Comhairle Contae Chorcaí
Cork County Council

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

To : Environmental Protection Agency,
Johnstown Castle.

19th September, 2008

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

Dear Sir/Madam,

Please find enclosed Cork Co Council's Waste Water Discharge Licence Application for the Agglomeration of **Kanturk.**

The following documentation is enclosed:

- 1 No. signed original in hardcopy
- 1 No. copy in hardcopy
- 2 No. CD-ROM with all documentation in electronic searchable PDF (OCR'd format)
- 2 No. CD-ROM with Autocad, Excel Data, Table D.2 and Table E.3.

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

Signed :

Thomas G. Stritch,
DIRECTOR OF SERVICES (Northern Division)

This is a draft document and is subject to revision.

Waste Water Discharge Licence Application Form

EPA Ref. Nº: *(Office use only)*	

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

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**

Kanturk is located approximately 13 miles North West of Mallow, in the Blackwater Valley and functions as a key support settlement. The Local Area Plan strategy aims to improve its status as an important local centre by establishing links with Millstreet and Newmarket to form a strategic growth and development focus for North West Cork.

Description of the Wastewater Treatment Works

Kanturk Wastewater Treatment Works was constructed on a green field site close to the townland of Gurteenard, south of Kanturk town. The site is approximately 1.56 hectares in area. The plant was opened in 1994 and is manned from 10.30 to 15.00 Monday to Friday.

The treatment plant was designed to cater for a population equivalent (p.e.) of 3500. In the 2006 census, the population of Kanturk was quoted as 1,915.

The design dry weather flow (DWF) for the plant is 805 m^3/day, which is based on measured flows (1973). This equates to an average flow of 33.5 m^3/hr.

Before entering the treatment plant, the wastewater flows through a pump house. Within the pump house the wastewater is screened. It is then pumped up to the treatment plant entering at the inlet flume.

At the moment the plant is capable of handling a maximum flow of 6DWF. Flows in excess of this, discharge from the pump house directly into the River Allow flowing along the western boundary of the plant.

From the inlet flume, the wastewater is pumped through screw pumps to a splitter chamber where, the flow is divided evenly between two oxidation ditches. The design of the treatment plant is such that two separate process streams are provided. This ensures that each stream can be operated in isolation, allowing the continuous treatment of wastewater while also enabling maintenance and repair work of the plant to be carried out.

In each oxidation ditch, 2 rotors are used to ensure that sludge remains in suspension at all times. From the ditches, the flow passes to the two clarifiers for the purpose of settling sludge.

The sludge from the settling tanks is drawn off and is pumped to a picket fence thickener and then to the dewatering room in the control house. All sludge produced at the treatment works is dewatered to produce a sludge cake with a solids content of 12%. The sludge is given to farmers to spread on land and any surplus sludge is stored in an onsite storage lagoon. There is no overflow from the lagoon to the river.

The effluent from the settling tanks is then passed into an outlet flume. From here it flows through a 375mm∅ outfall pipe into the River Allow.

Sources of Emissions from the Wastewater Treatment Works

The wastewater from Kanturk town is collected through a pipe network and flows by gravity to a pump house just south of the town on the east bank of the River Allow. The main source of emissions is the 375mm diameter discharge pipe carrying the treated effluent from the wastewater treatment plant to the River Allow. The River Allow flows along the western boundary of the plant.

The maximum flow to the treatment plant is 4830m3/day. Flows in excess of this are discharged via a 750mm diameter overflow pipe from the pump house, directly into the River Allow.

There is also a 450mm diameter overflow at the inlet works of the treatment plant. However this is very rarely used as flows in excess of the treatment plant capacity are discharged at the pump house.

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

The flow from the wastewater treatment plant varies from the design dry weather flow of 805m^3/day to the maximum capacity of the treatment plant, which is 6 DWF (4830m^3/day).

The processes at the treatment plant produce an effluent, which satisfies the requirements of EC Directive 91/271/EEC concerning Urban Wastewater Treatment (SI 491 of 1994 as amended by SI 254 of 2001). The applicable effluent standards as defined in the Directive are shown below.

Table A1-1: 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	4.6
Suspended Solids (SS)	35	10.2
Orthophosphate	2	1.3

*Actual Concentration is the average effluent concentrations recorded at the outlet of the WWTP by Cork County Council Wastewater Laboratory during the period Jan '07 to April '08.

From the table above, it is evident that treated effluent from the Kanturk wastewater treatment plant is compliant with the quality of effluent standards set out in the above legislation.

A wastewater assimilative capacity assessment was carried out using all available flow and water quality data. A detailed description of this assessment is completed in section F1.

Based on the assessment of discharges to the receiving water the concentration of BOD and SS will remain below the limiting water quality standards set for the river under 95%-ile river flows. The concentrations of dangerous substances in both the effluent and the river are significantly lower than allowable standards.

