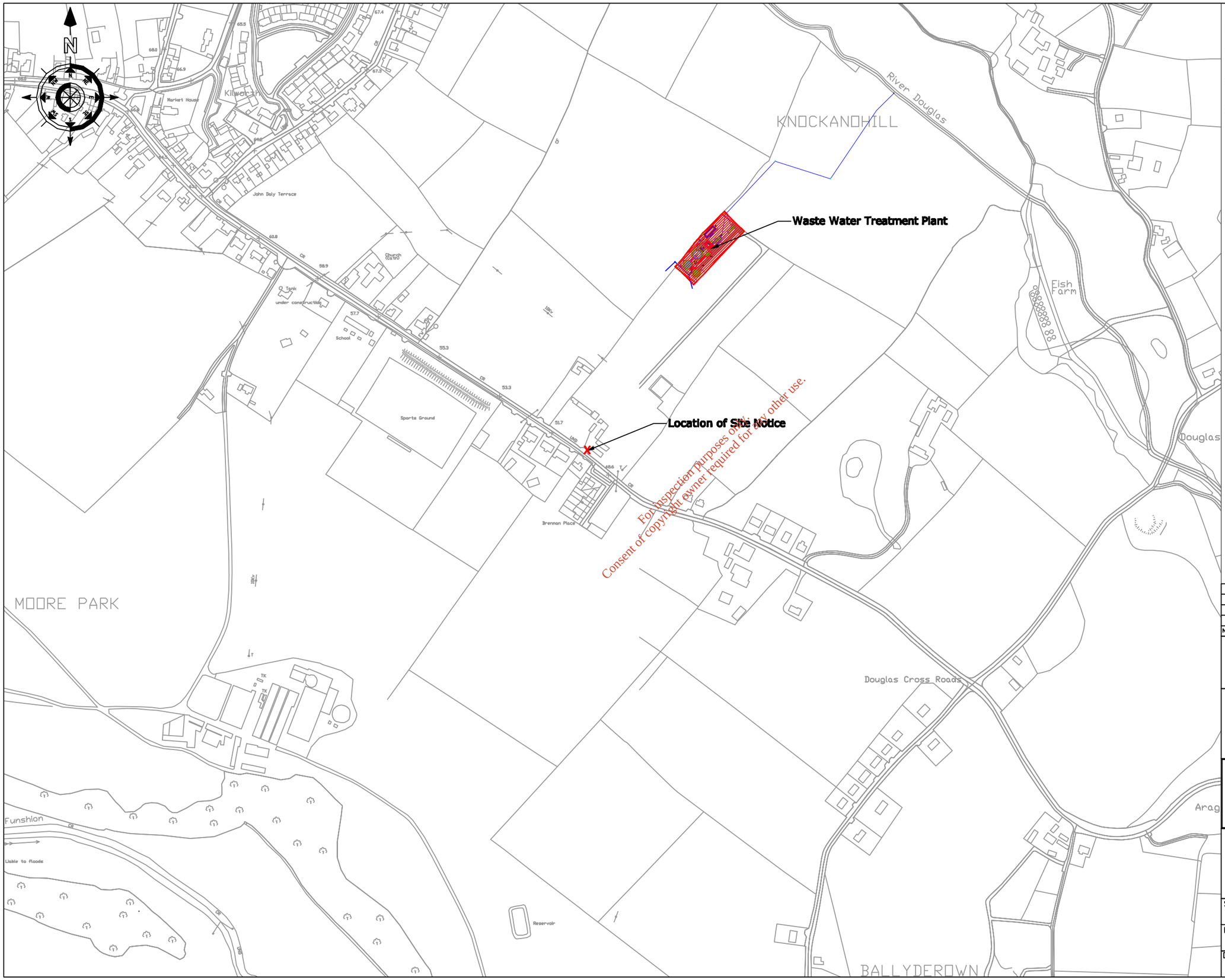
Plans and particulars of the proposed development will be available for inspection or purchase at the Water Services Department, Council Offices, Annabella, Mallow from 9:00 a.m. to 5:00 p.m. and at the Council Offices, The Courthouse, Mitchelstown from 9:00 a.m. to 1:00 p.m. and 2:00 p.m. to 5:00 p.m. on each day during which said offices are open for the transaction of business (excluding Bank Holidays) for a period ending 29th June 2007

Submissions or observations with regard to the proposed development, dealing with the proper planning and development of the area in which the development would be situated, may be made in writing to the Senior Engineer, Water Services Department, Cork County Council (North), Annabella, Mallow, Co. Cork not later than 5:00 p.m. 13th July, 2007

Signed: Billy O'Sullivan

On behalf of Cork County Council.

Date of Erection of Notice: 18/5/2007



NOTES

1. Dimensions are not to be scaled from drawing. For any discrepancies found consult with the design office.
2. This drawing is to be read in conjunction with the Specification.
3. This drawing is to be read in conjunction with all other contract drawings.

No.	Date	Drwn	Surv	Chkd	Revision Description

Cork County Council,
Northern Division.

N. O'KEEFFE, B.E.,
COUNTY ENGINEER,
COUNTY HALL,
CORK.

Job Title: **Kilworth & Environs Waste Water Discharge Licence Application**

Drawing Title:

Location of Site Notice
Attachment B8 - Map 8

Scales:	Surveyed by:	Drawn by:
1:5000 @ A3	D.L.	D.L.
Designed by:	**Checked by:**	**Date:**
F.J.	F.C.	August 2008
Drawing number:		**Rev.**
B8 - Map 8		-

CORK COUNTY COUNCIL

SITE NOTICE

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Water Services Northern Division, Cork County Council, Annabella, Mallow is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the Agglomeration of Kilworth at the following locations:

Plant Name	Location	National Grid Ref.
Kilworth WWTP	Knockanohill, Kilworth	E184090 N102434

Discharge	Function	Townland	Receptor	Grid Reference
Primary	**Main**	**Knockanohill**	**Douglas**	**E184362 N102659**

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 Offices, Annabella, Mallow, Co. Cork, Telephone: 022-21123 Fax: 022-21983**

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

Newspaper Advertisement

Cork County Council Northern Division

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Water Services Northern Division, Cork County Council, Annabella, Mallow is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the Agglomeration of Kilworth at the following locations:

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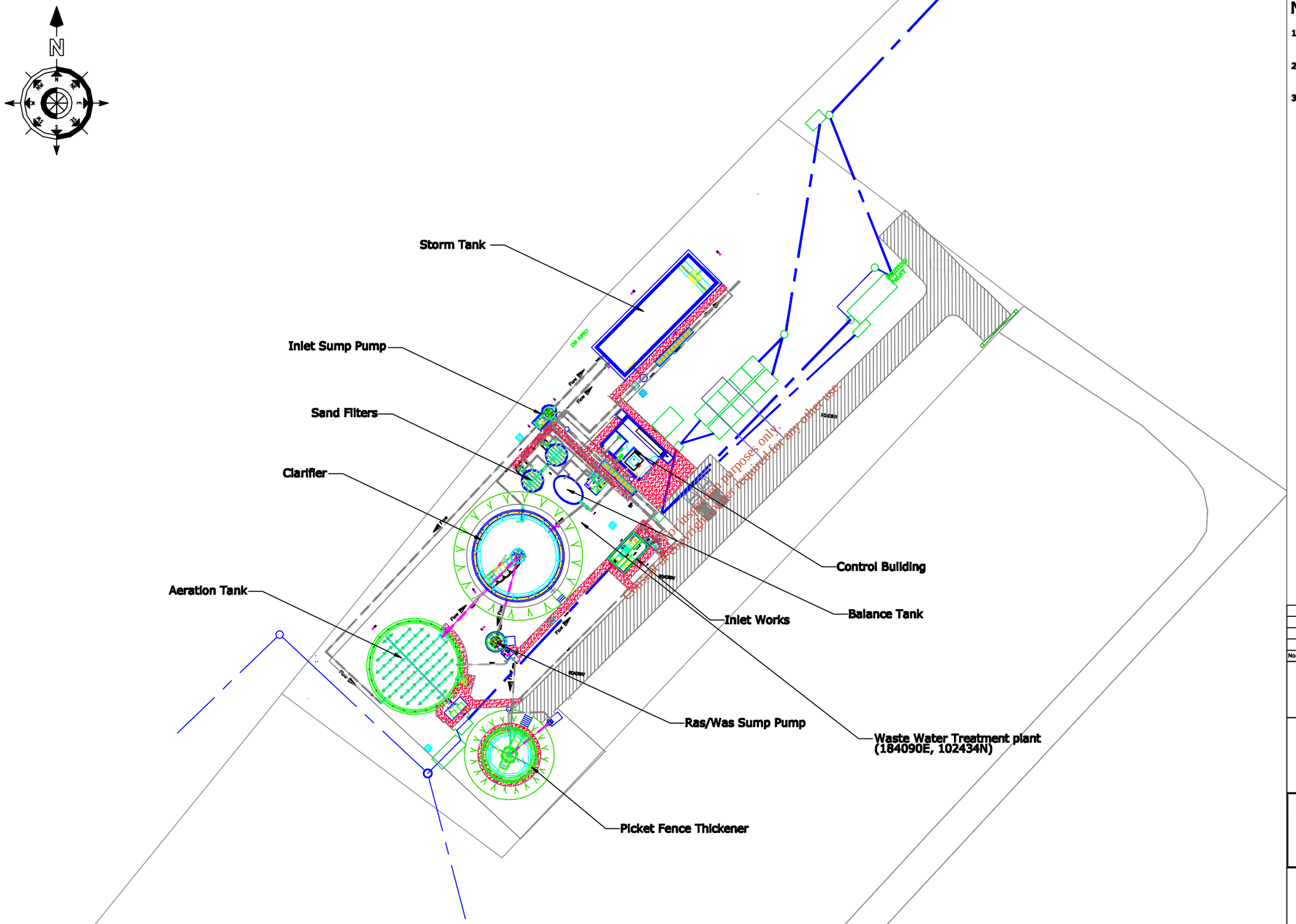
- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335599 Telephone: 053-9160600 Fax: 053-9160699 Email:info@epa.ie

and at

- Cork County Council Offices, Annabella, Mallow, Co. Cork, Telephone: 022-21123 Fax: 022-21893.

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



NOTES

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   For any discrepancies found consult with the design office.
2. This drawing is to be read in conjunction with the Specification.
3. This drawing is to be read in conjunction with all other contract drawings.

KEY PLAN

No.	Date	Drwn	Surv	Chkd	Revision Description

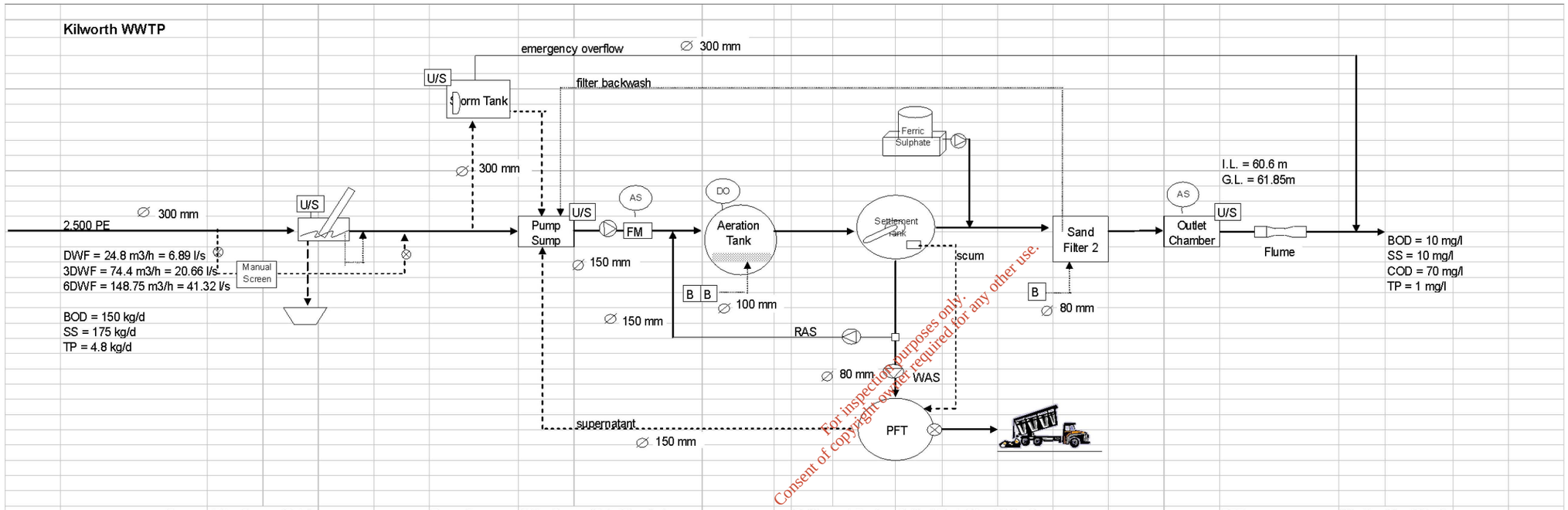
Cork County Council,
Northern Division.

