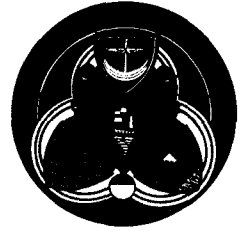


Comhairle Contae Chorcaí Cork County Council

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



Environmental Protection Agency,
P.O.Box 3000,
Johnstown Castle Estate,
County Wexford.



Our Ref.: BOL/AGHA/1209

22 December 2009

Sub.: Waste Water Discharge License Application for the Agglomeration of Aghabullogue Village, County Cork.

Dear Sir/Madam,

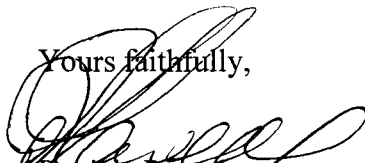
Please find enclosed the waste water discharge license application for the agglomeration of Aghabullogue Village in County Cork.

The following are the documents enclosed as per the application guide note.

- 1 No. signed hard copies of originals.
- 1 No. copy of the originals.
- 2 No. CD-ROM with documentation in electronic searchable PDF,
- 1 No. CD-ROM with GIS Data, Table D.2, Table E.3. and Table F.2

The content of the electronic files is true copy of the original hard copy.

Yours faithfully,


Patricia Power
Director of Services



**CORK COUNTY COUNCIL
(Southern Division)**

**APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY
FOR A WASTEWATER CERTIFICATE OF AUTHORISATION**
under the Wastewater Discharge (Authorisation) Regulations 2007 (S.I. No.
684 of 2007)



Location: The agglomeration of Aghabullogue, County Cork

Category of application: < 500 PE

Date Application Lodged: December 22nd 2009



Waste Water Discharge Certificate of Authorisation Application Form

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EPA Ref. N^o: (Office use only)	<input type="text"/>
-----------------------------------------------------	----------------------

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

Tracking Amendments to Draft Application Form

Version No.	Date	Amendment since previous version	Reason
V. 1.	12/06/2009	N/A	
V.2.	17/06/2009	<p>Delete reference to Design Build and Operate</p> <p>Delete the requirement to provide contact information for the associated waste water treatment plant</p> <p>Replace references to the Water Services investment Programme with the Small Schemes Programme</p> <p>Update references to new legislation</p> <p>Inclusion of the requirement to submit information on private WWTPs within the agglomeration.</p>	<p>To accurately reflect the information required for the small schemes programme</p> <p>To accurately reflect the information required and the scale of the waste water works</p> <p>To accurately reflect the information required for the small schemes programme</p> <p>To reflect changes in legislation</p> <p>To obtain an overview of all discharges within the agglomeration.</p>

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Environmental Protection Agency
 Application for a Waste Water Discharge Certificate of Authorisation
 Waste Water Discharge (Authorisation) Regulations, 2007.

CONTENTS

	Page
TRACKING AMENDMENTS TO DRAFT APPLICATION FORM	3
ABOUT THIS APPLICATION FORM	6
PROCEDURES	7
SECTION A: NON-TECHNICAL SUMMARY	9
SECTION A: NON-TECHNICAL SUMMARY	10
SECTION B: GENERAL	13
B.1 Agglomeration Details	13
Applicant's Details	13
Co-Applicant's Details	13
B.2 Location of Associated Waste Water Treatment Plant(s)	14
B.3 Location of Primary Discharge Point	14
B.4 Location of Secondary Discharge Point(s)	15
B.5 Location of Storm Water Overflow Point(s)	15
B.6 Planning Authority	16
B.7 Other Authorities	16
B. 8(i) Population Equivalent of Agglomeration	17
B. 8(ii) Pending Development	17
B. 8(iii) Fees	18
B.9 Capital Investment Programme	18
B.10 Significant Correspondence	18
B.11 Foreshore Act Licences.	19
SECTION C: INFRASTRUCTURE & OPERATION	20
C.1 Operational Information Requirements	20
SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT	23
D.1(i) Discharges to Surface Waters	23
D.1(ii) Discharges to Groundwater	24
D.1 (iii) Private Waste Water Treatment Plants	24

D.2	Tabular Data on Discharge Points	24
SECTION E:	MONITORING	25
E.1	Waste Water Discharge Frequency and Quantities – Existing & Proposed	25
E.2.	Monitoring and Sampling Points	25
E.3.	Tabular data on Monitoring and Sampling Points	27
E.4	Sampling Data	27
SECTION F:	EXISTING ENVIRONMENT & IMPACT OF THE DISCHARGE(S)	28
F.1.	Impact on Receiving Surface water or Groundwater	28
F.2	Tabular Data on Drinking Water Abstraction Point(s)	37
SECTION G:	PROGRAMMES OF IMPROVEMENTS	38
G.1	Compliance with Council Directives	38
G.2	Compliance with Water Quality Standards for Phosphorus Regulations (S.I. No. 258 of 1998)	41
G.3	Impact Mitigation	42
G.4	Storm Water Overflows	43
SECTION H:	DECLARATION	44