The impact of phosphorus discharges was assessed based on median river flows. This indicated an expected water quality of 0.03mg/l, which is at the limit of the water quality standard as determined by the current Q4 rating for the river.

The wastewater assimilative capacity assessment predicts the expected water quality remains within the water quality limits set in the various regulations with only minor increases in the concentration levels of BOD, SS, phosphorus and various dangerous substances.

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

The sewerage system in Kanturk is primarily a separate storm and foul system. The North Cork Co-op in Kanturk has a separate wastewater treatment plant and does not contribute to the flow in the foul sewer system. The surface water in Kanturk generally drains directly to the River, therefore not overloading the wastewater treatment plant.

The treatment works include the following elements:

- Screening
- Inlet Flume
- Splitter Chamber
- Oxidation ditches
- Settling Tanks
- Picket Fence Thickener
- Sludge Dewatering House
- Sludge Storage
- Outfall to River Allow

The processes at the treatment plant produce an effluent, which satisfies the requirements of EC Directive 91/271/EEC concerning Urban Wastewater Treatment (SI 491 of 1994 as amended by SI 254 of 2001).

The screen was an addition to the pump house in 2007 to improve the quality of the influent to the plant. This also improves the quality of any overflows to the River Allow. There are two overflows throughout the system, one at the pump house and one entering the treatment plant. The pump house overflow comes into use at present in flows exceeding 6DWF, which arise during wet periods when infiltration is occurring. The overflow in the treatment plant is rarely used.

The Kanturk Electoral Area Local Area Plan, 2005 states that all proposals for housing estate development are connected to the public sewerage system unless there is extenuating circumstance.

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

The Water Services Investment Programme 2007-2009 does not allocate any funding for improvements to the Kanturk Wastewater Treatment Plant, which was originally commissioned in 1994.

The most recent upgrades that were made to the plant were in 2007. A 6mm screening unit was put in place at the pumping station replacing comminutors, which were not achieving the required results.

A wastewater assimilative capacity assessment was carried out for the Kanturk Wastewater Treatment Plant. The background concentration levels of nutrients in the river were estimated from data collected by Cork County Council wastewater laboratory in 2007 and 2008. Based on this data Kanturk wastewater treatment plant does not appear to be having a major negative effect on the River Allow. Therefore the basic obligations of the operator are being adhered to.

Measures Planned to Monitor Emissions into the Environment

The Cork County Council Environmental Laboratory carries out sampling of the influent and effluent biannually. The Environmental Laboratory also undertakes sampling and analysis of the wastewater sludge.

The Cork County Council Environmental Department located in Inniscarra takes samples from the River Allow 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 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). The River Allow is to have a number of operational monitoring sites under this monitoring programme.

SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration:	Kanturk and 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 Northern Division
Address:	William O'Brien Buildings
	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:	Cork County Council 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
	Not Applicable
	Not Applicable
	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
	Not Applicable
	Not Applicable
	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.

The boundary takes into account, lands serviced by the Kanturk Sewerage Scheme, and lands zoned under the following plans: -

- Cork County Development Plan 2003
- Kanturk Electoral Area Local Area Plan 2005

The agglomeration boundary includes the town centre and all lands bordering the town centre, which was allowed for in the original design. All developments with granted planning permission and all developments under construction at present have also been included in the agglomeration. Some residentially zoned land is unlikely to be developed in the lifetime of this discharge licence and therefore is not included in the agglomeration.

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*:	Mort Ahern
Address:	Kanturk Wastewater Treatment
	Gurteenard
	Kanturk
	Co. Cork
Grid ref (6E, 6N)	138484E, 102077N
Level of Treatment	Secondary
Primary Telephone:	(029) 50040

Fax:	Not Applicable
e-mail:	mort.ahern@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	375mm diameter outfall pipe from wastewater treatment plant. Open Pipe
Unique Point Code	SW01-KTRK
Location	Approximately 1km south of the town centre, off the R576
Grid ref (6E, 6N)	138386E, 102086N

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.

The final effluent from the treatment plant is discharged to a 375mm pipe, which outfalls to the River Allow at the primary discharge point, the location of which is shown on Drg. No. B3-01 in Attachment B.3.

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	450mm diameter overflow pipe from inlet works of the wastewater treatment plant. Open Pipe
Unique Point Code	SW02-KTRK
Location	Approximately 1km south of the town centre, off the R576
Grid ref (6E, 6N)	138475E, 102202N

Type of Discharge	750mm diameter overflow pipe from the pump station 500m upstream of treatment plant. Open Pipe
Unique Point Code	SW03-KTRK
Location	Overflow at main pump station at the junction of R576 and 580
Grid ref (6E, 6N)	138418E, 102634N

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.

The locations of the secondary discharge points are shown on Drg. Nos. B4-01 and B4-02 included in Attachment B.4.