N. O'KEEFFE, B.E.,
COUNTY ENGINEER,
COUNTY HALL,
CORK.

Job Title:
Kilworth & Environs
Waste Water Discharge
Licence Application

Drawing Title:
Layout of Waste Water
Treatment Plant
Attachment C1 - Map 9

Scales: 1:500 @ A3	Surveyed by: D.L.	Drawn by: D.L.
Designed by: F.J.	Checked by: F.C.	Date: August 2008
Drawing number: C1 - Map 9		Rev: -



Screen	1 No. Screen (Duty)	**Pump Sump**	2 No. Pumps (Duty/Standby)	**Settlement Tank**	Settlent Tank SA = 99.2 m2	**PFT**	Working V = 100 m3
	Flow rate = 148.75 m3/h = 41.32 l/s		Flow rate = 74.4 m3/h = 20.66 l/s		Settlent Tank Working V = 40.5 m3		6.07 m dia x 4m side wall
	6mm screenings in all directions		Automatic Sampler		Retention Time = 3 h @ 3 DWF		Retention Time = 30 d @ 4.5 %DS
	By-pass manual screen		Flow Meter		11.37m dia x 3m deep		7.5 degrees sloped floor
	skip				UFV = 0.75 m3/m2/h		Baur Connection
		Storm Tank	Working V = 160 m3		11.5 degrees sloped floor		Supernatant = 9 m3/h
Ferric Dosing	2 No. Dosing Pumps (Duty/Standby)		17m x 4m x 2.4m deep		scum box		
	Flow rate = 2.8 m3/h		Retention Time = 2 h @ 3DWF		half rotating bridge	**Sand Filter**	1 No Sand Filter
	1 m3 IBC + Bund		scum baffle			each	Surface Area = 15 m2
			Tipping Bucket	**Blowers**	2 No. Blowers (Duty/Standby)		
					375 kg O2/d = 15.6 kg O2/h	**Backwash Blowers**	1 No. Blowers (Duty)
		Aeration Tank	Working V = 428.5 m3	each	Flow rate = 190 Nm3/h		Flow rate = 186 m3/h
			Retention Time = 17.2 h @ DWF		aprox 52 diffusers		
			MLSS = 3,500 mg/l		VSD	**Outlet chamber**	Flume
			FM = 0.1				Automatic Sampler
			DO Meter	**Sludge pumps**	2 No. RAS/WAS (Duty/Standby)		
			11.86m dia x 4.5m side wall		Flow rate = 74.4 m3/h = 20.66 l/s		

NOTES

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2. **This drawing is to be read in conjunction with the Specification.**
3. **This drawing is to be read in conjunction with all other contract drawings.**

No.	Date	Drwn	Surv	Chkd	Revision Description

Cork County Council,
Northern Division.

N. O'KEEFFE, B.E.,
COUNTY ENGINEER,
COUNTY HALL,
CORK.

Job Title: **Kilworth & Environs Waste Water Discharge Licence Application**

Drawing Title: **Schematic showing Existing Treatment Plant Process Attachment C1 - Drawing 1**

Scales:	Surveyed by:	Drawn by:
1:5000 @ A3	D.L.	D.L.
Designed by:	**Checked by:**	**Date:**
F.J.	F.C.	August 2008
Drawing number:		**Rev:**
C1 - Drawing 1		-

Attachment E4 Kilworth Discharge Outlet Table E4

Sample Date	22/11/2007	03/04/2008	12/6/2008	23/10/2008	8/1/2009	20/1/2009			
Sample	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent	Average	Kg/Day	Kg/year
Sample Code		GS255	GS524	GS1135	GT009	GT083			
Flow M^3/Day	*	*	*	*	*	*	2173			Maximum Flow
pH	7.9	*	7.7	7.2	7.9	8.1	7.76		
Temperature ℃	*	*	*	*	*	*	*		
Cond 20℃	*	965	1148	*	1279	1226	1154.5		
SS mg/L	34	83	329	221	229	66	160.3333	348.4043	127167.5817
NH_3 mg/L	27	26.1	*	25	49.3	30.4	31.56	68.57988	25031.6562
BOD mg/L	36.4	*	236	305	309	100	197.28	428.6894	156471.6456
COD mg/L	83	234	644	498	427	363	374.8333	814.5128	297297.1842
TN mg/L	*	*	*	43	62.7	46	50.56667	109.8814	40106.69883
Nitrite mg/L	*	*	*	*	0.031	*	0.031	0.067363	24.587495
Nitrate mg/L	*	*	*	*	<0.41	*	<0.41	<0.89093	<325.18945
TP mg/L	4.5	5.53	10.45	7.3	11	6.3	7.513333	16.32647	5959.162767
O-PO4-P mg/L	*	4.07	9.9	*	7.23	4.7	6.475	14.07018	5135.613875
SO4 mg/L	<30	*	*	<30	59.2	*	29.73	64.60329	23580.20085
Phenols µg/L	*	*	*	*	31.531	*	0.031531	0.068517	25.008655
Atrazine µg/L	*	*	*	*	<0.1	*	<0.0001	<0.000217	<0.0793145
Dichloromethane	*	*	*	*	<1	*	<0.001	<0.002173	<0.793145
Simazine µg/L	*	*	*	*	<0.01	*	<0.00001	<0.000021	<0.00793145
Toluene µg/L	*	*	*	*	<1	*	<0.001	<0.002173	<0.793145
Tributyltin µg/L	*	*	*	*	*	*	*	*	*
Xylenes µg/L	*	*	*	*	<1	*	<0.001	<0.002173	<0.793145
Arsenic µg/L	*	*	*	*	<0.96	*	<0.00096	<0.002086	<0.7614192
Chromium mg/L	*	*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04346	<15.8629
Copper mg/L	*	*	0.176	0.094	0.084	0.035	0.09725	0.211324	77.13335125
Cyanide µg/L	*	*	*	*	<5	*	<0.005	<0.010865	<3.965725
Fluoride µg/L	*	*	*	*	51	*	0.051	0.110823	40.450395
Lead mg/L	*	*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04346	<15.8629
Nickel mg/L	*	*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04346	<15.8629
Zinc mg/L	*	*	0.272	0.231	0.15	0.023	0.169	0.367237	134.041505
Boron mg/L	*	*	0.072	0.056	0.027	<0.02	0.0413	0.089745	32.7568885
Cadmium mg/L	*	*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04346	<15.8629
Mercury µg/L	*	*	*	*	<0.2	*	<0.0002	<0.000434	<0.158629
Selenium µg/L	*	*	*	*	1.3	*	0.0013	0.002825	1.0310885

Barium mg/L	*	*	0.091	0.05	0.039	0.026	0.0515	0.11191	40.8469675

values recorded as 1/2 of LOD for statistical purposes

Attachment E4 Kilworth Downstream Table E4

Sample Date	23/10/2008	08/01/2009	20/01/2009	
Sample	River	River	River	Average
Sample Code	GS1136	GT010	GT085	
Flow M^3/Day	*	*	*	
pH	*	7.7	7.5	7.6
Temperature °C	*	*	*	*
Cond 20°C	*	141	198	169.5
SS mg/L	*	5	3	4
NH_3 mg/L	0.1	0.2	0.05	0.1167
BOD mg/L	*	3	<2	2
COD mg/L	*	<21	22	16.3
TN mg/L	*	2.1	1.6	1.85
Nitrite mg/L	*	0.009	*	0.009
Nitrate mg/L	*	1.53	*	1.53
TP mg/L	<0.2	<0.20	0.07	0.09
O-PO4-P mg/L	<0.05	<0.05	0.05	0.033
SO4 mg/L	<30	<30.0	*	<30.0
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	*	<1	*	<1
Tributyltin µg/L	*	*	*	*
Xylenes µg/L	*	<1	*	<1
Arsenic µg/L	*	<0.96	*	<0.96
Chromium mg/L	<0.02	<0.02	<0.02	<0.02
Copper mg/L	<0.02	<0.02	<0.02	<0.02
Cyanide µg/L	*	<5	*	<5
Fluoride µg/L	*	41	*	41
Lead mg/L	<0.02	<0.02	<0.02	<0.02
Nickel mg/L	<0.02	<0.02	<0.02	<0.02
Zinc mg/L	<0.02	<0.02	<0.02	<0.02
Boron mg/L	<0.02	<0.02	<0.02	<0.02
Cadmium mg/L	<0.02	<0.02	<0.02	<0.02
Mercury µg/L	*	<0.2	*	<0.2
Selenium µg/L	*	<0.74	*	<0.74
Barium mg/L	0.032	0.046	0.026	0.0347

values recorded as 1/2 of LOD for statistical purposes

Attachment E4 Kilworth Upstream Table E4

Sample Date	23/10/2008	08/01/2009	20/01/2009	
Sample	River	River	River	Average
Sample Code	GS1137	GT011	GT084	
Flow M^3/Day	*	*	*	
pH	*	7.4	7.5	7.45
Temperature °C	*	*	*	*
Cond 20°C	*	124	112	118
SS mg/L	*	<2.5	1	1.125
NH_3 mg/L	<0.1	<0.1	<0.05	0.0417
BOD mg/L	*	2	<2	1.5
COD mg/L	*	<21	24	17.25
TN mg/L	*	1.5	1.4	1.45
Nitrite mg/L	*	<0.004	*	<0.004
Nitrate mg/L	*	1.24	*	1.24
TP mg/L	<0.2	<0.20	0.05	0.083
O-PO4-P mg/L	<0.05	<0.05	<0.05	<0.05
SO4 mg/L	<30	<30.0	*	<30.0
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	*	<1	*	<1
Tributyltin µg/L	*	*	*	*
Xylenes µg/L	*	<1	*	<1
Arsenic µg/L	*	<0.96	*	<0.96
Chromium mg/L	<0.02	<0.02	<0.02	<0.02
Copper mg/L	<0.02	<0.02	<0.02	<0.02
Cyanide µg/L	*	<5	*	<5
Fluoride µg/L	*	35	*	35
Lead mg/L	<0.02	<0.02	<0.02	<0.02
Nickel mg/L	<0.02	<0.02	<0.02	<0.02
Zinc mg/L	<0.02	<0.02	<0.02	<0.02
Boron mg/L	<0.02	<0.02	<0.02	<0.02
Cadmium mg/L	<0.02	<0.02	<0.02	<0.02
Mercury µg/L	*	<0.2	*	<0.2
Selenium µg/L	*	0.9	*	0.9
Barium mg/L	0.021	0.058	0.024	0.03433

values recorded as 1/2 of LOD for statistical purposes

Attachment E4 Kilworth Inlet Table E4

Sample Date	16/08/2007	27/09/2007	08/01/2009	20/01/2009			
Sample	Influent	Influent	Influent	Influent	Average	Kg/Day	Kg/year
Sample Code			GT008	GT082			
Flow M^3/Day	*	*	*	*	2173			Maximum Flow
pH	*	*	7.8	8.3	8.05		
Temperature °C	*	*	*	*			
Cond 20°C	*	*	995	2020	1507.5		
SS mg/L	*	*	312	172	242	525.866	191941.1
NH_3 mg/L	48.6	*	48.3	45.8	47.56667	103.3624	37727.26
BOD mg/L	*	*	376	235	305.5	663.8515	242305.8
COD mg/L	204	259	663	515	410.25	891.4733	325387.7
TN mg/L	*	*	63.1	64	63.55	138.0942	50404.36
Nitrite mg/L	*	*	0.18	*	0.18	0.39114	142.7661
Nitrate mg/L	*	*	<0.41	*	<0.41	<0.89093	<325.18945
TP mg/L	6.45	*	14.5	8.2	9.716667	21.11432	7706.726
O-PO4-P mg/L	4.4	*	8.62	5.6	6.206667	13.48709	4922.787
SO4 mg/L	51.3	*	51	*	51.15	111.149	40569.37
Phenols µg/L	*	*	13.327	*	0.013327	0.02896	10.57024
Atrazine µg/L	*	*	<0.01	*	<0.00001	<0.000021	<0.00793145
Dichloromethane µg/L	*	*	<1	*	<0.001	<0.002173	<0.793145
Simazine µg/L	*	*	<0.01	*	<0.00001	<0.000021	<0.00793145
Toluene µg/L	*	*	<1	*	<0.001	<0.002173	<0.793145
Tributyltin µg/L	*	*	*	*	*	*	*
Xylenes µg/L	*	*	<1	*	<0.001	<0.002173	<0.793145
Arsenic µg/L	*	*	<0.96	*	<0.00096	<0.002086	<0.7614192
Chromium mg/L	*	<0.02	<0.02	<0.02	<0.02	<0.04346	<15.8629
Copper mg/L	*	0.049	0.095	0.023	0.055667	0.120964	44.15174
Cyanide µg/L	*	*	6	*	0.006	0.013038	4.75887
Fluoride µg/L	*	*	58	*	0.058	0.126034	46.00241
Lead mg/L	*	0.026	<0.02	<0.02	0.0153	0.033247	12.13512
Nickel mg/L	*	<0.02	<0.02	<0.02	<0.02	<0.04346	<15.8629
Zinc mg/L	*	0.079	0.124	0.036	0.079667	0.173116	63.18722
Boron mg/L	*	*	<0.02	<0.02	<0.02	<0.04346	<15.8629
Cadmium mg/L	*	<0.02	<0.02	<0.02	<0.02	<0.04346	<15.8629
Mercury µg/L	*	*	<0.2	*	<0.0002	<0.000434	<0.158629
Selenium µg/L	*	*	1.4	*	0.0014	0.003042	1.110403
Barium mg/L	*	0.035	0.051	0.023	0.036333	0.078952	28.8176