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ABOUT THIS APPLICATION FORM

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

The Application Form **must** be completed in accordance with the instructions and guidance provided in the *Waste Water Discharge Certificate of Authorisation Application Guidance Note*. The Guidance Note gives an overview of Waste Water Certificates of Authorisation, outlines the certification 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 Certificate of Authorisation must contain the information prescribed in the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007). Regulation 24 of the Regulations sets out the statutory requirements for information to accompany a Certificate of Authorisation 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 with respect to Regulation 24 requirements, please complete the Regulation 24 Checklist provided in the following web based tool:
http://78.137.160.73/epa_wwd_licensing/

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 Certificates of Authorisation, and for the processing of reviews of such Certificates, appears 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.

An application for a Certificate of Authorisation must be submitted on the appropriate form (available from the Agency website – <http://www.epa.ie/whatwedo/licensing/wwda/>) with the correct fee, and should contain relevant supporting documentation as attachments. The application should be based on responses to the form and include supporting written text and the appropriate use of tables and drawings. Where point source emissions occur, a system of unique reference numbers should be used to denote each discharge point. These should be simple, logical, and traceable throughout the application.

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

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

Additional information may need to be submitted beyond that which is explicitly requested on this form. Any references made should be supported by a bibliography. The Agency may request further information (under notices provided for in the Regulations) 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 Certificate of Authorisation is an offence under the Waste Water Discharge (Authorisation) Regulations, 2007.

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

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

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

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

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SECTION A: NON-TECHNICAL SUMMARY

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

A non-technical summary of the application is to be included here. The summary should identify all environmental impacts of significance associated with the discharge of waste water associated with the waste water works. This description should also indicate, where applicable, 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 N° A.1**

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SECTION A: NON-TECHNICAL SUMMARY

Aghabullogue is located approximately 20kilometres west of Cork City, midway between Rylane and Coachford, 3km north west of the R619 and the R618. Aghabullogue lies to the west of the Delehinagh River, and levels rise from the river westwards towards the village.

Aghabullogue is designated as a village as part of the strategy of the Macroom Electoral Area Local Area Plan 2005.

The Waste Water Works and the Activities Carried Out Therein

The waste water collection system for the Aghabullogue catchment is predominantly separate. There are no combined storm overflows in the system. Surface water is collected and discharged to local watercourses; foul sewerage is collected and discharged to the new WWTP. Due to the topography of the village there is a pumping station located within the village. The Waste Water Treatment Plant is located to the east of the village.

Waste water is pumped from one pumping station which is located to the south of the village. Waste water flows by gravity to this pumping station which pumps the waste water up to the main trunk sewer, this sewer in turn discharges to the WWTP.

The treatment plant was commissioned in 2006 with a design capacity of 500 PE and currently serves 189 PE.

The WWTP utilises two 'All in One' sewerage treatment plants. The incoming sewage enters the treatment works via a 225mm gravity sewer at manhole 1. All flows from MH1 pass through a storm overflow chamber, flows exceeding 3DWF will overflow to the storm holding tank (existing septic tank). Storm flows will be returned to MH1 on a reduction of flow through the plant or there is also an emergency overflow to the Delehinagh River.

Flows up to 3DWF enter a screw conveyor screen, there is also a manual by-pass screen provided as back up during breakdown or servicing. Flows then enter the flow splitting chamber where it is divided between the two 'All in One' treatment plants.

The raw sewage enters the primary settlement area where suspended solids and BOD are reduced. The settled sewage is then treated by means of an efficient and compact aerator system. This compact system requires minimal power input and maintenance.

The final settlement is a discrete compartment denying ingress of untreated or partially treated waste water. It incorporates a parallel plate clarifier to remove any existing solids before the final discharge. This zone has frequent automatic removal of sludge to sludge storage. Sludge storage is provided in the base of the unit, there is approximately 12 weeks capacity provided. The final effluent then flows through a flow measurement chamber and discharges to the Delehinagh River.

The sources of emissions from the waste water works

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

- Domestic population
- Commercial premises
- Infiltration

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

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 design capacity of Aghabullogue WWTP is 500 PE based on 225l/head/day. The current population of the village is approximately 189 PE. The final effluent is being discharged into the Delehinagh River. Analysis of the discharge has shown that it is compliant for all design parameters.

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

The WWTP has a sufficient number of standby pumps, streams, storm holding facilities, sludge holding facilities, etc. provided to ensure continuation of the waste water treatment.