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
	Carrigrohane Road
	Cork
Tel:	(021) 4276891
Fax:	(021) 4867007
e-mail:	Not Applicable

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 N^{o}:	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.*

No planning permission or EIS was required for Kanturk Wastewater Treatment Plant at the time of construction.

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 Services Executive North
Address:	North Cork Area Head Quarters
	Gouldshill, Mallow
	Co. Cork
Tel:	(022) 30200
Fax:	(022) 30211
e-mail:	Jerry.oconnell@hse.ie

B.7 (iii) Other Relevant Water Services Authorities

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

Name:	Not Applicable
Address:	Not Applicable
	Not Applicable
	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.

Kanturk Wastewater Treatment Plant does not discharge into the functional area of any other water services authority other than Cork County Council.

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	**2980**
Data Compiled (Year)	**2005-2008**
Method	**The calculated PE is based on BOD loading and flow measurements taken at the inlet flume. Additional PE due to granted planning permission for new developments and developments under construction is also included.**

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.

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 €)
Discharges from agglomerations with a population equivalent of less than 10,000	25,000

The population equivalent for Kanturk and Environs is based on the B.O.D. loading at the inlet flume measured by Cork County Council. All developments with granted planning permission and all developments under construction at present have also been included in the agglomeration. Some residentially zoned land is unlikely to be developed in the lifetime of this discharge licence and therefore is not included in the agglomeration.

The additional p.e. due to granted planning permissions is estimated at 1150, based on 2.9 people per dwelling as recommended by Kanturk Electoral Area Local Area Plan 2005. There are currently no planning permissions granted in relation to non-domestic activities.

The plant has sufficient capacity to accommodate the additional flows from the new developments however if further residentially zoned land is developed a new treatment plant will be required or an extension to the existing plant, which would proceed under normal planning procedures.

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.

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.

The most recent national Water Services Investment Programme (2007-2009) does not have any listings for the Kanturk Sewerage Scheme or Wastewater Treatment Plant. Attachment B.10 contains the Cork County page of the WSIP, which shows the planned projects in the Water Services Investment Programme 2007-2009.

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.

There was no Section 63 notice issued by the Environmental Protection Agency to Cork County Council in relation to the waste water works in Kanturk under the Environmental Protection Agency Acts, 1992 and 2003, as amended by Section 13 of Protection of the Environment Act, 2003.

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.

Kanturk Wastewater Works does not require a Foreshore Act Licence under the Foreshore Act 1933.

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.

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.

Kanturk Wastewater Treatment Plant was constructed on a green field site, 1km south of the town centre, off the R576. The area of the site is approximately 1.5 hectares.

The influent flows by gravity to a pump station located near the junction of the R576 and the R580, and from there is pumped 500m downstream to the treatment plant.

The plant has the hydraulic design capacity to treat wastewater discharges from up to 3,500 population equivalent (at 77g/c/d B.O.D.) with provisions made in the design of the plant to allow for expansion to 7,000 p.e. if required in the future.

The design dry weather flow (DWF) for the plant is 805 m^3/day, which is based on a population equivalent of 3,500 contributing 230 m^3/head/day. This equates to an average flow of 34 m^3/hr. This has potential to be doubled in the future.

Design Capacity

The design DWF to the plant is 805m^3/day based on a population equivalent of 3,500 contributing 230l/head/day. The hydraulic capacity of the plant is 6 times the design DWF equivalent to 4830m^3/day.

The plant was designed to cater for 320kg/day B.O.D. This B.O.D. loading was based on 3,500 people contributing 77g/head/day with the addition of 52kg/day B.O.D. from the local slaughterhouse.

The treatment plant site allows for expansion, with the addition of 2 more oxidation ditches and settling tanks which would double the capacity of the plant.

Table C1-2: WWTP Limitations

	Stage 1	Future Expansion
Population Equivalent	3,500	7,000
B.O.D Loading	320kg/day	640kg/day
DWF	805m3/day	1610m3/day

Plant Process

The treatment works include the following elements:

- Screening
- Inlet Flume
- Splitter Chamber
- Oxidation ditches
- Settling Tanks
- Picket Fence Thickener
- Sludge Dewatering House
- Sludge Storage
- Outfall to River Allow

Preliminary Treatment

Flows from all areas are collected to the pump house 500m upstream of the Wastewater Treatment Plant on the eastern bank of the river. Within the pump house, a Haigh 741 6mm automatic screen unit replaced unsatisfactorily performing comminutors in 2007. A maximum of 6DWF is pumped from there to the treatment works. Flows in excess of 6DWF are discharged to the river at the pump house. There are 4 no. pumps in the pump house.

An overflow (SW02-KTRK) is located in the inlet flume to the treatment plant and this is identified on drawing B4-01.