values recorded as 1/2 of LOD for statistical purposes

										Parameter	Temperatu	Dissolved	pH	BOD	Nitrite	Molybdate	Ammonium	Nitrate	Dissolved	Hardness	Alkalinity	Appearan	Chloride	Dissolved	Suspende	Zn	Colour	Conductiv	Mg	Ca	Copper (D	Odour	Total Zn
												O2		O2	NO2	P	NH4	NO3		CaCO3	CaCO3		Cl			Zn	Hz		Mg	Ca	Diss Cu		
										Max	--	15	Varies	Varies	0.05	Varies	Varies	Varies	--	--	--	--	--	150	--	500	Varies	--	--	--	--	--	--
										Target	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
										Min	--	5	Varies	--	--	--	--	--	--	--	--	--	--	50	--	--	--	--	--	--	--	--	--
Project	Project Re	Location	Location I	Location E	Location N	Sample Ty	Sample Re	Sample D	Sample T	Comments	Degrees C	mg/l	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	µg/l	mg/l	mg/l	Descriptive	mg/l	% O2	mg/l	µg/l	Hazen	µS/cm	mg/l	mg/l	mg/l	Descriptive	mg/l
Douglas (Bride)		Br W Bally	RS18D02(	192735	89635	WFD Oper	2008/0569	03-Apr-08	11:35		10.1	12	7.5	0.2	0.037		0.115	28.4		99	68		18.3	104			23	233					
Douglas (Bride)		Br W Bally	RS18D02(	192735	89635	WFD Oper	2008/0871	########	12:20		13.8	11.5	7.6	0.4	0.015	0.039		25.8		62	76	clear	19.4	116				234					
Douglas (Bride)		Br W Bally	RS18D02(	192735	89635	WFD Oper	2008/1339	02-Jul-08	11:45		22.7	12.4	7.4	1.4	0.096	0.08	0.092	23.4		101	88	clear	16.9	117				235					
Douglas (Bride)		Br W Bally	RS18D02(	192735	89635	WFD Oper	2008/2500	01-Oct-08	13:00		12.1	10.1	7.4	1.2	0.05	0.058	0.104	26.8		90	74	clear	17.7	96			16	233					
										Sample Coun	4	4	4	4	4	3	3	4	0	4	4	-	4	4	0	0	2	4	0	0	0	-	0
										Maximum	22.7	12.4	7.6	1.4	0.096	0.08	0.115	28.4		101	88	-	19.4	117			23	235				-	
										Minimum	10.1	10.1	7.4	0.2	0.015	0.039	0.092	23.4		62	68	-	16.9	96			16	233				-	
										Mean	14.7	11.5	7.48	0.8	0.05	0.059	0.104	26.1		88	76.5	-	18.1	108			19.5	234				-	
										Median	13	11.8	7.45	0.8	0.044	0.058	0.104	26.3		94.5	75	-	18	110			19.5	234				-	
										Std. Deviation	5.56	1	0.096	0.589	0.034	0.021	0.012	2.09		18	8.39	-	1.05	10.1			4.95	1				-	
Funcheon		Ballyarthur	RS18F050	181600	143002	WFD Oper	2008/0548	02-Apr-08	12:20		9.7	11	7.6	0.4	0.017			8.8		98	88	clear	14.2	96.1			19	210					
										Sample Coun	1	1	1	1	1	0	0	1	0	1	1	-	1	1	0	0	1	1	0	0	0	-	0
										Maximum	9.7	11	7.6	0.4	0.017			8.8		98	88	-	14.2	96.1			19	210				-	
										Minimum	9.7	11	7.6	0.4	0.017			8.8		98	88	-	14.2	96.1			19	210				-	
										Mean	9.7	11	7.6	0.4	0.017			8.8		98	88	-	14.2	96.1			19	210				-	
										Median	9.7	11	7.6	0.4	0.017			8.8		98	88	-	14.2	96.1			19	210				-	
										Std. Deviation	0	0	0	0	0			0		0	0	-	0	0			0	0				-	
Funcheon		Ballynahow	RS18F050	179362	103023	WFD Oper	2008/0554	02-Apr-08	13:50		11.1	11.7	8.1	0.2	0.051			20		160	134	clear	35.2	105.6			34	392					
Funcheon		Ballynahow	RS18F050	179362	103023	WFD Oper	2008/1085	########	14:30		13.3	12	8.3	1.2	0.102	0.057	0.057	21.1		120	196	clear	77.1	115				620					
Funcheon		Ballynahow	RS18F050	179362	103023	WFD Oper	2008/2319	24-Sep-08	15:00		11.9	10.9	8.1	0.6	0.044	0.097	0.03	22		141	326	clear	37.9	99			21	427					
										Sample Coun	3	3	3	3	3	2	2	3	0	3	3	-	3	3	0	0	2	3	0	0	0	-	0
										Maximum	13.3	12	8.3	1.2	0.102	0.097	0.057	22		160	326	-	77.1	115			34	620				-	
										Minimum	11.1	10.9	8.1	0.2	0.044	0.057	0.03	20		120	134	-	35.2	99			21	392				-	
										Mean	12.1	11.5	8.17	0.667	0.066	0.077	0.044	21		140	219	-	50.1	107			27.5	480				-	
										Median	11.9	11.7	8.1	0.6	0.051	0.077	0.044	21.1		141	196	-	37.9	106			27.5	427				-	
										Std. Deviation	1.11	0.57	0.116	0.503	0.032	0.028	0.019	1		20	98	-	23.4	8.06			9.19	123				-	
Funcheon		Brackbawn	RS18F050	188970	116810	WFD Surv	2008/0088	16-Jan-08	10:00		7.3	11.3	7.4	0.4	< 0.013	< 0.018	< 0.026	3.7		36	28		10.1	98			8	81					
Funcheon		Brackbawn	RS18F050	188970	116810	WFD Surv	2008/0314	28-Feb-08	10:20		6.7	12.4	8	0.2	< 0.013	0.007	< 0.026	3.9		35	34	clear		102			< 5	92	2.2	10			
Funcheon		Brackbawn	RS18F050	188970	116810	WFD Surv	2008/0508	27-Mar-08	10:20		6.3	12.2	8	0.1	< 0.013	< 0.006		2.2		40	34		11.2	101			< 5	95					
Funcheon		Brackbawn	RS18F050	188970	116810	WFD Surv	2008/1012	########	12:00		10.9	10.8	8.1	0.1	< 0.013	< 0.006	0.037	< 1.8		39	36		9	99				200					
Funcheon		Brackbawn	RS18F050	188970	116810	WFD Oper	2008/1081	########	13:00		11.6	10.4	7.7	0.4	< 0.013	0.007	0.071	2.5		47	44	clear	8.7	98				101					
Funcheon		Brackbawn	RS18F050	188970	116810	WFD Surv	2008/1235	18-Jun-08	12:45		12	12.3	8.2	0.5	< 0.013	0.009	< 0.026	2.4		37	40	clear	9.9	117				99					
Funcheon		Brackbawn	RS18F050	188970	116810	WFD Surv	2008/1500	17-Jul-08	11:55		12.2	10.4	7.8	< 0.1	< 0.013	0.01	< 0.026	2.6		36	46		9.1	99				95					
Funcheon		Brackbawn	RS18F050	188970	116810	WFD Surv	2008/2035	28-Aug-08	11:30		12.8	10.1	7.8	0.3	< 0.013	0.011	< 0.026	3.3		31	32	clear	8.7	100			< 5	86					
Funcheon		Brackbawn	RS18F050	188970	116810	WFD Oper	2008/2315	24-Sep-08	13:40		10.4	10.4	7.8	0.3	< 0.013	0.007	< 0.026	1.8		3	80	Clear	9.8	105			6	90					
										Sample Coun	9	9	9	9	9	9	8	9	0	9	9	-	8	9	0	0	5	9	1	1	0	-	0
										Maximum	12.8	12.4	8.2	0.5	< 0.013	0.011	0.071	3.9		47	80	-	11.2	117			8	200	2.2	10		-	
										Minimum	6.3	10.1	7.4	< 0.1	< 0.013	< 0.006	< 0.026	< 1.8		3	28	-	8.7	98			< 5	81	2.2	10		-	
										Mean	10	11.1	7.87	0.261	0.006	0.007	0.023	2.59		33.8	41.6	-	9.56	102			4.3	104	2.2	10		-	
										Median	10.9	10.8	7.8	0.3	<0.013	0.007	0.013	2.5		36	36	-	9.45	100			<5	95	2.2	10		-	
										Std. Deviation	2.55	0.931	0.24	0.158	0.001	0.003	0.021	0.944		12.3	15.5	-	0.858	6.01			2.56	36.4	0	0		-	
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Surv	2008/0087	16-Jan-08	11:15		7.7	10.8	7.8	0.9	0.042	0.009	0.086	21.9		158	130		18.3	93			45	312					
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Surv	2008/0315	28-Feb-08	11:25		8.2	11.1	8.1	0.2	0.026	0.036	0.051	26.7		228	188	evidence of silting on		94			15	452	7.5	79			
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Surv	2008/0509	27-Mar-08	11:15		7.9	11.9	8.6	< 0.1	0.025	0.102	< 0.026	22.8		19	182			102			12	422					
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Surv	2008/0748	24-Apr-08	12:45		11.2	13.3	8.3	0.4	0.037	0.024	0.035			212	190	clear	44.2	122				495					
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Surv	2008/1013	########	11:30		12.4	11.4	8.2	0.2	0.072	0.021	< 0.026	4.7		215	152		59.8	107				566					
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Surv	2008/1236	18-Jun-08	12:20		14.2	10.2	8	0.7	0.057	0.256	< 0.026	20.1		235	204	clear	78.9	101				634					
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Surv	2008/1499	17-Jul-08	11:25		14.3	10	8.1	0.2	0.039	0.058	< 0.026	17.4		170	172		44.4	97				453					
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Surv	2008/2036	28-Aug-08	11:05		14.4	9.9	8	0.6	0.036	0.058	0.029	17.1		159	146	clear	33.3	96			21	403					
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Oper	2008/2263	17-Sep-08	11:20		11.9	10.5	8	1.1	0.033	0.034	0.032	16.1		152	138	clear	28.3	96			38	350					
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Surv	2008/2711	15-Oct-08	11:40		11.4	10	7.6	2.3	0.055	0.083	0.106	8.2		89	74		16.4	92			220	200					
Funcheon		Bridge U/s	RS18F051	183470	99387	WFD Surv	2008/3108	19-Nov-08	11:00		10.1	10.7	8	0.6	0.084	0.05	0.057	19.5		110	148	clear	29.1	94			30	381					
										Sample Coun	11	11	11	11	11	11	11	10	0	11	11	-	9	11	0	0	7	11	1	1	0	-	0
										Maximum	14.4	13.3	8.6	2.3	0.084	0.256	0.106	26.7		235	204	-	78.9	122			220	634	7.5	79		-	
										Minimum	7.7	9.9	7.6	< 0.1	0.025	0.009	< 0.026	4.7		19	74	-	16.4	92			12	200	7.5	79		-	
										Mean	11.2	10.9	8.06	0.659	0.046	0.066	0.041	17.4		159	157	-	39.2	99.5			54.4	424	7.5	79		-	
										Median	11.4	10.7	8	0.6	0.039	0.05	0.032	18.4		159	152	-	33.3	96			30	422	7.5	79		-	
										Std. Deviation	2.53	1.02	0.258	0.634	0.019	0.069	0.032	6.63		66	36.5	-	20.2	8.72			74	119	0	0		-	
Funcheon		d/s Gradog	RS18F050	179790	113690	WFD Oper	2008/0546	02-Apr-08	11:50		10	11.1	7.9	0.6	0.068			11.8		129	106	clear	59.4	98.5			26	415					
Funcheon		d/s Gradog	RS18F050	179790	113690	WFD Oper	2008/1083	########	12:00		12.5	10.2	8	2.8	0.244	0.243	0.711	11.8		180	176	clear		101				687					
Funcheon		d/s Gradog	RS18F050	179790	113690	WFD Oper	2008/2317	24-Sep-08	12:50		10.9	11.9	7.9	0.7	0.059	0.122	0.123	13.7		127	274	clear	57.1	108			19	431					
										Sample Coun	3	3	3	3	3	2	2	3	0	3	3	-	2	3	0	0	2	3	0	0	0	-	0
										Maximum	12.5	11.9	8	2.8	0.244	0.243	0.711	13.7		180	274	-	59.4	108			26	687				-	
										Minimum	10	10.2	7.9	0.6	0.059	0.122	0.123	11.8		127	106	-	57.1	98.5			19	415				-	
										Mean	11.1	11.1	7.93	1.37	0.124	0.182	0.417	12.4		145	185	-	58.2	102			22.5	511				-	
										Median	10.9	11.1	7.9	0.7	0.068	0.182	0.417	11.8		129	176	-	58.2	101			22.5	431				-	
										Std. Deviation	1.27	0.851	0.058	1.24	0.104	0.086	0.416	1.1		30	84.4	-	1.63	4.96			4.95	153				-	
Funcheon		Downing B	RS18F051	182332	98194	WFD Oper	2008/0553	02-Apr-08	13:40		11.1	11.4	8.1	0.3	0.04			19.3		164	138	clear	28.8	92.6			45	374					
Funcheon		Downing B	RS18F051	182332	98194	WFD Oper	2008/1087	########	15:00		13.3	11.3	8.2	0.3	0.074	0.072	0.034	22.7		234	212	clear	64.7	109				585					
Funcheon		Downing B	RS18F051	182332	98194	WFD Oper	2008/2320	24-Sep-08	10:00		10.9	12.8	7.9	0.3	0.025	0.051	< 0.026	22.3		161	322	clear	34.3	108			17	422					
										Sample Coun	3	3	3	3	3	2	2	3	0	3	3	-	3	3	0	0	2	3	0	0	0	-	0
										Maximum	13.3	12.8	8.2	0.3	0.074	0.072	0.034	22.7		234	322	-	64.7	109			45	585				-	
										Minimum	10.9	11.3	7.9	0.3	0.025	0.051	< 0.026	19.3		161	138	-	28.8	92.6			17	374				-	
										Mean	11.8	11.8	8.07	0.3	0.046	0.062	0.024	21.4		186	224	-	42.6	103			31	460				-	
										Median	11.1	11.4	8.1	0.3	0.04	0.062	0.024	22.3		164	212	-	34.3	108			31	422				-	
										Std. Deviation	1.33	0.84	0.153	0	0.025	0.015	0.015	1.86		41.3	92.6	-	19.3	9.2			19.8	111				-	
Funcheon		Glenavudi	RS18F050	172324	110811	WFD Oper	2008/0545	02-Apr-08	11:25			11	7.9	0.3	0.047			16.6		129	120		32	96.7			27	346					
Funcheon		Glenavudi	RS18F050	172324	110811	WFD Oper	2008/1084	########	11:00		12	11.3	8.1	0.4	0.242	0.069	0.076	18.1		202	188	clear	114.7	106				638					
Funcheon		Glenavudi	RS18F050	172324	110811	WFD Oper	2008/2318	24-Sep-08	12:10		10.2	12.2	7.9	0.2	0.059	0.11	0.061	18		154	382	clear	59.6	108			18	447					
										Sample Coun	2	3	3	3	3	2	2	3	0	3	3	-	3	3	0	0	2	3	0	0	0	-	0
										Maximum	12	12.2	8.1	0.4	0.242	0.11	0.076	18.1		202	382	-	114.7	108			27	638				-	
										Minimum	10.2	11	7.9	0.2	0.047	0.069	0.061	16.6		129	120	-	32	96.7			18	346				-	
										Mean	11.1	11.5	7.97	0.3	0.116	0.09	0.068	17.6		162	230	-	68.8	104			22.5	477				-	
										Median	11.1	11.3	7.9	0.3	0.059	0.09	0.068	18		154	188	-	59.6	106			22.5	447				-	
										Std. Deviation	1.27	0.624	0.116	0.1	0.109	0.029	0.011	0.84		37.1	136	-	42.1	6.05			6.36	148				-	
Funcheon		Kilee Br	RS18F050	177950	112592	WFD Oper	2008/1088	########	11:30		10.5	10.4	8	2.4	0.282	0.192	0.251	14.6		181	192	clear	132.8	102				777					
Funcheon		Kilee Br	RS18F050	177950	112592	WFD Oper	2008/2322	24-Sep-08	11:50		10.8	12.2	7.8	0.5	0.08	0.178	0.106	14.9		160	288	clear	65.7	99			22	477					
										Sample Coun	2	2	2	2	2	2	2	2	0	2	2	-	2	2	0	0	1	2	0	0	0	-	0
										Maximum	10.8	12.2	8	2.4	0.282	0.192	0.251	14.9		181	288	-	132.8	102			22	777				-	
										Minimum	10.5	10.4	7.8	0.5	0.08	0.178	0.106	14.6		160	192	-	65.7	99			22	477				-	
										Mean	10.6	11.3	7.9	1.45	0.181	0.185	0.178	14.8		170	240	-	99.2	100			22	627				-	
										Median	10.6	11.3	7.9	1.45	0.181	0.185	0.178	14.8		170	240	-	99.2	100			22	627				-	
										Std. Deviation	0.224	1.27	0.141	1.34	0.143	0.01	0.103	0.224		14.9	67.9	-	47.4	2.24			0	212				-	
Funcheon		Scart Ford		172012		WFD Oper	2008/1086	########	10:30		11.8	10.9	8	1	0.204	0.054	0.048	18.7		60	68	clear	95	102				622					
Funcheon		Scart Ford		172012		WFD Oper	2008/2321	24-Sep-08	11:05		10.4	12	7.9	0.5	0.054	0.107	0.053	18.6		161	282	clear	58.6	107			17	451					
										Sample Coun	2	2	2	2	2	2	2	2	0	2	2	-	2	2	0	0	1	2	0	0	0	-	0
										Maximum	11.8	12	8	1	0.204	0.107	0.053	18.7		161	282	-	95	107			17	622				-	
										Minimum	10.4	10.9	7.9	0.5	0.054	0.054	0.048	18.6		60	68	-	58.6	102			17	451				-	
										Mean	11.1	11.4	7.95	0.75	0.129	0.08	0.05	18.6		110	175	-	76.8	104			17	536				-	
										Median	11.1	11.4	7.95	0.75	0.129	0.08	0.05	18.6		110	175	-	76.8	104			17	536				-	
										Std. Deviation	0.99	0.781	0.071	0.354	0.106	0.037	0.004	0.1		71.4	151	-	25.7	3.61			0	121				-	