The treatment plant consists of the following elements:

- Inlet screw conveyor Screening
- Storm Holding Tank
- 2 No. Blivet 'All-in-One' treatment plants which include,
 - Primary Settlement
 - Aerator Biozone (Rotating Biological Contractors)
 - Final Clarifier
 - Sludge Storage
- Final Effluent sampling chamber
- Outfall to the Delehinagh River.

Techniques

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

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

Cork County Council's 'Assessment of Water Services Needs 2004' identified the need to provide a Waste Water Treatment Plant to replace the existing septic tank serving the Village. A waste water treatment plant was constructed in 2005 as a result.

The treatment plant in Aghabullogue is still running effectively with discharges complying with all design parameters. An instrumentation and control system together with on site monitoring and sampling is provided to ensure satisfactory operation of the plant.

At present there are no further measures planned.

Measures planned to monitor emissions into the environment

The Cork County Council Environmental Laboratory does not carry out sampling of the influent and effluent at Aghabullogue WWTP, nor is sampling carried out on the Delehinagh River. Sampling is also undertaken by Response Engineering on a weekly basis. Response Engineering maintain and operate the plant, which is overseen by Cork County Council.

For the purposes of this Waste Water Discharge Certificate sampling was carried out on one occasion by Cork County Council.

List of Attachments include the following:

- Location Map Scale 1:25,000 Attachment A1 Map 1
- Site Location Map of WWTP & Pumping Station Attachment A1 Map 2
- Site Layout Attachment A1 Map 3

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SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration: Aghabullogue Agglomeration

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 Certificate of Authorisation application relates. It should have the boundary of the agglomeration to which the Certificate of Authorisation application relates clearly marked in red ink.

Name*:	Cork County Council
Address:	Southern Division
	County Hall
	Carrigrohane Road
	Co. Cork
Tel:	021 427 6891
Fax:	021 427 6321
e-mail:	patricia.power@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*:	Patricia Power
Address:	Area Operations South
	County Hall
	Carrigrohane Road
	Cork
Tel:	021 4285 285
Fax:	021 4276 321
e-mail:	patricia.power@corkcoco.ie

*This should be the name of person nominated by the Water Services Authority for the purposes of the application.

Co-Applicant's Details

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

*This should be the name of a Water Services Authority, other than the lead authority, where multiple authorities are the subject of a waste water discharge Certificate of Authorisation application.

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

Attachment included	Yes	No
	√	

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

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

Name*:	Ailish Johnston
Address:	Response Engineering Ltd. Railway Road Charleville Co. Cork.
Grid ref (6E, 6N)	144711E, 77490N
Level of Treatment	Secondary

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

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

Attachment included	Yes	No
	√	

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.

Discharge to	Surface Water
Type of Discharge	200mm diameter open pipe discharging from the outlet chamber directly into the Delehinagh River.
Unique Point Code	SW01AGHA
Location	Delehinagh River, Dromatimore
Grid ref (6E, 6N)	144713E, 77487N

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

Attachment included	Yes	No
	√	

B.4 Location of Secondary Discharge Point(s)

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

Discharge to	Surface Water
Type of Discharge	150mm diameter open pipe discharging from the outlet chamber directly into the Delehinagh River – Emergency Overflow
Unique Point Code	SW02AGHA
Location	Delehinagh River, Dromatimore.
Grid ref (6E, 6N)	144713E, 77487N

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

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 ($\leq A3$) of storm water overflow point(s) associated with the waste water works, including labelled monitoring and sampling points associated with the discharge point(s).

These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, C.1, D.2, E.3 and F.2.

Attachment included	Yes	No
		√

B.6 Planning Authority

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

Name:	Cork County Council
Address:	Planning Department
	County Hall
	Carrigrohane Road
	Cork
Tel:	021 4276891
Fax:	021 4867007
e-mail:	planninginfo@corkcoco.ie

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

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

Local Authority Planning File Reference No:	Not Applicable
----------------------------------------------------	----------------

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

Attachment included	Yes	No
	√	

B.7 Other Authorities

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

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

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

Within the SFADCo Area	Yes	No
		√

B.7 (ii) Health Services Executive Region

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

Name:	Health Service Executive South
Address:	Áras Sláinte Wilton Road, Cork
Tel:	021 4545011
Fax:	021 4927228
e-mail:	Not Available

B. 8(i) Population Equivalent of Agglomeration

TABLE B.8.1 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	189 (Current) 500 (Design)
Data Compiled (Year)	2009
Method	Desk Study

B.8 (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 waters.

The current population equivalent being treated at Aghabullogue WWTP is approx 189. This is based on a desk study with figures published in contract documents.

All developments with granted planning permission and all developments under construction have been included in the agglomeration. There are currently no planning permissions granted in relation to non domestic activities.