Secondary Treatment

The secondary treatment process is based on activated sludge system. The aeration system at the plant is in the form of oxidation ditches. Each oxidation ditch is 760m^3 and contains 2no. 4.0m long rotors. The volume of the ditches allows for 36hours retention of the DWF.

The oxidation ditches shall operate at MLSS concentrations below 0.21kg/m3. Dissolved oxygen (DO) measurement and recording is in place in the ditches. Sludge return system is in operation to ensure an adequate level of mixed liquor suspended solids. The system is flexible enough to ensure that sludge can be returned from the clarifiers to the oxidation ditches and an adequate quantity of sludge can be pumped at all times.

The mixed liquor produced from the aeration system enters secondary clarifiers for the purpose of settling sludge. Each oxidation ditch has a dedicated clarifier. The maximum upward velocity of the settling tanks is 0.9m/hr at 6DWF.

Each clarifier is circular and equipped with a rotating half-bridge sludge scraper, inlet, scum and sludge draw-off pipes, sludge return pipe work, v-notch weir and a system to prevent scum entering the treated effluent.

The treated effluent flows to the outlet flume, where flow-measuring equipment is in place and then discharged to the River Allow through a 375mm outlet pipe.

Sludge Treatment

A 30m^2 picket fence thickener is installed in the treatment plant. The primary and secondary sludges are pumped to the sludge-thickening tank where the sludge is thickened to approximately 3% dry solids. The liquid discharge from this tank is returned to the inlet works. The sludge is dewatered by a 1m wide hydropress after thickening at a rate of 60kg/hr. The resultant cake contains 12% solids. This takes place in a separate dewatering building.

The sludge is given to farmers to spread on land. During the time of year when this is not allowed, the sludge is stored at the plant. The sludge storage lagoon also stores sludge from other treatment plants during this time of the year.

The processes at the treatment plant produce an effluent, which satisfies the requirements of EC Directive 91/271/EEC concerning Urban Wastewater Treatment (SI 491 of 1994 as amended by SI 254 of 2001). The applicable effluent standards as defined in the Directive are shown below.

Table C1-3 Minimum Effluent Standards based on SI 254 of 2001

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

Process Control Systems

A 450mm diameter overflow pipe exists to carry flows greater than 6DWF from the inlet flume directly to the outlet. However this is rarely used as the overflow

in the pump house prevents flows greater than 6DWF being pumped up to the treatment plant.

No retention tanks exist in the Kanturk wastewater treatment plant.

Pump Station

There are 4 pumps located at the pumping station, 1 30l/s pump and 3 25l/s pumps. Generally in normal flow Pump 2, 3 & 4 work is sequence (duty/standby/ standby) or alternatively Pump 1 is operating. In Wet weather this is still the case as increasing the flow to the plant results in flooding of the plant.

The storage capacity of the pump station is approximately 148m^3 which includes the wet wells and open screening area (formerly comminutors area). The 750mm diameter overflow pipe (SW03-Kanturk) from the pump station to the river is accessed via a flap valve. A baffle plate is in place in front of the flap valve to act as a scum board allowing only liquid to overflow and restricting large floating material. An overflow weir was also constructed to a higher level if emergency storage capacity is required.

There is no generator installed at the pump station, standby or mobile.

There is no flow monitoring at the pump station. Therefore the frequency, duration or volume of overflow is not

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.

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

Primary Discharge Point, SW01-KTRK

Type of Discharge	375mm diameter outfall pipe from wastewater treatment plant. Open Pipe
Unique Point Code	SW01-KTRK
Location	Approximately 1km south of the town centre, off the R576
Grid ref (6E, 6N)	138386E, 102086N

The primary discharge point, SW01-KTRK, is the main outlet from Kanturk Wastewater Treatment Plant. The outfall runs in a southwest direction approximately 65m across the flood plain to the river. The point of discharge is an open pipe and is always below water level.

Secondary Discharge Point, SW02-KTRK

Type of Discharge	450mm diameter overflow pipe from inlet works of the wastewater treatment plant. Open Pipe
Unique Point Code	SW02-KTRK
Location	Approximately 1km south of the town centre, off the R576
Grid ref (6E, 6N)	138475E, 102202N

The secondary discharge point, SW02-KTRK, is an overflow pipe from the inlet flume of the wastewater treatment plant. The outfall runs in a northwest direction approximately 30m to the river. The point of discharge is an open pipe and is always below water level.

Secondary Discharge Point, SW03-KTRK

Type of Discharge	750mm diameter overflow pipe from the pump station 500m upstream of treatment plant. Open Pipe
Unique Point Code	SW03-KTRK
Location	Overflow from main pump station at the junction of R576 and R580 (500m upstream of WWTP)
Grid ref (6E, 6N)	138418E, 102634N

The secondary discharge point, SW03-Kant is an overflow from the pumping station. The overflow may activate following mechanical failure of the pumping station or overloading of the wastewater treatment plant. The outfall runs in a southwest approximately 30m across the flood plain to the river. The point of discharge is an open pipe and is always below the water level.