CORK COUNTY COUNCIL
NORTHERN DIVISION

KILWORTH WASTEWATER TREATMENT PLANT

FLOW & LOAD SURVEY

1.0 KILWORTH WWTP

A new package plant was commissioned in 2001 to serve Kilworth village. The package plant consists of two number BL4000 Blivet units with a design PE of 400 per unit. Both units are located below ground with lockable access covers. The Blivet unit, which measures 10.5m x 2.15m x 3m, contains four compartments for primary settlement, aerobic treatment, final settlement and sludge storage.

From examination of literature available on the units present, it can be seen that each unit has a design flow on 3.333 cu.m/hour providing a total treatment capacity of 6.666 cu.m/hour.

1.1 Flow Survey

A survey of all flows entering the WWTP was undertaken over the period 27th October 2006 to 26th November 2006 inclusive by Water Technology Ltd. The equipment used was the Isco Area Velocity Logger. An Isco 675 Tipping Bucket Rain Gauge was also set up at the WWTP site to log Rainfall during the survey and an automatic sampler was provided for use by Cork County Council personnel over the survey period.

A summary of the survey is provided in Table 1 overleaf.

1.2 Analysis of Survey

For analysis purposes, it is assumed that 1mm of rainfall over a 24 hour period would not affect the flows entering the wastewater treatment plant. The average dry weather flow (DWF) over the survey period can therefore be calculated as follows:

Date	Total Flow (cu.m/day)	Total Rainfall (mm/day)
28/10/06	121.87	0.0
29/10/06	134.73	0.1
30/10/06	146.30	0.3
07/11/06	135.73	0.0
08/11/06	169.90	0.9
09/11/06	123.53	0.2
10/11/06	187.30	0.7
11/11/06	145.30	0.4
12/11/06	144.10	0.1
13/11/06	135.87	0.5
14/11/06	124.30	0.2
16/11/06	158.20	0.4
18/11/06	130.03	0.3
25/11/06	134.40	0.1
TOTAL	1991.56	

The average DWF is therefore 142.25 cu.m/day.

1DWF = 142.25 cu.m/day (5.93 cu.m/hr)
3DWF = 426.75 cu.m/day (17.78 cu.m/hr)

Allowing a hydraulic loading of 220litres/head/day, the population being served by the plant is

142.25 ÷ 0.22 = **647 PE**.

The maximum flow recorded entering the plant over the survey period was 72 cu.m/hr which is approximately a 12-fold increase of the DWF entering the plant.

1.3 ANALYSIS OF WASTEWATER ENTERING PLANT

Sampling Method: Grab **Result mg/l**

Date Sampled:	03/11/2006	07/11/2006	10/11/2006	16/11/2006	17/11/2006	21/11/2006	23/11/2006
Parameter	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**
PH	8	-	6.6	7.6	-	7.97	-
Electrical Conductivity (ECuScm-1)	1248	-	1040	492	-	806	-
Ammonical Nitrogen NH3-N (mg/l)	41	36	-	8	-	18	16
Chemical Oxygen Demand (mg/l)	640		563	318	289	393	491
cBiological Oxygen Demand (mg/l)	352	295	265	135	160		237
Ortho-PO4 (mg/l)	16	-	11	3	-	8	-
Total Phosphate-PO4 (mg/l)	25	-	20	9.5	-	19	-
Suspended Solids (mg/l)	269	270	222	282	194	218	320
Flow entering Plant (cu.m/day)			130	659.63	300.27		293.27
Rainfall (mm/24hr period)			0.5	0*	8.1		7.9
BOD Load (kg/day)			**34.45**	**89.05**	**48.04**		**69.50**
PE (based on 0.06kg/head/day)			**574**	**1484**	**801**		**1158**

* - Rainfall gauge not operating.

From the above table, it can be seen that the BOD load increases as the flow entering the plant increases.

1.4 KILWORTH WASTEWATER TREATMENT PLANT
August 2006 Design Populations

1. Elm Place Pumping Station:

Present	PE	Proposed	PE
30 houses	105	6 Serviced Sites	21
1 School		N/03/6565 - 10 houses (under Construction)	35
		N/06/7283 – 4 houses (at Planning Stage)	14
		N/06/11916 – 46 dwelling houses	161

2. Main St

Present	PE	Proposed	PE
85 dwelling houses (gravity)	298	N/05/4676 – 3 dwelling houses (gravity)	10.5
6 apartments (gravity)	18	N/05/7439 67 dwelling houses (under construction)	234.5
4 public houses (gravity)			
1 hostel (gravity)	10		
1 Chiropractic Clinic (gravity)	2		
1 Arts Centre (gravity)	1		
1 Shop (gravity)			
N/03/6904 - 16 Houses (Pumping Station)	56		
N/04/3287 36 dwelling houses + supermarket (gravity) 18 dwelling houses (via pumping station)	126 63		

3. Killally Rd

Present	PE	Proposed	PE
3 Houses - Gravity	10.5	N/06/9185 – 60 dwelling houses (via pumping station)(at Planning Stage)	210
N/04/3586 – 1 house (via pumping station)	3.5		
N/04/4433 – 1 house (via pumping station)	3.5		
N/04/8304 – 1 house (via pumping station)	3.5		

4. Pound Lane

Present	PE	Proposed	PE
23 Houses (Gravity)	80.5		

5. Mountain Barrack Rd

Present	PE	Proposed	PE
Cois Coillte 4 Houses (gravity)	14	N/06/6043 – 45 dwelling houses (via pumping station) (at Planning Stage)	157.5
Cois Coillte 68 Houses (via pumping station)	238		
N/04/877 – 10 dwelling houses (via pumping station)	35		

6. Brennan Place Pumping

Present	PE	Proposed	PE
9 Houses (via pumping station)	31.5		

SUMMARY

From the above table it can be seen that the present PE is calculated as1099. However it is accepted that a number of the new dwellings which have recently being constructed may not yet be sold or occupied.

The Future PE based on planning applications granted in the village to date is estimated at 1943 PE

SITE SYNOPSIS

SITE NAME: BLACKWATER RIVER (CORK/WATERFORD)

SITE CODE: 002170

The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. In times of heavy rainfall the levels can fluctuate widely by more than 12 feet on the gauge at Careysville. The peaty nature of the terrain in the upper reaches and of some of the tributaries gives the water a pronounced dark colour. The site consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond, the tidal stretches as far as Youghal Harbour and many tributaries, the larger of which includes the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The extent of the Blackwater and its tributaries in this site, flows through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. Towns along, but not in the site, include Rathmore, Millstreet, Kanturk, Banteer, Mallow, Buttevant, Doneraile, Castletownroche, Fermoy, Ballyduff, Rathcormac, Tallow, Lismore, Cappoquin and Youghal.

The Blackwater rises in boggy land of east Kerry, where Namurian grits and shales build the low heather-covered plateaux. Near Kanturk the plateaux enclose a basin of productive Coal Measures. On leaving the Namurian rocks the Blackwater turns eastwards along the northern slopes of the Boggeraghs before entering the narrow limestone strike vale at Mallow. The valley deepens as first the Nagles Mountains and then the Knockmealdowns impinge upon it. Interesting geological features along this stretch of the Blackwater Valley include limestone cliffs and caves near the villages and small towns of Killavullen and Ballyhooly; the Killavullen caves contain fossil material from the end of the glacial period. The associated basic soils in this area support the growth of plant communities which are rare in Cork because in general the county's rocks are acidic. At Cappoquin the river suddenly turns south and cuts through high ridges of Old Red Sandstone. The Araglin valley is predominantly underlain by sandstone, with limestone occurring in the lower reaches near Fermoy.