At present Aghabullogue Wastewater Treatment Plant, is operating at approximately less than half its potential capacity. Therefore the plant has adequate capacity to accommodate any extra hydraulic and organic loading without posing additional environmental risk to the receiving habitat.

B.8 (iii) FEES

State the relevant Class of waste water discharge as per Regulation 5, 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 €)
Discharge from agglomeration with a population equivalent of less than 500	€3,000

Appropriate Fee Included	Yes	No
		√*

*please see copy of attached letter sent by registered post to Mr F. Clinton ,Programme Manager , Licencing Unit EPA on December 18th 2009

B.9 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 Water Services Investment Plans) 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.

Not Applicable

Attachment B.9 should contain the most recent development programme, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

Attachment included	Yes	No
		√

B.10 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.

Not Applicable

Attachment B.10 should contain a summary of any relevant correspondence issued in relation to a Section 63 notice.

Attachment included	Yes	No
		√

B.11 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.

Not Applicable

Attachment B.11 should contain the most recent licence issued under the Foreshore Act 1933, including a copy of **all** conditions attached to the licence and any monitoring returns for the previous 12-month period, if applicable.

Attachment included	Yes	No
		√

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SECTION C: INFRASTRUCTURE & OPERATION

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

C.1 Operational Information Requirements

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

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.1.1 Storm Water Overflows

There are no storm overflows, other than the primary and secondary overflows identified.

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.

C.1.2 Pumping Stations

There is one pumping station located within the collection system serving the Aghabullogue WWTP.

- In the pumping station in the village of Aghabullogue there is one duty and one standby pump.
- In the event of a power failure there will be an emergency dial out to the caretaker of the pumping station. The chamber will also begin to fill as there is sump storage within the pumping station.
- Storage capacity is provided at the pump stations, there is approximately seven cubic metres of sump storage at the pumping station.

- There is no record of the frequency of failure of the pumps/power outages.

C.1 Waste Water Treatment Plant

The Waste Water Treatment Plant in Aghabullogue was constructed adjacent to the existing septic tank, which is now incorporated into the plant. The septic tank served 11 council houses in the village. The treatment plant is located to the North East of the village. The site is approximately 0.7 acres.

The influent flows by gravity to the WWTP, however, not all areas can discharge to the public sewer due to the topography of the catchment. There is one pumping station located to the south of the village. Part of the village discharges waste water to the sewer network which flows by gravity to the pumping station; this is then pumped back up to the public gravity sewer.

The plant has the hydraulic design capacity to treat waste water discharges for a population equivalent of up to 500PE.

The design dry weather flow (DWF) for the plant is 113m³/day, which is based on a population equivalent of 500 contributing 225 l/head/day. This equates to an average flow of 5m³/hr. The current PE being served by the WWTP is 189, which equates to a DWF of 43m³/day.

The following drawings, showing the locations of the treatment plant and discharge point, along with a schematic plan of the plant are included in the attachment.

Table C1-1: Table of Attachments

Item	Title	Attachment No.
1	1/1000 Wastewater Treatment Plant Site Plan	C1-Map 8
2	Schematic Showing Treatment Plant Processes	C1-Drg1

General Description of the Plant

The WWTP utilises two 'All in One' sewerage treatment plants. These plants include primary settlement, sludge storage, biological treatment and final clarifier arrangement. The plant is sized to treat 500 PE. The secondary treatment in the plant is used in order to achieve the required 20/125/30 mg/l BOD/COD/SS standard required.

The plant operates as follows:

1. The incoming sewage enters the treatment works via a 225mm gravity sewer to the left hand corner of the site at Manhole 1 (MH1). All flows from MH1 pass through the Storm Overflow Chamber. Flows exceeding 3DWF will overflow to the storm holding tank (existing septic tank). Storm flows stored in the storm tank will be returned to MH1 on reduction of flows below DWF. If there is a

sustained storm flow due to power failure, essential maintenance etc. the storm tank fills up and there is an overflow on this tank to the Delehinagh River.

2. Flows up to 3DWF enter the screw conveyor screen where screenings above 6mm are removed from the waste water. A manual by-pass screen is provided as back-up during screen breakdown or servicing.
3. Flows from the screen enter a flow splitting chamber. The flow is divided between two BMS Blivet 'All in One' treatment plants.
4. The Blivet is capable of receiving raw sewage and settling gross solids without recourse to mechanical means. It incorporates lamella or parallel plates to enhance efficiency and utilisation of space. The primary settlement zone reduces the suspended solids by 75% and the BOD by 25% to 30%.
5. The settled sewage is treated by means of an efficient and compact system (BMS Aerator Biozone) requiring minimal power input and maintenance. It is a combined fixed film reactor and active aeration system mounted on a horizontal shaft. The rotational media is a spiral formation enclosed in outer drum to provide active aeration, intense surface area and net hydraulic lift. The Biozone is self cleansing and no extraneous pumping or sludge returns are required. For the process efficiency it is, in effect, a plug flow system.
6. The final settlement is a discrete compartment denying ingress of untreated or partially treated liquor. The design is similar to the Primary Settlement Tank on an upward flow basis. It is a static design, set in frames that are easily removable for cleansing. It incorporates a parallel plate clarifier to remove any existing solids before the final discharge by the outlet of the treatment plant. This zone has frequent automatic removal of sludge to sludge storage by means of a timed submersible pump.
7. Sludge storage is provided in the base of the unit. Depending on the load applied there is approximately 12 weeks capacity provided. Normally desludging is carried out by suction tanker.
8. The final effluent flows through a flow measurement chamber and then discharges via a 160mm open wavin pipe to the Delehinagh River.