No detailed design or construction details are available for the outfalls.

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-KTRK	Primary	Cork County Council	River	River Allow	cSAC	138386	102086
SW02-KTRK	Secondary	Cork County Counil	River	River Allow	cSAC	138475	102202
SW03-KTRK	Secondary	Cork County Council	River	River Allow	cSAC	138418	102634

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
aSW1u-KTRK	Primary	S	138040	103253	N
aSW1d-KTRK	Primary	S	138506	098898	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. There are no improvements planned at present for the Kanturk 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 Allow 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 have yet to set water quality standards for the River Allow under a water quality or catchment management plan. 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 Kanturk Wastewater Treatment Plant cannot cause deterioration in good water quality under the Water Framework Directive t present.

The River Allow is not a designated Shellfish area under the Shellfish Waters Regulations, S.I.200 of 1994. The River Blackwater, into which the River Allow flows, is also not designated under these regulations.

The River Allow is not designated a Salmonid Water under Salmonid Water Regulations, S.I. 293 of 1988 and tributaries of the Blackwater are also not designated under these regulations.

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

The River Allow 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 Bridge is a designated Sensitive Area. This is not within 2km of any discharge point from the Kanturk wastewater works.

There are no areas along the River Allow or River Blackwater downstream of the Kanturk wastewater treatment plant designated for the abstraction of water intended for human consumption.

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 Allow which flows through Kanturk, adjacent to the wastewater treatment plant site.

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 Allow 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 Attachment F.1.

Natural Heritage Areas
The River Allow does not flow through any 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. Areas of the River Blackwater are designated as proposed NHAs, however these areas are greater than 2km from all discharge points and prior to statutory designation pNHAs are subject to limited protection.

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 Allow. 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 Allow was obtained from Cork County Council. The EPA also takes samples from three locations along the River Allow in the vicinity of the treatment plant. These are located 0.5km upstream of Kanturk Bridge (u/s of plant), 1.3km downstream of Kanturk Bridge (d/s of plant) and Leader's Bridge (d/s of plant).

The biological quality rating (Q value) for the above locations is presented in Table 2 for the period 1982 to 2003. The EPA biological quality rating indicates that the existing water quality upstream of the plant is unpolluted and generally satisfactory. It is evident that there is a reduction in water quality just downstream of the treatment plant. The data also indicates an improvement in water quality at Leaders Bridge from 1994. This is most likely due to the commissioning of the wastewater treatment plant in that year.

Table F1-2: Biological Quality Rating for River Allow

Sampling Location	EPA Biological Quality Rating (Q values)						
	1982	1986	1990	1994	1997	2000	2003
u/s Kanturk Bridge	3-4	3-4	5	4-5	4-5	4-5	4
d/s Kanturk Bridge	3-4	3-4	3-4	3-4	3-4	3-4	3-4
Leader's Bridge	3-4	3-4	3-4	4-5	4	4	4

The Monitoring Station downstream of Kanturk Bridge (i.e. downstream of plant) has a baseline Q-rating (1995) of Q3-4. The target set in the Phosphorus Regulations implementation report 2006 is to achieve a Q-rating of Q4 with a target median phosphorus level of 0.03mgP/l as MRP by 2007. The most recently recorded Q-value as shown above is Q3-4, which indicates phosphorus levels of less than 0.03mgP/l.

The level of suspended solids allowable in the receiving waters is 25mg/l. This is based on the Freshwater Fish Directive in the absence of alternative guidelines.

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 F1-3: Receiving Water Quality Limiting Values

Parameter	Water Quality Standard (mg/l)
BOD	2
Suspended Solids	25
Phosphorus mg/l	0.03
Atrazine	0.001
Dichloromethane	0.01
Simazine	0.001
Xylenes	0.01
Arsenic	0.025
Copper	0.005
Cyanide	0.01
Lead	0.005
Nickel	0.008
Zinc	0.05

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 F1-4: 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	4.6
Suspended Solids (SS)	35	10.2
Orthophosphate	2	1.3

*Actual Concentration is the average effluent concentrations recorded at the outlet of the WWTP by Cork County Council Wastewater Laboratory during the period Jan '07 to April '08.

From Table 4 above, it is evident that treated effluent from the Kanturk wastewater treatment plant is compliant with the quality of effluent standards set out in the above legislation.

Assimilative Capacity of the Receiving Water

An assimilative capacity assessment based on a dilution model was carried out, using all available flow and water quality data. The limiting water quality standards for the River Allow and the estimated expected concentrations of the various water parameters in the River Allow after the treated effluent is discharged are summarized in Table 5 below.

Based on the assessment of discharges to the receiving water the concentration of BOD and SS will remain below the limiting water quality standards set for the river under 95%-ile river flows. The concentrations of dangerous substances in both the effluent and the river are significantly lower than allowable standards.