The site is a candidate SAC selected for alluvial wet woodlands and Yew wood, both priority habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for floating river vegetation, estuaries, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, perennial vegetation of stony banks and old Oak woodlands, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter and the plant, Killarney Fern.

Wet woodlands are found where river embankments, particularly on the River Bride, have broken down and where the channel edges in the steep-sided valley between Cappoquin and Youghal are subject to daily inundation. The river side of the embankments was often used for willow growing in the past (most recently at Cappoquin) so that the channel is lined by narrow woods of White and Almond-leaved Willow (*Salix alba* and *S. triandra*) with isolated Crack Willow (*S. fragilis*) and Osier (*S. viminalis*). Grey Willow (*S. cinerea*) spreads naturally into the sites and occasionally, as at Villierstown on the Blackwater and Sapperton on the Bride, forms woods with a distinctive mix of woodland and marsh plants, including Gypsywort (*Lycopus europaeus*), Guelder Rose (*Viburnum opulus*), Bittersweet (*Solanum dulcamara*) and various mosses and algae. These wet woodlands form one of the most extensive tracts of the wet woodland habitat in the country.

A small stand of Yew (*Taxus baccata*) woodland, a rare habitat in Ireland and the EU, occurs within the site. This is on a limestone ridge at Dromana, near Villierstown. While there are some patches of the wood with a canopy of Yew and some very old trees, the quality is generally poor due to the dominance of non-native and invasive species such as Sycamore, Beech and Douglas Fir (*Pseudotsuga menzsisii*). However, the future prospect for this Yew wood is good as the site is proposed for restoration under a Coillte EU Life Programme. Owing to its rarity, Yew woodland is listed with priority status on Annex I of the EU Habitats Directive.

Marshes and reedbeds cover most of the flat areas beside the rivers and often occur in mosaic with the wet woodland. Common Reed (*Phragmites australis*) is ubiquitous and is harvested for thatching. There is also much Marsh Marigold (*Caltha palustris*) and, at the edges of the reeds, the Greater and Lesser Pond-sedge (*Carex riparia* and *C. acutiformis*). Hemlock Water-dropwort (*Oenanthe crocata*), Wild Angelica (*Angelica sylvestris*), Reed Canary-grass (*Phalaris arundinacea*), Meadowsweet (*Filipendula ulmaria*), Nettle (*Urtica dioica*), Purple Loosestrife (*Lythrum salicaria*), Marsh Valerian (*Valeriana officinalis*), Water Mint (*Mentha aquatica*) and Water Forget-me-not (*Myosotis scorpioides*).

At Banteer there are a number of hollows in the sediments of the floodplain where subsidence and subterranean drainage have created isolated wetlands, sunk below the level of the surrounding fields. The water rises and falls in these holes depending on the watertable and several different communities have developed on the acidic or neutral sediments. Many of the ponds are ringed about with Grey Willows, rooted in the mineral soils but sometimes collapsed into the water. Beneath the densest stands are woodland herbs like Yellow Pimpernel (*Lysimachia nemorum*) with locally abundant Starwort (*Callitriche stagnalis*) and Marsh Ragwort (*Senecio palustris*). One of the depressions has Silver Birch (*Betula pendula*), Ash (*Fraxinus excelsior*), Crab Apple (*Malus sylvestris*) and a little Oak (*Quercus robur*) in addition to the willows.

Floating river vegetation is found along much of the freshwater stretches within the site. The species list is quite extensive and includes Pond Water-crowfoot (*Ranunculus peltatus*), Water-crowfoot (*Ranunculus* spp.), Canadian Pondweed (*Elodea canadensis*), Broad-leaved Pondweed (*Potamogeton natans*), Pondweed (*Potamogeton* spp.), Water Milfoil (*Myriophyllum* spp.), Common Club-rush (*Scirpus*

lacustris), Water-starwort (*Callitriche* spp.), Lesser Water-parsnip (*Berula erecta*) particularly on the Awbeg, Water-cress (*Nasturtium officinale*), Hemlock Water-dropwort, Fine-leaved Water-dropwort (*O. aquatica*), Common Duckweed (*Lemna minor*), Yellow Water-lily (*Nuphar lutea*), Unbranched Bur-reed (*Sparganium emersum*) and the moss *Fontinalis antipyretica*.

The grassland adjacent to the rivers of the site is generally heavily improved, although liable to flooding in many places. However, fields of more species-rich wet grassland with species such as Yellow-flag (*Iris pseudacorus),* Meadow-sweet, Meadow Buttercup (*Ranunculus acris*) and rushes (*Juncus* spp.) occur occasionally. Extensive fields of wet grassland also occur at Annagh Bog on the Awbeg. These fields are dominated by Tufted Hair-grass (*Deschampsia cespitosa*) and rushes.

The Blackwater Valley has a number of dry woodlands; these have mostly been managed by the estates in which they occur, frequently with the introduction of Beech (*Fagus sylvatica*) and a few conifers, and sometimes of Rhododendron (*Rhododendron ponticum*) and Laurel. Oak woodland is well developed on sandstone about Ballinatray, with the acid Oak woodland community of Holly (*Ilex aquifolium*), Bilberry (*Vaccinium myrtillus*), Greater Woodrush (*Luzula sylvatica*) and Buckler Ferns (*Dryopteris affinis, D. aemula*) occurring in one place. Irish Spurge (*Euphorbia hyberna*) continues eastwards on acid rocks from its headquarters to the west but there are many plants of richer soils, for example Wood Violet (*Viola reichenbachiana*), Goldilocks (*Ranunculus auricomus*), Broad-leaved Helleborine (*Epipactis helleborine*) and Red Campion (*Silene dioica*). Oak woodland is also found in Rincrew, Carrigane, Glendine, Newport and Dromana. The spread of Rhododendron is locally a problem, as is over-grazing. A few limestone rocks stand over the river in places showing traces of a less acidic woodland type with Ash, False Brome (*Brachypodium sylvaticum*) and Early-purple Orchid (*Orchis mascula*).

In the vicinity of Lismore, two deep valleys cut in Old Red Sandstone join to form the Owenashad River before flowing into the Blackwater at Lismore. These valleys retain something close to their original cover of Oak with Downy Birch (*Betula pubescens*), Holly and Hazel (*Corylus avellana*) also occurring. There has been much planting of Beech (as well as some of coniferous species) among the Oak on the shallower slopes and here both Rhododendron and Cherry Laurel (*Prunus laurocerasus*) have invaded the woodland.

The Oak wood community in the Lismore and Glenmore valleys is of the classical upland type, in which some Rowan (*Sorbus aucuparia*) and Downy Birch occur. Honeysuckle (*Lonicera periclymenum*) and Ivy (*Hedera helix*) cover many of the trees while Greater Woodrush, Bluebell (*Hyacinthoides non-scripta*), Wood Sorrel (*Oxalis acetosella*) and, locally, Bilberry dominate the ground flora. Ferns present on the site include Hard Fern (*Blechnum spicant*), Male Fern (*Dryopteris filix-mas*), Buckler Ferns (*D. dilatata, D. aemula*) and Lady Fern (*Athyrium felix-femina*). There are many mosses present and large species such as *Rhytidiadelphus* spp., *Polytrichum formosum, Mnium hornum* and *Dicranum* spp. are noticeable. The lichen flora is important and includes 'old forest' species which imply a continuity of woodland here since ancient times. Tree Lungwort (*Lobaria* spp.) is the most conspicuous and is widespread.

The Araglin valley consists predominantly of broadleaved woodland. Oak and Beech are joined by Hazel, Wild Cherry (*Prunus avium*) and Goat Willow (*Salix caprea*). The ground flora is relatively rich with Pignut (*Conopodium majus*), Wild Garlic (*Allium ursinum*), Garlic Mustard (*Alliaria petiolata*) and Wild Strawberry (*Fragaria vesca*). The presence of Ivy Broomrape (*Orobanche hederae*), a local species within Ireland, suggests that the woodland, along with its attendant Ivy is long established.

Along the lower reaches of the Awbeg River, the valley sides are generally cloaked with mixed deciduous woodland of estate origin. The dominant species is Beech, although a range of other species are also present, e.g. Sycamore (*Acer pseudoplatanus*), Ash and Horse-chestnut (*Aesculus hippocastanum*). In places the alien invasive species, Cherry Laurel, dominates the understorey. Parts of the woodlands are more semi-natural in composition, being dominated by Ash with Hawthorn (*Crataegus monogyna*) and Spindle (*Euonymus europaea*) also present. However, the most natural areas of woodland appear to be the wet areas dominated by Alder and willows (*Salix* spp.). The ground flora of the dry woodland areas features species such as Pignut, Wood Avens (*Geum urbanum*), Ivy and Soft Shield-fern (*Polystichum setiferum*), while the ground flora of the wet woodland areas contains characteristic species such as Remote Sedge (*Carex remota*) and Opposite-leaved Golden-saxifrage (*Chrysosplenium oppositifolium*).

In places along the upper Bride, scrubby, semi-natural deciduous woodland of Willow, Oak and Rowan occurs with abundant Great Woodrush in the ground flora.

The Bunaglanna River passes down a very steep valley, flowing in a north-south direction to meet the Bride River. It flows through blanket bog to heath and then scattered woodland. The higher levels of moisture here enable a vigorous moss and fern community to flourish, along with a well-developed epiphyte community on the tree trunks and branches.

At Banteer a type of wetland occurs near the railway line which offers a complete contrast to the others. Old turf banks are colonised by Royal Fern (*Osmunda regalis*) and Eared Willow (*Salix aurita*) and between them there is a sheet of Bottle Sedge (*Carex rostrata*), Marsh Cinquefoil (*Potentilla palustris*), Bogbean (*Menyanthes trifoliata*), Marsh St. John's-wort (*Hypericum elodes*) and the mosses *Sphagnum auriculatum* and *Aulacomnium palustre*. The cover is a scraw with characteristic species like Marsh Willowherb (*Epilobium palustre*) and Marsh Orchid (*Dactylorhiza incarnata*).

The soil high up the Lismore valleys and in rocky places is poor in nutrients but it becomes richer where streams enter and also along the valley bottoms. In such sites Wood Speedwell (*Veronica montana*), Wood Anemone (*Anemone nemorosa*), Enchanter's Nightshade (*Circaea lutetiana*), Barren Strawberry (*Potentilla sterilis*) and Shield Fern occur. There is some Wild Garlic, Three-nerved Sandwort (*Moehringia trinervia*) and Early-purple Orchid (*Orchis mascula*) locally, with Opposite-leaved Golden-saxifrage, Meadowsweet and Bugle in wet places. A Hazel stand at the base of the Glenakeeffe valley shows this community well.

The area has been subject to much tree felling in the recent past and re-sprouting stumps have given rise to areas of bushy Hazel, Holly, Rusty Willow (*Salix cinerea* subsp. *oleifoila*) and Downy Birch. The ground in the clearings is heathy with Heather (*Calluna vulgaris*), Slender St John's-wort (*Hypericum pulchrum*) and the occasional Broom (*Cytisus scoparius*) occurring.

The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. Very extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. The main expanses occur at the southern end of the site with the best examples at Kinsalebeg in Co. Waterford and between Youghal and the main bridge north of it across the river in Co. Cork. Other areas occur along the tributaries of the Licky in east Co. Waterford and Glendine, Newport, Bride and Killahaly Rivers in Waterford west of the Blackwater and large tracts along the Tourig River in Co. Cork. There are narrow bands of intertidal flats along the main river as far north as Camphire Island. Patches of green algae (filamentous, *Ulva* species and *Enteromorpha* sp.) occur in places, while fucoid algae are common on the more stony flats even as high upstream as Glenassy or Coneen.

The area of saltmarsh within the site is small. The best examples occur at the mouths of the tributaries and in the townlands of Foxhole and Blackbog. Those found are generally characteristic of Atlantic salt meadows. The species list at Foxhole consists of Common Saltmarsh-grass (*Puccinellia maritima*), small amounts of Greater Sea-spurrey (*Spergularia media*), Glasswort (*Salicornia* sp.), Sea Arrowgrass (*Triglochin maritima*), Annual Sea-blite (*Suaeda maritima*) and Sea Purslane (*Halimione portulacoides*) - the latter a very recent coloniser - at the edges. Some Sea Aster (*Aster tripolium*) occurs, generally with Creeping Bent (*Agrostis stolonifera*). Sea Couch-grass (*Elymus pycnanthus*) and small isolated clumps of Sea Club-rush (*Scirpus maritimus*) are also seen. On the Tourig River additional saltmarsh species found include Lavender (*Limonium* spp.), Sea Thrift (*Armeria maritima*), Red Fescue (*Festuca rubra*), Common Scurvy-grass (*Cochlearia officinalis*) and Sea Plantain (*Plantago maritima*). Oraches (*Atriplex* spp.) are found on channel edges.