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

Attachment included	Yes	No
	√	

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 discharges 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 'Emissions to Surface/Groundwaters and 'Dangerous Substances Emissions' 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 (i) 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 'Discharge Point Details', 'Emissions to Surface/Groundwaters and 'Dangerous Substances Emissions', should be completed for the primary discharge point from the agglomeration and for **each** secondary discharge point, where relevant. Table 'Discharge Point Details' 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 waste water treatment plant this data should also be provided in response to Section D.1(i).

Supporting information should form **Attachment D.1(i)**

Attachment included	Yes	No
	√	

D.1(ii) Discharges to Groundwater

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 'Discharge Point Details', 'Emissions to Surface/Groundwaters and 'Dangerous Substances Emissions', should be completed for the primary discharge point from the agglomeration and for **each** secondary discharge point, where relevant. Table 'Discharge Point Details' 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 waste water treatment plant this data should also be provided in response to Section D.1(ii).

Supporting information should form **Attachment D.1(ii)**

Attachment included	Yes	No
		√

D.1 (iii) Private Waste Water Treatment Plants

Provide information on all independently owned/operated private waste water treatment plants operating within the agglomeration. Submit a copy of the Section 4 discharge licence issued under the Water Pollution Acts 1977 to 1990, as amended for each discharge.

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 - Agha	Primary	Cork County Council	River	Delehinagh River	High	144713	077487
SW02- Agha	Secondary	Cork County Council	River	Delehinagh River	High	144713	077487

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 'Discharge Point Details' 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 'Discharge Point Details' 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 monitoring.

The primary discharge point has composite sampling (time and flow proportional capabilities) and continuous flow monitoring is also provided. For the secondary discharge there is no continuous flow monitoring provided.

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 discharge and its effect on the receiving environment should be considered.

Monitoring Aghabullogue Waste Water Treatment Plant

The plant is currently being supervised by Response Engineering Ltd. Samples of the influent and effluent is taken on a weekly basis. Response mainly monitors the concentration of COD, BOD, SS, TP and pH. Examples of this influent and effluent testing can be found in Attachment E2.

The Cork County Council Environmental Laboratory does not carry out sampling of the influent and effluent at Aghabullogue WWTP, nor is a sampling programme implemented on the Delehinagh River. However for the purpose of his Waste Water Discharge Certificate Application, sampling was carried out on one occasion.

The Delehinagh River is a tributary of the River Lee. The Inniscarra Reservoir on the River Lee is downstream of the Delehinagh River. Cork County Council has a water abstraction point on the reservoir. Monitoring is carried out at this abstraction point by Cork County Council as part of a scheduled programme in keeping with the Abstraction directive. The raw water intake location is also monitored currently on a weekly basis by Cork County Council for both Cryptosporidium and Giardia and the results are acceptable. More information regarding that abstraction point form part of Attachment F.2.

The Cork County Council Environmental Laboratory does not carry out sampling of the influent and effluent at Aghabullogue WWTP, nor is sampling carried out on the Delehinagh River. However, for the purposes of this Waste Water Discharge Licence sampling was carried out on one occasion.

General Laboratory Information

The Waste Water Laboratory of Cork County Council is accredited for a number of analytical tests under the Irish National Accreditation Board (INAB) under the ISO 17025 international standard. The details of the Accreditation can be found in Attachment E.2. The Waste Water Laboratory of Cork County Council is currently accredited for the following parameters under the ISO 17025 system:

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

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The laboratory perform a number of analytical tests e.g. fats, oil , grease and metals using an ICP-OES system and while the Waste Water Laboratory of Cork County Council is not currently accredited for extra tests the same analytical procedures and protocol are adhered to by the laboratory as would be required if the tests were accredited. The laboratory also participates in proficiency testing schemes which measure the accuracy of the results and performance of the laboratory in both the EPA scheme and the WRC Aquacheck scheme from the UK. The performance of the laboratory in these schemes is excellent and the non-accredited tests are within the performance criteria for the schemes as evaluated by the scheme coordinators.