The assessment of the impact of the phosphorus discharges based on median river flows indicates an expected water quality of 0.03mg/l which is at the limit of the water quality standard as determined by the targeted Q4 rating for the river.

Table F1-5: Expected Water Quality

Parameter	Background Conc. (mg/l)*	Expected Water Quality (mg/l)	Water Quality Limiting Value (mg/l)
Biochemical Oxygen Demand	1	1.1	2
Suspended Solids	3.5	3.7	25
Phosphorus	0.025	0.028	0.03
Atrazine	0.000005	0.00001	0.001
Dichloromethane	0.0005	0.0005	0.01
Simazine	0.000005	0.00001	0.001
Xylenes	0.0005	0.0005	0.01
Arsenic	0.001	0.00098	0.025
Copper	0.00001	0.00041	0.005
Cyanide	0.0025	0.0025	0.01
Lead	0.01	0.01052	0.005
Nickel	0.01	0.01	0.008
Zinc	0.01	0.01	0.05

*Background Concentrations were estimated based on average concentrations recorded in the river u/s of the WWTP by Cork County Council Wastewater Laboratory during the period Jan '07 to April '08

The assimilative capacity assessment predicts the expected water quality remains within the water quality limits set in the various regulations. The table above shows there are only minor increases in the concentration levels of BOD, SS, phosphorus and various dangerous substances.

A screening method is used for testing metals, with a limit of detection of 2mg/l. The estimated expected concentrations of Lead and Nickel are marginally higher than the water quality limits due to this limit of detection. However the expected concentrations of the metals are the same as the background concentrations. If tests were repeated at a lower limit of detection it is most likely the expected concentration limits and background concentrations would be lower than the water quality limits.

Therefore the River Allow has sufficient assimilative capacity for discharges from the Kanturk wastewater treatment plant.

Discharges in proximity of Wastewater Works

North Cork Creameries Co-operative is discharging approximately 100m upstream of the Kanturk wastewater treatment plant and Ducon Concrete are discharging downstream of the treatment plant before the River Blackwater confluence.

Water quality analysis data presented in Tables 6&7 below was recorded by Cork County Council wastewater laboratory and covers a sampling period from 2007 to 2008.

The downstream monitoring station is located 4km downstream of the wastewater treatment plant, which is also downstream of Ducon Concrete. The upstream monitoring station is located 2km upstream of the wastewater treatment plant and is also upstream of North Cork Creameries Co-op.

Table F1-6: Upstream Water Quality

Parameter	Upstream Monitoring Station							
	01/07	03/07	08/07	09/07	02/08	02/08	03/08	04/08
Ph	7.6	7.3	7.9	7.6	8.1	8	-	-
BOD	0.5	0.5	1.2	1.04	1.57	0.5	0.5	0.5
SS	5	7	5	4	4	1.25	1.25	26
Ammonia	0.05	0.05	0.05	0.05	0.05	0.05	-	0.05
Ortho-Phosphate	-	-	0.025	0.025	0.025	0.025	-	0.025

Table F1-7: Downstream Water Quality

Parameter	Downstream Monitoring Station							
	01/07	03/07	08/07	09/07	02/08	02/08	03/08	04/08
Ph	7.5	7.3	8.1	8.0	8.1	7.9	-	-
BOD	0.5	0.5	0.5	1.1	1.56	1.17	0.5	0.5
SS	-	6	-	-	1.25	9	1.25	1.25
Ammonia	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Ortho-Phosphate	-	-	0.025	0.025	0.025	0.025	-	0.025

No chemical data is available at the location of the effluent discharge. However the data in the above tables confirms the wastewater discharge has little effect on the overall river quality given adequate flow in the river and dispersion time.

Attachment included	Yes	No
	✓	

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

Applicants should submit the following information for each downstream or downgradient drinking water abstraction point. The zone of contribution for the

abstraction point should be delineated and any potential risks from the waste water discharge to the water quality at that abstraction point identified.

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

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

An individual record (i.e. row) is required for each abstraction point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at www.epa.ie. 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.

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).

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.

The plant is performing satisfactorily at present and operating within the requirements of the following legislation. There are no improvements planned at present for the Kanturk Wastewater Treatment Plant.

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

Water Quality analysis data for the River Allow was obtained from Cork County Council. The EPA also takes samples from three locations along the River Allow in the vicinity of the treatment plant. These are located 0.5km upstream of Kanturk Bridge (u/s of plant), 1.3km downstream of Kanturk Bridge (d/s of plant) and Leader's Bridge (d/s of plant).