The shingle spit at Ferrypoint supports a good example of perennial vegetation of stony banks. The spit is composed of small stones and cobbles and has a well developed and diverse flora. At the lowest part, Sea Beet (*Beta vulgaris*), Curled Dock (*Rumex crispus*) and Yellow-horned Poppy (*Glaucium flavum*) occur with at a slightly higher level Sea Mayweed (*Tripleurospermum maritimum*), Cleavers (*Galium aparine*), Rock Samphire (*Crithmum maritimum*), Sandwort (*Honkenya peploides*), Spear-leaved Orache (*Atriplex prostrata*) and Babington's Orache (*A. glabriuscula*). Other species present include Sea Rocket (*Cakile maritima*), Herb Robert (*Geranium robertianum*), Red Fescue (*Festuca rubra*) and Kidney Vetch (*Anthyllis vulneraria*). The top of the spit is more vegetated and includes lichens and bryophytes (including *Tortula ruraliformis* and *Rhytidiadelphus squarrosus*).

The site supports several Red Data Book plant species, i.e. Starved Wood Sedge (*Carex depauperata*), Killarney Fern (*Trichomanes speciosum*), Pennyroyal (*Mentha pulegium*), Bird's-nest Orchid (*Neottia nidus-avis,* Golden Dock (*Rumex maritimus*) and Bird Cherry (*Prunus padus*). The first three of these are also protected under the

Flora (Protection) Order 1999. The following plants, relatively rare nationally, are also found within the site: Toothwort (*Lathraea squamaria*) associated with woodlands on the Awbeg and Blackwater; Summer Snowflake (*Leucojum aestivum*) and Flowering Rush (*Butomus umbellatus*) on the Blackwater; Common Calamint (*Calamintha ascendens*), Red Campion (*Silene dioica*), Sand Leek (*Allium scorodoprasum*) and Wood Club-rush (*Scirpus sylvaticus*) on the Awbeg.

The site is also important for the presence of several Habitats Directive Annex II animal species, including Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*L. fluviatilis*), Twaite Shad (*Alosa fallax fallax*), Freshwater Pearl-mussel (*Margaritifera margaritifera*), Otter (*Lutra lutra*) and Salmon (*Salmo salar*). The Awbeg supports a population of White-clawed Crayfish (*Austropotamobius pallipes*). This threatened species has been recorded from a number of locations and its remains are also frequently found in Otter spraints, particularly in the lower reaches of the river. The freshwater stretches of the Blackwater and Bride Rivers are designated salmonid rivers.

The Blackwater is noted for its enormous run of salmon over the years. The river is characterised by mighty pools, lovely streams, glides and generally, a good push of water coming through except in very low water. Spring salmon fishing can be carried out as far upstream as Fermoy and is very highly regarded especially at Careysville. The Bride, main Blackwater upstream of Fermoy and some of the tributaries are more associated with grilse fishing.

The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. The bat species Natterer's Bat, Daubenton's Bat, Whiskered Bat, Brown Long-eared Bat and Pipistrelle, are to be seen feeding along the river, roosting under the old bridges and in old buildings.

Common Frog, a Red Data Book species that is also legally protected (Wildlife Act, 1976), occurs throughout the site. The rare bush cricket, *Metrioptera roselii* (Orthoptera: Tettigoniidae), has been recorded in the reed/willow vegetation of the river embankment on the Lower Blackwater River. The Swan Mussel (*Anodonta cygnea*), a scarce species nationally, occurs at a few sites along the freshwater stretches of the Blackwater.

Several bird species listed on Annex I of the E.U. Birds Directive are found on the site. Some use it as a staging area, others are vagrants, while others use it more regularly. Internationally important numbers of Whooper Swan (average peak 174, 1994/95-95/96) and nationally important numbers Bewick's Swan (average peak 35, 1994/95-95/96) use the Blackwater Callows. Golden Plover occur in regionally important numbers on the Blackwater Estuary (average peak 885, 1984/85-86/87) and on the River Bride (absolute max. 2141, 1994/95). Staging Terns visit the site annually (Sandwich Tern (>300) and Arctic/Common Tern (>200), average peak 1974-1994). The site also supports populations of the following: Red Throated Diver, Great Northern Diver, Barnacle Goose, Ruff, Wood Sandpiper and Greenland White-fronted Goose. Three breeding territories for Peregrine Falcon are known along the Blackwater Valley. This, the Awbeg and the Bride River are also thought to support at

least 30 pairs of Kingfisher. Little Egret now breed at the site (12 pairs in 1997, 19 pairs in 1998) and this represents about 90% of the breeding population in Ireland.

The site holds important numbers of wintering waterfowl. Both the Blackwater Callows and the Blackwater Estuary Special Protection Areas (SPAs) hold internationally important numbers of Black-tailed Godwit (average peak 847, 1994/95-95/96 on the callows, average peak 845, 1974/75-93/94 in the estuary). The Blackwater Callows also hold Wigeon (average peak 2752), Teal (average peak 1316), Mallard (average peak 427), Shoveler (average peak 28), Lapwing (average peak 880), Curlew (average peak 416) and Black-headed Gull (average peak 396) (counts from 1994/95-95/96). Numbers of birds using the Blackwater Estuary, given as the mean of the highest monthly maxima over 20 years (1974-94), are Shelduck (137 +10 breeding pairs), Wigeon (780), Teal (280), Mallard (320 + 10 breeding pairs), Goldeneye (11-97), Oystercatcher (340), Ringed Plover (50 + 4 breeding pairs), Grey Plover (36), Lapwing (1680), Knot (150), Dunlin (2293), Snipe (272), Black-tailed Godwit (845), Bar-tailed Godwit (130), Curlew (920), Redshank (340), Turnstone (130), Black-headed Gull (4000) and Lesser Black-backed Gull (172). The greatest numbers (75%) of the wintering waterfowl of the estuary are located in the Kinsalebeg area on the east of the estuary in Co. Waterford. The remainder are concentrated along the Tourig Estuary on the Co. Cork side.

The river and river margins also support many Heron, non-breeding Cormorant and Mute Swan (average peak 53, 1994/95-95/96 in the Blackwater Callows). Heron occurs all along the Bride and Blackwater Rivers - 2 or 3 pairs at Dromana Rock; *c*. 25 pairs in the woodland opposite; 8 pairs at Ardsallagh Wood and *c*. 20 pairs at Rincrew Wood have been recorded. Some of these are quite large and significant heronries. Significant numbers of Cormorant are found north of the bridge at Youghal and there are some important roosts present at Ardsallagh Wood, downstream of Strancally Castle and at the mouth of the Newport River. Of note are the high numbers of wintering Pochard (e.g. 275 individuals in 1997) found at Ballyhay quarry on the Awbeg, the best site for Pochard in County Cork.

Other important species found within the site include Long-eared Owl, which occurs all along the Blackwater River, and Barn Owl, a Red Data Book species, which is found in some old buildings and in Castlehyde west of Fermoy. Reed Warbler, a scarce breeding species in Ireland, was found for the first time in the site in 1998 at two locations. It is not known whether or not this species breeds on the site, although it is known to nearby to the south of Youghal. Dipper occurs on the rivers.

Landuse at the site is mainly centred on agricultural activities. The banks of much of the site and the callows, which extend almost from Fermoy to Cappoquin, are dominated by improved grasslands which are drained and heavily fertilised. These areas are grazed and used for silage production. Slurry is spread over much of this area. Arable crops are grown. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of Habitats Directive Annex II animal species within it. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the Blackwater and its tributaries and there are a number of Angler Associations, some with a number of

beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. Other recreational activities such as boating, golfing and walking are also popular. Water skiing is carried out at Villierstown. Parts of Doneraile Park and Anne's Grove are included in the site: both areas are primarily managed for amenity purposes. There is some hunting of game birds and Mink within the site. Ballyhay quarry is still actively quarried for sand and gravel. Several industrial developments, which discharge into the river, border the site.

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, overgrazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel.

Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively; furthermore it is of high conservation value for the populations of bird species that use it. Two Special Protection Areas, designated under the E.U. Birds Directive, are also located within the site - Blackwater Callows and Blackwater Estuary. Additionally, the importance of the site is enhanced by the presence of a suite of uncommon plant species.

13.09.2006

Cork County

Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost
Cork North		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000
Cork South		
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000
Cobh/ Midleton/ 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
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000
		41,274,000

Schemes to start 2007	W/S	Est. Cost
Cork North		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000
Cork West		
Skibbereen Sewerage Scheme	S	20,000,000
		25,150,000

Schemes to start 2008	W/S	Est. Cost
Cork North		
Mallow/ Ballyviniter Regional Water Supply Scheme (H)	W	8,652,000
Mallow Sewerage Scheme (H)	S	5,408,000
Cork South		
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
Cork West		
Bantry Sewerage Scheme	S	7,148,000
Dunmanway Sewerage Scheme	S	2,153,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000
Schull Water Supply Scheme	W	5,253,000
		61,137,000

Schemes to start 2009	W/S	Est. Cost
Cork North		
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

Schemes to start 2009 contd.	W/S	Est. Cost
Cork South		
Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000
Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000
Shannagarry/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000
Youghal Sewerage Scheme	S	14,420,000
Cork West		
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
		164,629,000

Serviced Land Initiative	W/S	Est. Cost
Cork North		
Ballyclough Water Supply Scheme	W	139,000
Ballyhooley Improvement Scheme	W/S	139,000
Broghal-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
Rathcormac 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
Cork South		
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
Blarney 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
Kerrypike Sewerage Scheme	S	832,000
Kerrypike 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
Midleton Wastewater Treatment Plant Extension	S	4,050,000

Cork County contd.

Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost
Cork South contd.		
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000
North Cobh Sewerage Scheme (G)	S	3,193,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000
Rochestown Water Supply Scheme	W	2,700,000
Saleen Sewerage Scheme	S	1,051,000
Youghal Water Supply Scheme	W	2,300,000
Cork West		
Castletownshend Sewerage Scheme	S	1,576,000
		50,797,000
Rural Towns & Villages Initiative		
Cork North		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000
Cork South		
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000
Cork West		
Ballylicky Sewerage Scheme	S	2,753,000
Baltimore Sewerage Scheme	S	3,762,000
Castletownbere Sewerage Scheme	S	5,202,000
Schull Sewerage Scheme	S	3,523,000
		24,950,000
Schemes to Advance through Planning		
Cork North		
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000
Mitchelstown Sewerage Scheme	S	3,000,000
Newmarket Sewerage Scheme	S	3,152,000

Schemes to Advance through Planning cond.	W/S	Est. Cost
Cork South		
Carrigtwohill Sewerage Scheme (G)	S	20,000,000
Cork Sludge Management (G)	S	14,420,000
Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Inniscarra Water Treatment Plant (Sludge Treatment)(G)	W	5,356,000
Macroom Sewerage Scheme	S	5,150,000
Minane Bridge Water Supply Scheme	W	1,421,000
Cork West		
Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
Cape Clear Water Supply Scheme	W	1,679,000
Castletownbere Regional Water Supply Scheme	W	8,405,000
Glengarriff Sewerage Scheme	S	2,500,000
Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
		95,646,000
Water Conservation Allocation		**12,206,000**
Asset Management Study		**300,000**
South Western River Basin District (WFD) Project[1]		**9,400,000**
Programme Total		**485,489,000**

[1] 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

SITE SYNOPSIS

SITE NAME: BLACKWATER RIVER (CORK/WATERFORD)

SITE CODE: 002170

The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. In times of heavy rainfall the levels can fluctuate widely by more than 12 feet on the gauge at Careysville. The peaty nature of the terrain in the upper reaches and of some of the tributaries gives the water a pronounced dark colour. The site consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond, the tidal stretches as far as Youghal Harbour and many tributaries, the larger of which includes the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The extent of the Blackwater and its tributaries in this site, flows through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. Towns along, but not in the site, include Rathmore, Millstreet, Kanturk, Banteer, Mallow, Buttevant, Doneraile, Castletownroche, Fermoy, Ballyduff, Rathcormac, Tallow, Lismore, Cappoquin and Youghal.

The Blackwater rises in boggy land of east Kerry, where Namurian grits and shales build the low heather-covered plateaux. Near Kanturk the plateaux enclose a basin of productive Coal Measures. On leaving the Namurian rocks the Blackwater turns eastwards along the northern slopes of the Boggeraghs before entering the narrow limestone strike vale at Mallow. The valley deepens as first the Nagles Mountains and then the Knockmealdowns impinge upon it. Interesting geological features along this stretch of the Blackwater Valley include limestone cliffs and caves near the villages and small towns of Killavullen and Ballyhooly; the Killavullen caves contain fossil material from the end of the glacial period. The associated basic soils in this area support the growth of plant communities which are rare in Cork because in general the county's rocks are acidic. At Cappoquin the river suddenly turns south and cuts through high ridges of Old Red Sandstone. The Araglin valley is predominantly underlain by sandstone, with limestone occurring in the lower reaches near Fermoy.

The site is a candidate SAC selected for alluvial wet woodlands and Yew wood, both priority habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for floating river vegetation, estuaries, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, perennial vegetation of stony banks and old Oak woodlands, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter and the plant, Killarney Fern.

Wet woodlands are found where river embankments, particularly on the River Bride, have broken down and where the channel edges in the steep-sided valley between Cappoquin and Youghal are subject to daily inundation. The river side of the embankments was often used for willow growing in the past (most recently at Cappoquin) so that the channel is lined by narrow woods of White and Almond-leaved Willow (*Salix alba* and *S. triandra*) with isolated Crack Willow (*S. fragilis*) and Osier (*S. viminalis*). Grey Willow (*S. cinerea*) spreads naturally into the sites and occasionally, as at Villierstown on the Blackwater and Sapperton on the Bride, forms woods with a distinctive mix of woodland and marsh plants, including Gypsywort (*Lycopus europaeus*), Guelder Rose (*Viburnum opulus*), Bittersweet (*Solanum dulcamara*) and various mosses and algae. These wet woodlands form one of the most extensive tracts of the wet woodland habitat in the country.