Details of any accreditation or certification of analysis should be included. **Attachment E.2** should contain any supporting information.

Attachment included	Yes	No
	√	

E.3. Tabular data on Monitoring and Sampling Points

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

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
SW01	Primary	Sampling	144713	077487	y
aSW01u	u/s	Sampling	144743	077551	y
aSW01d	d/s	Sampling	145809	075937	y

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 24(i) of the Waste Water Discharge (Authorisation) Regulations 2007 requires all applicants in the case of an existing discharge 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 24(m) 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.

Clear and concise 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) and/or the ambient environmental conditions of the groundwater upgradient and downgradient of any discharges.

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. Impact on Receiving Surface water or Groundwater

- Details of monitoring of the receiving surface water should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' 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 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details'. Monitoring of surface water shall be carried out at not less than two points, one upstream from the discharge location and one downstream.
- Details of monitoring of the receiving ground water should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' should be completed for the primary discharge point. Ground water monitoring locations upgradient and down gradient of the discharge point shall be screened for those substances listed in Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details'. Monitoring of ground water shall be carried out at not less than two points, one upgradient from the discharge location and one downgradient.
- For discharges from secondary discharge points Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' should be completed.
- 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 surface or groundwater.

- 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 drinking water abstraction points exist downstream/down gradient 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/EEC¹ 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/EEC²;
- ¹Council 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)
- ²Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (OJ No. L 103, 25.4.1979)
- This section should also contain details of any modelling of discharges from the agglomeration. Any other relevant information on the receiving environment should be submitted as **Attachment F.1.**

Attachment included	Yes	No
	√	

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.

The receiving water body of the Aghabullogue WWTP is the Delehinagh River, which runs in a south east direction for approximately 4km to its confluence with Dripsey River at Colthurst's Bridge. The combined rivers meet the River Lee at Inniscarra Reservoir, 3.5km downstream of the confluence. The Delehinagh therefore forms part of the Lee system. There are no discharges to ground, or any other media.

Specific localised EPA flow data is not available in the vicinity of the existing discharge points and thus figures have been taken from available South Western River Basin District data.

These flow estimates including 95%ile and median flows are shown in the table below.

Table F1-1: Flow Data

Parameter	RBD Data obtained from Cork County Council
95%ile (m ³ /s)	0.09994
Median (m ³ /s)	0.56398

With an estimated 95-percentile flow (i.e. a flow that is exceeded 95% of the time) of 99.94l/sec, or 8,634m³/day, there are 203 dilutions available in the Delehinagh River for the current discharge (approximately 42.5m³/day) while there are 76 dilutions available for the proposed maximum design discharge of 500 PE at 225l/h/d.

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 of 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 Delehinagh River 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 determined the Ecological Status as High for the Delehinagh River due to the Physiochemical status. The Water Framework Objectives are included as attachment F1.

Designations under relevant directives

The Delehinagh River is not a designated Shellfish area under the Shellfish Waters Regulations, S.I.268 of 2006. The Dripsey River, into which the Delehinagh River flows, is also not designated under these regulations.

The Delehinagh River is not designated a Salmonid Water under Salmonid Water Regulations, S.I. 293 of 1988. The River Lee is designated Salmonid water; however, the Delehinagh tributary provides a valuable spawning and nursery habitat for salmonid fish.

The Delehinagh River is not designated a Bathing Water under the Bathing Water Regulations, S.I. 79 of 2008 as amended.

The Delehinagh River is not a designated Sensitive Area under the Urban Waste Water Treatment Regulations 2001 (S.I. 254 of 2001). There is no sensitive area within 2km of any discharge point from Aghabullogue WWTP.

Areas of Conservation

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

Special Areas of Conservation

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

The area surrounding the Delehinagh River downstream of the discharge is not a designated special area of conservation, the Dripsey River further downstream is also not a designated special area of conservation.

Natural Heritage Areas

Natural Heritage Areas are the basic designation for wildlife. A NHA is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection.

The Delehinagh River does not flow through any Natural Heritage Areas (NHA).

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

Special Protected Areas

Special Protected 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 Delehinagh River. There are also no special protected areas along the Dripsey River.

Receiving Water Quality Requirement

Water Quality analysis data for the River Lee is undertaken by the EPA, the River Lee system is covered in Hydrometric area no.19, however, the Delehinagh River is not included in the EPA survey, thus no data is available.

The EPA monitors a number of stations on the Dripsey River. One of these is located at Luskins Bridge 0.5km upstream of the confluence with the Delehinagh River and another is located 3km downstream of the confluence at Dripsey Bridge. The quality information obtained at these stations can provide some indication of the impact of the Delehinagh's confluence with the Dripsey River.