The existing water quality was found to be generally satisfactory with high Dissolved Oxygen (DO) levels and low levels of Biochemical Oxygen Demand (BOD), ammonia and phosphates. In general, there is a slight reduction in water quality at the station downstream of the treatment plant when compared with the station at Leader's Bridge. This is probably as a result of the discharges from the treatment plant and the North Cork Co-operative, which occur in the same area. It is also noted that the quality rating of the river downstream of the wastewater treatment plant has improved from Q3-4 to Q4, which is most likely due to the commissioning of the Kanturk wastewater treatment plant in 1994. Nutrient sampling upstream of the plant suggests the following levels in the River Allow:

Table G1-2: Upstream Water Quality

Parameter	Upstream Monitoring Station							
	01/07	03/07	08/07	09/07	02/08	02/08	03/08	04/08
Ph	7.6	7.3	7.9	7.6	8.1	8	-	-
BOD	0.5	0.5	1.2	1.04	1.57	0.5	0.5	0.5
SS	5	7	5	4	4	1.25	1.25	26
Ammonia	0.05	0.05	0.05	0.05	0.05	0.05	-	0.05
Ortho-Phosphate	-	-	0.025	0.025	0.025	0.025	-	0.025

Based on the above sampling taken by Cork County Council the existing baseline water quality Q3-4 is achieved. These samples are also within the Q4 rating limits, which is the target Q-rating set for the River Allow in the Phosphorus Regulations Implementation Report 2006.

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 River Allow. There are areas of the River Blackwater which are designated SPAs however these are located downstream of Fermoy and therefore, greater than 2km from all discharge points

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.

There are no large public groundwater sources in the area. Charleville, Millstreet and Ballinatona are the closest towns that utilise ground water for large 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 Allow or River Blackwater downstream of the Kanturk wastewater treatment plant 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."

The Kanturk Wastewater Treatment Plant was commissioned in 1994 and was designed to treat effluent to a 20/30ppm 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 Kanturk 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 90%. 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 Allow is not a designated Sensitive Area. The River Blackwater downstream of Mallow Railway Bridge is designated a Sensitive Area. This is not within 2km of any discharge point form the Kanturk 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 Allow is not a designated Shellfish Area under the Shellfish Waters Regulations, S.I. 200 of 1994. The River Blackwater, into which the River Allow flows, is also not designated under these regulations. Following consultation with National Parks and Wildlife Services we are aware the protected freshwater pearl mussel lives in parts of both rivers downstream of the WWTP discharge points.

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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, including the River Allow which flows through Kanturk, adjacent to the wastewater treatment plant site.

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 Allow 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.

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 Allow 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 Kanturk wastewater treatment plant and the river itself is significantly lower than the concentration limits set in the directive.

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.

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

The Water Services Investment Programme 2007-2009 does not allocate any funding for improvements to the Kanturk Wastewater Treatment Plant, which was originally commissioned in 1994.

The most recent upgrades that were made to the plant were in 2007. A 6mm screening unit was put in place at the pumping station replacing comminutors, which were not achieving the required results.

A wastewater assimilative capacity assessment was carried out for the Kanturk Wastewater Treatment Plant. It should be noted that the predicted nutrient levels are strongly influenced by the background levels in the River Allow. The median phosphorus level is estimated from data collected by Cork County Council wastewater laboratory in 2007 and 2008. Based on this data Kanturk wastewater treatment plant does not appear to be having a major negative effect on the River Allow.

Receiving Water Quality Requirement based on Phosphorus Regulations 2008

Water Quality analysis data for the River Allow was obtained from Cork County Council. The EPA also takes samples from three locations along the River Allow in the vicinity of the treatment plant. These are located 0.5km upstream of Kanturk Bridge (u/s of plant), 1.3km downstream of Kanturk Bridge (d/s of plant) and Leader's Bridge (d/s of plant).

The biological quality rating (Q value) for the above locations is presented in Table 2 for the period 1982 to 2003. The EPA biological quality rating indicates that the existing water quality upstream of the plant is unpolluted and generally satisfactory. It is evident that there is a reduction in water quality just downstream of the treatment plant. It should also be noted the data indicates an improvement in water quality at Leaders Bridge from 1994. This is most likely due to the commissioning of the wastewater treatment plant in that year.

Table G2-2: Biological Quality Rating for River Allow

Sampling Location	EPA Biological Quality Rating (Q values)						
	1982	1986	1990	1994	1997	2000	2003
u/s Kanturk Bridge	3-4	3-4	5	4-5	4-5	4-5	4
d/s Kanturk Bridge	3-4	3-4	3-4	3-4	3-4	3-4	3-4
Leader's Bridge	3-4	3-4	3-4	4-5	4	4	4

The Monitoring Station downstream of Kanturk Bridge (i.e. downstream of plant) has a baseline Q-rating (1995) of Q3-4. The target set in the Phosphorus Regulations Implementation Report 2006 is to achieve a Q-rating of Q4 with a target median phosphorus level of 0.03mgP/l as MRP by 2007. The most recently recorded Q-value by the EPA as shown above is Q3-4, which indicates phosphorus levels of less than 0.03mgP/l. Therefore the principal receiving water quality requirement for phosphorus is 0.03mg/l.