A small stand of Yew (*Taxus baccata*) woodland, a rare habitat in Ireland and the EU, occurs within the site. This is on a limestone ridge at Dromana, near Villierstown. While there are some patches of the wood with a canopy of Yew and some very old trees, the quality is generally poor due to the dominance of non-native and invasive species such as Sycamore, Beech and Douglas Fir (*Pseudotsuga menzsisii*). However, the future prospect for this Yew wood is good as the site is proposed for restoration under a Coillte EU Life Programme. Owing to its rarity, Yew woodland is listed with priority status on Annex I of the EU Habitats Directive.

Marshes and reedbeds cover most of the flat areas beside the rivers and often occur in mosaic with the wet woodland. Common Reed (*Phragmites australis*) is ubiquitous and is harvested for thatching. There is also much Marsh Marigold (*Caltha palustris*) and, at the edges of the reeds, the Greater and Lesser Pond-sedge (*Carex riparia* and *C. acutiformis*). Hemlock Water-dropwort (*Oenanthe crocata*), Wild Angelica (*Angelica sylvestris*), Reed Canary-grass (*Phalaris arundinacea*), Meadowsweet (*Filipendula ulmaria*), Nettle (*Urtica dioica*), Purple Loosestrife (*Lythrum salicaria*), Marsh Valerian (*Valeriana officinalis*), Water Mint (*Mentha aquatica*) and Water Forget-me-not (*Myosotis scorpioides*).

At Banteer there are a number of hollows in the sediments of the floodplain where subsidence and subterranean drainage have created isolated wetlands, sunk below the level of the surrounding fields. The water rises and falls in these holes depending on the watertable and several different communities have developed on the acidic or neutral sediments. Many of the ponds are ringed about with Grey Willows, rooted in the mineral soils but sometimes collapsed into the water. Beneath the densest stands are woodland herbs like Yellow Pimpernel (*Lysimachia nemorum*) with locally abundant Starwort (*Callitriche stagnalis*) and Marsh Ragwort (*Senecio palustris*). One of the depressions has Silver Birch (*Betula pendula*), Ash (*Fraxinus excelsior*), Crab Apple (*Malus sylvestris*) and a little Oak (*Quercus robur*) in addition to the willows.

Floating river vegetation is found along much of the freshwater stretches within the site. The species list is quite extensive and includes Pond Water-crowfoot (*Ranunculus peltatus*), Water-crowfoot (*Ranunculus* spp.), Canadian Pondweed (*Elodea canadensis*), Broad-leaved Pondweed (*Potamogeton natans*), Pondweed (*Potamogeton* spp.), Water Milfoil (*Myriophyllum* spp.), Common Club-rush (*Scirpus*

lacustris), Water-starwort (*Callitriche* spp.), Lesser Water-parsnip (*Berula erecta*) particularly on the Awbeg, Water-cress (*Nasturtium officinale*), Hemlock Water-dropwort, Fine-leaved Water-dropwort (*O. aquatica*), Common Duckweed (*Lemna minor*), Yellow Water-lily (*Nuphar lutea*), Unbranched Bur-reed (*Sparganium emersum*) and the moss *Fontinalis antipyretica*.

The grassland adjacent to the rivers of the site is generally heavily improved, although liable to flooding in many places. However, fields of more species-rich wet grassland with species such as Yellow-flag (*Iris pseudacorus),* Meadow-sweet, Meadow Buttercup (*Ranunculus acris*) and rushes (*Juncus* spp.) occur occasionally. Extensive fields of wet grassland also occur at Annagh Bog on the Awbeg. These fields are dominated by Tufted Hair-grass (*Deschampsia cespitosa*) and rushes.

The Blackwater Valley has a number of dry woodlands; these have mostly been managed by the estates in which they occur, frequently with the introduction of Beech (*Fagus sylvatica*) and a few conifers, and sometimes of Rhododendron (*Rhododendron ponticum*) and Laurel. Oak woodland is well developed on sandstone about Ballinatray, with the acid Oak woodland community of Holly (*Ilex aquifolium*), Bilberry (*Vaccinium myrtillus*), Greater Woodrush (*Luzula sylvatica*) and Buckler Ferns (*Dryopteris affinis, D. aemula*) occurring in one place. Irish Spurge (*Euphorbia hyberna*) continues eastwards on acid rocks from its headquarters to the west but there are many plants of richer soils, for example Wood Violet (*Viola reichenbachiana*), Goldilocks (*Ranunculus auricomus*), Broad-leaved Helleborine (*Epipactis helleborine*) and Red Campion (*Silene dioica*). Oak woodland is also found in Rincrew, Carrigane, Glendine, Newport and Dromana. The spread of Rhododendron is locally a problem, as is over-grazing. A few limestone rocks stand over the river in places showing traces of a less acidic woodland type with Ash, False Brome (*Brachypodium sylvaticum*) and Early-purple Orchid (*Orchis mascula*).

In the vicinity of Lismore, two deep valleys cut in Old Red Sandstone join to form the Owenashad River before flowing into the Blackwater at Lismore. These valleys retain something close to their original cover of Oak with Downy Birch (*Betula pubescens*), Holly and Hazel (*Corylus avellana*) also occurring. There has been much planting of Beech (as well as some of coniferous species) among the Oak on the shallower slopes and here both Rhododendron and Cherry Laurel (*Prunus laurocerasus*) have invaded the woodland.

The Oak wood community in the Lismore and Glenmore valleys is of the classical upland type, in which some Rowan (*Sorbus aucuparia*) and Downy Birch occur. Honeysuckle (*Lonicera periclymenum*) and Ivy (*Hedera helix*) cover many of the trees while Greater Woodrush, Bluebell (*Hyacinthoides non-scripta*), Wood Sorrel (*Oxalis acetosella*) and, locally, Bilberry dominate the ground flora. Ferns present on the site include Hard Fern (*Blechnum spicant*), Male Fern (*Dryopteris filix-mas*), Buckler Ferns (*D. dilatata, D. aemula*) and Lady Fern (*Athyrium felix-femina*). There are many mosses present and large species such as *Rhytidiadelphus* spp., *Polytrichum formosum, Mnium hornum* and *Dicranum* spp. are noticeable. The lichen flora is important and includes 'old forest' species which imply a continuity of woodland here since ancient times. Tree Lungwort (*Lobaria* spp.) is the most conspicuous and is widespread.

The Araglin valley consists predominantly of broadleaved woodland. Oak and Beech are joined by Hazel, Wild Cherry (*Prunus avium*) and Goat Willow (*Salix caprea*). The ground flora is relatively rich with Pignut (*Conopodium majus*), Wild Garlic (*Allium ursinum*), Garlic Mustard (*Alliaria petiolata*) and Wild Strawberry (*Fragaria vesca*). The presence of Ivy Broomrape (*Orobanche hederae*), a local species within Ireland, suggests that the woodland, along with its attendant Ivy is long established.

Along the lower reaches of the Awbeg River, the valley sides are generally cloaked with mixed deciduous woodland of estate origin. The dominant species is Beech, although a range of other species are also present, e.g. Sycamore (*Acer pseudoplatanus*), Ash and Horse-chestnut (*Aesculus hippocastanum*). In places the alien invasive species, Cherry Laurel, dominates the understorey. Parts of the woodlands are more semi-natural in composition, being dominated by Ash with Hawthorn (*Crataegus monogyna*) and Spindle (*Euonymus europaea*) also present. However, the most natural areas of woodland appear to be the wet areas dominated by Alder and willows (*Salix* spp.). The ground flora of the dry woodland areas features species such as Pignut, Wood Avens (*Geum urbanum*), Ivy and Soft Shield-fern (*Polystichum setiferum*), while the ground flora of the wet woodland areas contains characteristic species such as Remote Sedge (*Carex remota*) and Opposite-leaved Golden-saxifrage (*Chrysosplenium oppositifolium*).

In places along the upper Bride, scrubby, semi-natural deciduous woodland of Willow, Oak and Rowan occurs with abundant Great Woodrush in the ground flora.

The Bunaglanna River passes down a very steep valley, flowing in a north-south direction to meet the Bride River. It flows through blanket bog to heath and then scattered woodland. The higher levels of moisture here enable a vigorous moss and fern community to flourish, along with a well-developed epiphyte community on the tree trunks and branches.

At Banteer a type of wetland occurs near the railway line which offers a complete contrast to the others. Old turf banks are colonised by Royal Fern (*Osmunda regalis*) and Eared Willow (*Salix aurita*) and between them there is a sheet of Bottle Sedge (*Carex rostrata*), Marsh Cinquefoil (*Potentilla palustris*), Bogbean (*Menyanthes trifoliata*), Marsh St. John's-wort (*Hypericum elodes*) and the mosses *Sphagnum auriculatum* and *Aulacomnium palustre*. The cover is a scraw with characteristic species like Marsh Willowherb (*Epilobium palustre*) and Marsh Orchid (*Dactylorhiza incarnata*).

The soil high up the Lismore valleys and in rocky places is poor in nutrients but it becomes richer where streams enter and also along the valley bottoms. In such sites Wood Speedwell (*Veronica montana*), Wood Anemone (*Anemone nemorosa*), Enchanter's Nightshade (*Circaea lutetiana*), Barren Strawberry (*Potentilla sterilis*) and Shield Fern occur. There is some Wild Garlic, Three-nerved Sandwort (*Moehringia trinervia*) and Early-purple Orchid (*Orchis mascula*) locally, with Opposite-leaved Golden-saxifrage, Meadowsweet and Bugle in wet places. A Hazel stand at the base of the Glenakeeffe valley shows this community well.

The area has been subject to much tree felling in the recent past and re-sprouting stumps have given rise to areas of bushy Hazel, Holly, Rusty Willow (*Salix cinerea* subsp. *oleifoila*) and Downy Birch. The ground in the clearings is heathy with Heather (*Calluna vulgaris*), Slender St John's-wort (*Hypericum pulchrum*) and the occasional Broom (*Cytisus scoparius*) occurring.

The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. Very extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. The main expanses occur at the southern end of the site with the best examples at Kinsalebeg in Co. Waterford and between Youghal and the main bridge north of it across the river in Co. Cork. Other areas occur along the tributaries of the Licky in east Co. Waterford and Glendine, Newport, Bride and Killahaly Rivers in Waterford west of the Blackwater and large tracts along the Tourig River in Co. Cork. There are narrow bands of intertidal flats along the main river as far north as Camphire Island. Patches of green algae (filamentous, *Ulva* species and *Enteromorpha* sp.) occur in places, while fucoid algae are common on the more stony flats even as high upstream as Glenassy or Coneen.

The area of saltmarsh within the site is small. The best examples occur at the mouths of the tributaries and in the townlands of Foxhole and Blackbog. Those found are generally characteristic of Atlantic salt meadows. The species list at Foxhole consists of Common Saltmarsh-grass (*Puccinellia maritima*), small amounts of Greater Sea-spurrey (*Spergularia media*), Glasswort (*Salicornia* sp.), Sea Arrowgrass (*Triglochin maritima*), Annual Sea-blite (*Suaeda maritima*) and Sea Purslane (*Halimione portulacoides*) - the latter a very recent coloniser - at the edges. Some Sea Aster (*Aster tripolium*) occurs, generally with Creeping Bent (*Agrostis stolonifera*). Sea Couch-grass (*Elymus pycnanthus*) and small isolated clumps of Sea Club-rush (*Scirpus maritimus*) are also seen. On the Tourig River additional saltmarsh species found include Lavender (*Limonium* spp.), Sea Thrift (*Armeria maritima*), Red Fescue (*Festuca rubra*), Common Scurvy-grass (*Cochlearia officinalis*) and Sea Plantain (*Plantago maritima*). Oraches (*Atriplex* spp.) are found on channel edges.

The shingle spit at Ferrypoint supports a good example of perennial vegetation of stony banks. The spit is composed of small stones and cobbles and has a well developed and diverse flora. At the lowest part, Sea Beet (*Beta vulgaris*), Curled Dock (*Rumex crispus*) and Yellow-horned Poppy (*Glaucium flavum*) occur with at a slightly higher level Sea Mayweed (*Tripleurospermum maritimum*), Cleavers (*Galium aparine*), Rock Samphire (*Crithmum maritimum*), Sandwort (*Honkenya peploides*), Spear-leaved Orache (*Atriplex prostrata*) and Babington's Orache (*A. glabriuscula*). Other species present include Sea Rocket (*Cakile maritima*), Herb Robert (*Geranium robertianum*), Red Fescue (*Festuca rubra*) and Kidney Vetch (*Anthyllis vulneraria*). The top of the spit is more vegetated and includes lichens and bryophytes (including *Tortula ruraliformis* and *Rhytidiadelphus squarrosus*).