The Q-values obtained for the Dripsey River indicate that no major differences have been observed between the monitoring stations, which indicate that the discharge from the treatment plant does not have a negative effect on the overall water quality. These results are shown in table F1-2 below.

Table F1-2: Biological Quality Rating for Dripsey River – Upstream and Downstream of the confluence with the Delehinagh River

Location	EPA Biological Quality Rating (Q-Values)					
	1990	1994	1997	1999	2002	2005
Luskin's Br	4-5	4-5	3-4	4	4	4
Dripsey Br	4	4	3-4	4-5	4	4

In November 2001 Dixon Brosnan carried out a biological survey of the river for the purposes of assessing the river before construction of the treatment plant. The assessment was carried at two locations in the vicinity of the treatment plant. These

locations were 80m upstream of Aghabullogue Bridge and 300m downstream of Aghabullogue Bridge. The results of this assessment are shown in table F1-3 below.

Table F1-3: Biological Quality Rating for Delehinagh River – Upstream and Downstream of discharge

Location	Dixon Brosnan Biological Quality Rating (Q-Values)
	November 2001
80m u/s Aghabullogue Bridge	4-5
300m d/s Aghabullogue Bridge	4

The standard water quality requirements for dangerous substances are based on the Water Quality (Dangerous Substances) Regulations 2006.

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

Table F1-4: Receiving Water Quality Limiting Values

Parameter	Water Quality Standard (ug/l)
Atrazine	1.0
Dichloromethane	10.0
Simazine	1.0
Toluene	10.0
Tributyltin	0.001
Xylenes	10.0
Arsenic	25
Chromium	30
Copper	30
Cyanide	10
Fluoride	500
Lead	10
Nickel	50
Zinc	100

Effluent Standards

The design treated effluent quality is shown in the table below.

Table F1-5: Design Effluent Standards

Parameter	Effluent Standards (mg/l)	Actual Concentrations (mg/l)
Biological Oxygen Demand (BOD)	20	9.33
Chemical Oxygen Demand (COD)	125	33.93
Suspended Solids (SS)	30	14.27
Total Phosphorus	Not Applicable	1.18

*Actual Concentration is the average effluent concentrations recorded at the outlet of the WWTP by Response Engineering Wastewater Laboratory during the period January '08 to March '09.

From Table F1-5 above, it is evident that treated effluent from the Aghabullogue wastewater treatment plant is compliant with the quality of design effluent standards set out.

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

Assimilative Capacity of the Receiving Water

a) **Mass Balance Equation for Orthophosphate:**

Median flow of River = 0.56398 m³/sec
Median oPO₄-P in River (upstream) = <0.05mg/L

Average volume of discharge = 0.000492 m³/sec
Median value for O-PO₄-P in discharge = 6.0 mg/L

$$C_{\text{final}} = \frac{(0.56398 \times 0.05) + (0.000492 \times 6.0)}{0.56398 + 0.000492}$$

$C_{\text{final}} = <0.055 \text{ mg/L oPO}_4\text{-P}$

The increase in Orthophosphate due to the discharge of Aghabullogue WWTP is <0.005mg/L. The C_{final} figure of 0.055mg/L is higher than the Proposed Water Quality Standards for Surface Water of 0.035mg/L, however, the change due to the discharge is very minimal at only <0.005mg/L. The upstream figure of <0.05mg/L is also only a grab sample taken on two occasions which would not indicate a true figure for the river.

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

Flow of River (95%) = 0.09994 m³/sec
Average BOD in River (upstream) = <1.0 mg/L

Average volume of discharge = 0.000492 m³/sec
Average BOD in discharge = 20 mg/L

$$C_{\text{final}} = \frac{(0.09994 \times 1.0) + (0.000492 \times 20)}{0.09994 + 0.000492}$$

$C_{\text{final}} = <1.09 \text{ mg/L BOD}$

The increase in BOD due to the discharge of Aghabullogue WWTP is <0.09 mg/L.

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

Flow of River (95%) = 0.09994 m³/sec

Average Suspended Solids in River (upstream) = <2.5mg/L

Average volume of discharge = 0.000492 m³/sec

Average Suspended Solids in discharge = 30mg/L

$$C_{\text{final}} = \frac{(0.09994 \times 2.5) + (0.000492 \times 30)}{0.09994 + 0.000492}$$

$C_{\text{final}} = 2.635$ mg/L Suspended Solids

The increase in Suspended Solids due to the discharge of Aghabullogue WWTP is 0.135 mg/L.

Assimilative Capacity Calculations were not performed for the following parameters, as current levels are below those required by S.I. No. 12/2001

- (a) Arsenic
- (b) Chromium
- (c) Copper
- (d) Cyanide
- (e) Fluoride
- (f) Lead
- (g) Nickel
- (h) Zinc

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Provide details of the extent and type of ground emissions at the works.