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.

As a natural consequence of secondary treatment, there will be an uptake of phosphorous for biomass synthesis at the wastewater treatment plant in Kanturk. 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		
	02/08	02/08	04/08
Ortho-Phosphate	1.5	1.41	2.04

Table G2-4: Phosphorus Levels in Effluent from WWTP

Parameter	Outlet Monitoring Station		
	02/08	02/08	04/08
Ortho-Phosphate	0.52	0.97	0.53

The tables show Kanturk wastewater treatment plant is treating effluent to a high standard. It is worth noting, the treatment plant is exceeding required effluent standards and is achieving the effluent standard of 2mg/l required for Sensitive Areas under the above legislation.

Assimilative Capacity of the Receiving Water

An assimilative capacity assessment based on a dilution model was carried out, using all available flow and water quality data. The limiting water quality standard for the River Allow and the estimated expected concentration of phosphorus in the River Allow after the treated effluent is discharged is shown in Table 5 below.

The assessment of the impact of the phosphorus discharges based on median river flows indicates an expected water quality of 0.03mg/l which is at the limit of the water quality standard as determined by the targeted Q4 rating for the river.

Table G2-5: Expected Water Quality

Parameter	Background Conc. (mg/l)*	Expected Water Quality (mg/l)	Water Quality Limiting Value (mg/l)
Phosphorus	0.025	0.028	0.03

*Background Concentrations were estimated based on concentrations recorded in the river u/s of the WWTP by Cork County Council Wastewater Laboratory during the period Jan '07 to April '08

The assimilative capacity assessment predicts the expected water quality remains within the water quality limits set in the Phosphorus Regulations Implementation Report 2006. The table above shows there is only a minor increase in the concentration levels of phosphorus.

Therefore the River Allow has sufficient assimilative capacity for discharges from the Kanturk wastewater treatment plant.

Discharges in proximity of Wastewater Works

The assimilative capacity of the River is adequate for Kanturk Wastewater Treatment Plant; however there are additional discharges in the River Allow, which may affect the level of phosphorus in the River. North Cork Creameries Co-operative is discharging approximately 100m upstream of the Kanturk wastewater treatment plant. North Cork Creameries Co-op is not an IPPC licensed industry. Ducon Concrete are discharging downstream of the treatment plant before the River Blackwater confluence and are also not an IPPC licensed industry.

The EPA monitoring station 1.3km from Kanturk Bridge (d/s of WWTP and North Cork Creameries) has been identified as a site with difficulties achieving the 2007 targets set by the Phosphorus Regulations 1998. The Phosphorus Regulations Implementation Report No.4 suggests this section of the River Allow is potentially in the mixing zone of both Kanturk WWTP and North Cork Creameries Co-op. A review of compliance date is suggested in this report. The report also suggests that the poor quality at this site is influenced by agricultural activities further upstream.

Water quality analysis data presented in Tables 6&7 below was recorded by Cork County Council wastewater laboratory and covers a sampling period from 2007 to 2008.

The downstream monitoring station is located 4km downstream of the wastewater treatment plant, which is also downstream of Ducon Concrete. The upstream monitoring station is located 2km upstream of the wastewater treatment plant and is also upstream of North Cork Creameries Co-op.

Table G2-6: Upstream Water Quality

Parameter	Upstream Monitoring Station							
	01/07	03/07	08/07	09/07	02/08	02/08	03/08	04/08
Ortho-Phosphate	-	-	0.025*	0.025*	0.025*	0.025*	-	0.025*

Table G2-7: Downstream Water Quality

Parameter	Downstream Monitoring Station							
	01/07	03/07	08/07	09/07	02/08	02/08	03/08	04/08
Ortho-Phosphate	-	-	0.025*	0.025*	0.025*	0.025*	-	0.025*

*These samples are below the level of detection of 0.05mg/l and therefore are estimated at 0.025mg/l.

No chemical data is available at the location of the effluent discharge (in proximity of EPA monitoring station). However the data in the above tables confirms the wastewater discharge has little effect on the overall river quality given adequate flow in the river and dispersion.

Attachment included	Yes	No
	✓	

G.3 Impact Mitigation

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

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

The Water Services Investment Programme 2007-2009 does not allocate any funding for improvements to the Kanturk Wastewater Treatment Plant, which was originally commissioned in 1994.
The most recent upgrades that were made to the plant were in 2007. A 6mm screening unit was put in place at the pumping station replacing comminutors, which were not achieving the required results.

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.

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.

There are no overflows other that those from the primary and secondary discharge points.

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 :** 19th September 2008
(on behalf of the organisation)

Print signature name: THOMAS G. STRITCH

Position in organisation: DIRECTOR OF SERVICES

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.