The site supports several Red Data Book plant species, i.e. Starved Wood Sedge (*Carex depauperata*), Killarney Fern (*Trichomanes speciosum*), Pennyroyal (*Mentha pulegium*), Bird's-nest Orchid (*Neottia nidus-avis,* Golden Dock (*Rumex maritimus*) and Bird Cherry (*Prunus padus*). The first three of these are also protected under the

Flora (Protection) Order 1999. The following plants, relatively rare nationally, are also found within the site: Toothwort (*Lathraea squamaria*) associated with woodlands on the Awbeg and Blackwater; Summer Snowflake (*Leucojum aestivum*) and Flowering Rush (*Butomus umbellatus*) on the Blackwater; Common Calamint (*Calamintha ascendens*), Red Campion (*Silene dioica*), Sand Leek (*Allium scorodoprasum*) and Wood Club-rush (*Scirpus sylvaticus*) on the Awbeg.

The site is also important for the presence of several Habitats Directive Annex II animal species, including Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*L. fluviatilis*), Twaite Shad (*Alosa fallax fallax*), Freshwater Pearl-mussel (*Margaritifera margaritifera*), Otter (*Lutra lutra*) and Salmon (*Salmo salar*). The Awbeg supports a population of White-clawed Crayfish (*Austropotamobius pallipes*). This threatened species has been recorded from a number of locations and its remains are also frequently found in Otter spraints, particularly in the lower reaches of the river. The freshwater stretches of the Blackwater and Bride Rivers are designated salmonid rivers.

The Blackwater is noted for its enormous run of salmon over the years. The river is characterised by mighty pools, lovely streams, glides and generally, a good push of water coming through except in very low water. Spring salmon fishing can be carried out as far upstream as Fermoy and is very highly regarded especially at Careysville. The Bride, main Blackwater upstream of Fermoy and some of the tributaries are more associated with grilse fishing.

The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. The bat species Natterer's Bat, Daubenton's Bat, Whiskered Bat, Brown Long-eared Bat and Pipistrelle, are to be seen feeding along the river, roosting under the old bridges and in old buildings.

Common Frog, a Red Data Book species that is also legally protected (Wildlife Act, 1976), occurs throughout the site. The rare bush cricket, *Metrioptera roselii* (Orthoptera: Tettigoniidae), has been recorded in the reed/willow vegetation of the river embankment on the Lower Blackwater River. The Swan Mussel (*Anodonta cygnea*), a scarce species nationally, occurs at a few sites along the freshwater stretches of the Blackwater.

Several bird species listed on Annex I of the E.U. Birds Directive are found on the site. Some use it as a staging area, others are vagrants, while others use it more regularly. Internationally important numbers of Whooper Swan (average peak 174, 1994/95-95/96) and nationally important numbers Bewick's Swan (average peak 35, 1994/95-95/96) use the Blackwater Callows. Golden Plover occur in regionally important numbers on the Blackwater Estuary (average peak 885, 1984/85-86/87) and on the River Bride (absolute max. 2141, 1994/95). Staging Terns visit the site annually (Sandwich Tern (>300) and Arctic/Common Tern (>200), average peak 1974-1994). The site also supports populations of the following: Red Throated Diver, Great Northern Diver, Barnacle Goose, Ruff, Wood Sandpiper and Greenland White-fronted Goose. Three breeding territories for Peregrine Falcon are known along the Blackwater Valley. This, the Awbeg and the Bride River are also thought to support at

least 30 pairs of Kingfisher. Little Egret now breed at the site (12 pairs in 1997, 19 pairs in 1998) and this represents about 90% of the breeding population in Ireland.

The site holds important numbers of wintering waterfowl. Both the Blackwater Callows and the Blackwater Estuary Special Protection Areas (SPAs) hold internationally important numbers of Black-tailed Godwit (average peak 847, 1994/95-95/96 on the callows, average peak 845, 1974/75-93/94 in the estuary). The Blackwater Callows also hold Wigeon (average peak 2752), Teal (average peak 1316), Mallard (average peak 427), Shoveler (average peak 28), Lapwing (average peak 880), Curlew (average peak 416) and Black-headed Gull (average peak 396) (counts from 1994/95-95/96). Numbers of birds using the Blackwater Estuary, given as the mean of the highest monthly maxima over 20 years (1974-94), are Shelduck (137 +10 breeding pairs), Wigeon (780), Teal (280), Mallard (320 + 10 breeding pairs), Goldeneye (11-97), Oystercatcher (340), Ringed Plover (50 + 4 breeding pairs), Grey Plover (36), Lapwing (1680), Knot (150), Dunlin (2293), Snipe (272), Black-tailed Godwit (845), Bar-tailed Godwit (130), Curlew (920), Redshank (340), Turnstone (130), Black-headed Gull (4000) and Lesser Black-backed Gull (172). The greatest numbers (75%) of the wintering waterfowl of the estuary are located in the Kinsalebeg area on the east of the estuary in Co. Waterford. The remainder are concentrated along the Tourig Estuary on the Co. Cork side.

The river and river margins also support many Heron, non-breeding Cormorant and Mute Swan (average peak 53, 1994/95-95/96 in the Blackwater Callows). Heron occurs all along the Bride and Blackwater Rivers - 2 or 3 pairs at Dromana Rock; *c*. 25 pairs in the woodland opposite; 8 pairs at Ardsallagh Wood and *c*. 20 pairs at Rincrew Wood have been recorded. Some of these are quite large and significant heronries. Significant numbers of Cormorant are found north of the bridge at Youghal and there are some important roosts present at Ardsallagh Wood, downstream of Strancally Castle and at the mouth of the Newport River. Of note are the high numbers of wintering Pochard (e.g. 275 individuals in 1997) found at Ballyhay quarry on the Awbeg, the best site for Pochard in County Cork.

Other important species found within the site include Long-eared Owl, which occurs all along the Blackwater River, and Barn Owl, a Red Data Book species, which is found in some old buildings and in Castlehyde west of Fermoy. Reed Warbler, a scarce breeding species in Ireland, was found for the first time in the site in 1998 at two locations. It is not known whether or not this species breeds on the site, although it is known to nearby to the south of Youghal. Dipper occurs on the rivers.

Landuse at the site is mainly centred on agricultural activities. The banks of much of the site and the callows, which extend almost from Fermoy to Cappoquin, are dominated by improved grasslands which are drained and heavily fertilised. These areas are grazed and used for silage production. Slurry is spread over much of this area. Arable crops are grown. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of Habitats Directive Annex II animal species within it. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the Blackwater and its tributaries and there are a number of Angler Associations, some with a number of

beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. Other recreational activities such as boating, golfing and walking are also popular. Water skiing is carried out at Villierstown. Parts of Doneraile Park and Anne's Grove are included in the site: both areas are primarily managed for amenity purposes. There is some hunting of game birds and Mink within the site. Ballyhay quarry is still actively quarried for sand and gravel. Several industrial developments, which discharge into the river, border the site.

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, overgrazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel.

Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively; furthermore it is of high conservation value for the populations of bird species that use it. Two Special Protection Areas, designated under the E.U. Birds Directive, are also located within the site - Blackwater Callows and Blackwater Estuary. Additionally, the importance of the site is enhanced by the presence of a suite of uncommon plant species.

13.09.2006

Cork County

Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost
Cork North		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000
Cork South		
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000
Cobh/ Midleton/ 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
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000
		41,274,000

Schemes to start 2007	W/S	Est. Cost
Cork North		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000
Cork West		
Skibbereen Sewerage Scheme	S	20,000,000
		25,150,000

Schemes to start 2008	W/S	Est. Cost
Cork North		
Mallow/ Ballyviniter Regional Water Supply Scheme (H)	W	8,652,000
Mallow Sewerage Scheme (H)	S	5,408,000
Cork South		
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
Cork West		
Bantry Sewerage Scheme	S	7,148,000
Dunmanway Sewerage Scheme	S	2,153,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000
Schull Water Supply Scheme	W	5,253,000
		61,137,000

Schemes to start 2009	W/S	Est. Cost
Cork North		
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

Schemes to start 2009 contd.	W/S	Est. Cost
Cork South		
Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000
Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000
Shannagarry/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000
Youghal Sewerage Scheme	S	14,420,000
Cork West		
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
		164,629,000

Serviced Land Initiative	W/S	Est. Cost
Cork North		
Ballyclough Water Supply Scheme	W	139,000
Ballyhooley Improvement Scheme	W/S	139,000
Broghal-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
Rathcormac 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
Cork South		
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
Blarney 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
Kerrypike Sewerage Scheme	S	832,000
Kerrypike 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
Midleton Wastewater Treatment Plant Extension	S	4,050,000

Cork County contd.

Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost
Cork South contd.		
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000
North Cobh Sewerage Scheme (G)	S	3,193,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000
Rochestown Water Supply Scheme	W	2,700,000
Saleen Sewerage Scheme	S	1,051,000
Youghal Water Supply Scheme	W	2,300,000
Cork West		
Castletownshend Sewerage Scheme	S	1,576,000
		50,797,000
Rural Towns & Villages Initiative		
Cork North		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000
Cork South		
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000
Cork West		
Ballylicky Sewerage Scheme	S	2,753,000
Baltimore Sewerage Scheme	S	3,762,000
Castletownbere Sewerage Scheme	S	5,202,000
Schull Sewerage Scheme	S	3,523,000
		24,950,000
Schemes to Advance through Planning		
Cork North		
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000
Mitchelstown Sewerage Scheme	S	3,000,000
Newmarket Sewerage Scheme	S	3,152,000

Schemes to Advance through Planning cond.	W/S	Est. Cost
Cork South		
Carrigtwohill Sewerage Scheme (G)	S	20,000,000
Cork Sludge Management (G)	S	14,420,000
Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Inniscarra Water Treatment Plant (Sludge Treatment)(G)	W	5,356,000
Macroom Sewerage Scheme	S	5,150,000
Minane Bridge Water Supply Scheme	W	1,421,000
Cork West		
Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
Cape Clear Water Supply Scheme	W	1,679,000
Castletownbere Regional Water Supply Scheme	W	8,405,000
Glengarriff Sewerage Scheme	S	2,500,000
Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
		95,646,000
Water Conservation Allocation		**12,206,000**
Asset Management Study		**300,000**
South Western River Basin District (WFD) Project[1]		**9,400,000**
Programme Total		**485,489,000**

[1] 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

Cork County

Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost
Cork North		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000
Cork South		
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000
Cobh/ Midleton/ 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
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000
		41,274,000

Schemes to start 2007	W/S	Est. Cost
Cork North		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000
Cork West		
Skibbereen Sewerage Scheme	S	20,000,000
		25,150,000

Schemes to start 2008	W/S	Est. Cost
Cork North		
Mallow/ Ballyviniter Regional Water Supply Scheme (H)	W	8,652,000
Mallow Sewerage Scheme (H)	S	5,408,000
Cork South		
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
Cork West		
Bantry Sewerage Scheme	S	7,148,000
Dunmanway Sewerage Scheme	S	2,153,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000
Schull Water Supply Scheme	W	5,253,000
		61,137,000

Schemes to start 2009	W/S	Est. Cost
Cork North		
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

Schemes to start 2009 contd.	W/S	Est. Cost
Cork South		
Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000
Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000
Shannagarry/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000
Youghal Sewerage Scheme	S	14,420,000
Cork West		
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
		164,629,000

Serviced Land Initiative	W/S	Est. Cost
Cork North		
Ballyclough Water Supply Scheme	W	139,000
Ballyhooley Improvement Scheme	W/S	139,000
Broghal-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
Rathcormac 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
Cork South		
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
Blarney 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
Kerrypike Sewerage Scheme	S	832,000
Kerrypike 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
Midleton Wastewater Treatment Plant Extension	S	4,050,000

Cork County contd.

Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost
Cork South contd.		
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000
North Cobh Sewerage Scheme (G)	S	3,193,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000
Rochestown Water Supply Scheme	W	2,700,000
Saleen Sewerage Scheme	S	1,051,000
Youghal Water Supply Scheme	W	2,300,000
Cork West		
Castletownshend Sewerage Scheme	S	1,576,000
		50,797,000
Rural Towns & Villages Initiative		
Cork North		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000
Cork South		
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000
Cork West		
Ballylicky Sewerage Scheme	S	2,753,000
Baltimore Sewerage Scheme	S	3,762,000
Castletownbere Sewerage Scheme	S	5,202,000
Schull Sewerage Scheme	S	3,523,000
		24,950,000
Schemes to Advance through Planning		
Cork North		
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000
Mitchelstown Sewerage Scheme	S	3,000,000
Newmarket Sewerage Scheme	S	3,152,000

Schemes to Advance through Planning cond.	W/S	Est. Cost
Cork South		
Carrigtwohill Sewerage Scheme (G)	S	20,000,000
Cork Sludge Management (G)	S	14,420,000
Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Inniscarra Water Treatment Plant (Sludge Treatment)(G)	W	5,356,000
Macroom Sewerage Scheme	S	5,150,000
Minane Bridge Water Supply Scheme	W	1,421,000
Cork West		
Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
Cape Clear Water Supply Scheme	W	1,679,000
Castletownbere Regional Water Supply Scheme	W	8,405,000
Glengarriff Sewerage Scheme	S	2,500,000
Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
		95,646,000
Water Conservation Allocation		**12,206,000**
Asset Management Study		**300,000**
South Western River Basin District (WFD) Project[1]		**9,400,000**
Programme Total		**485,489,000**

[1] 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