There are no emissions to ground at the works.

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.

A screening programme was undertaken for the parameters set out in the Dangerous Substances Regulations S. I. No 12 of 2001 as per the table below. This programme measured the levels in the discharge from the WWTP on two occasions and measured river levels (upstream and downstream of the primary discharge point) on the Delehinagh River on two occasions also. It is evident that all parameters measured downstream were found to be below levels required by the Dangerous Substances Regulations.

Table F1-5: Dangerous Substances Monitoring

Parameter	Discharge		Upstream		Downstream	
	28-Jan-09	12-Feb-09	28-Jan-09	12-Feb-09	28-Jan-09	12-Feb-09
	µg/l		µg/l		µg/l	
Phenols	<0.10	*	<0.10	*	<0.10	*
Atrazine	<0.01	*	<0.01	*	<0.01	*
Dichloromethane	<1	*	<1	*	<1	*
Simazine	<0.01	*	<0.01	*	<0.01	*
Toluene	<1	*	<1	*	<1	*
Xylenes	<1	*	<1	*	<1	*
Arsenic	<0.96	*	<0.96	*	<0.96	*
Chromium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Copper	<0.02	*	<0.02	<0.02	<0.02	<0.02
Cyanide	<5	<0.02	<5	*	<5	*
Flouride	41	*	43	*	61	*
Lead (mg/L)	<0.02	*	<0.02	<0.02	<0.02	<0.02
Nickle (mg/L)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Zinc (mg/L)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Boron (mg/L)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Cadmium (mg/L)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Mercury	<0.2	*	<0.2	*	<0.2	*
Selenium	1.3	*	1.2	*	0.9	*
Barium (mg/L)	0.028	0.033	0.067	<0.02	0.057	<0.02

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

There are no abstractions downstream from the discharge points, however, the Delehinagh discharges into the Dripsey River which discharges into the River Lee reservoir. The water abstraction from the reservoir is approximately 12km downstream of the discharges from the treatment plant so the abstraction of water should not be affected by the discharges.

Indicate whether or not the emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have an effect a Natural Heritage Area, site of community importance under the habitats directive, special area of conservation or a site classified under the conservation of wild birds directive.

It is not considered that the emissions for the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have an effect on a Natural Heritage Area, site of community importance under the

habitats directive, special area of conservation or a site classified under the conservation of wild birds directive.

Details of any modelling of discharges from the agglomeration.

No modelling has been undertaken of the discharges from the agglomeration.

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.

The effluent from the primary and emergency discharge point is discharged to the Delehinagh River. The Delehinagh River joins the Dripsey River which in turn discharges to the River Lee reservoir.

There are no water abstractions from the Delehinagh River or the Dripsey River, although water is abstracted from the River Lee Reservoir, several kilometres downstream. It is noted that the Delehinagh River is not a direct tributary of the River Lee.

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.

Attachment included	Yes	No
	√	

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 (2006/113/EC).

Dangerous Substances Directive 2006/11/EC

A screening programme was undertaken for all of the substances listed in S.I. No 12/2001 – Water Quality (Dangerous Substances) Regulations, 2001 with the exception of tributyltin.

The assessment for atrazine, dichloromethane, simazine, toluene, xylenes, arsenic, chromium, lead and nickel showed that the discharge from the WWTP, the upstream and downstream river samples were all below the level required by the Regulations. The plant is operating satisfactory at present and is operating within the requirements of the relevant legislation, outlined above.

Water Framework Directive 2000/60/EC

The Delehinagh River has been determined to have a high Status under the Water Framework Directive.

The data in the assimilative capacity in Section F1 confirms the wastewater discharge has little effect on the overall river quality given adequate flow in the river and dispersion time.

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 Delehinagh River. There are also no areas of the Dripsey River which are designated SPAs.

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 is one public groundwater source in the surrounding area; this is located approximately 170m west of the discharge point. The source is a bored well located approximately 170m from the river. The groundwater source is a public supply which has a volume of 25m³/day supplying a population of 80.

There is also another public water source downstream of the discharge point; however, the nature of this source is infiltration. It is located 5Km downstream of the discharge point at approximately 20m from the river. This is a public supply which has a volume of 20m³/day supplying a population of 100.

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 water abstractions from the Delehinagh River or the Dripsey River, although water is abstracted from the River Lee Reservoir, several kilometres downstream. It is noted that the Delehinagh River is not a direct tributary of the River Lee. Check Attachment F.2. for further details.

Urban Waste Water Treatment Directive 91/271/EEC

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

The Regulations require that waste water arising from populations of less than 2000, shall, by the end of 2005, be subject to appropriate treatment prior to discharge. Appropriate treatment is defined as:

“...any process and / or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives and the relevant provisions of the Directive and of other community Directives”

The Aghabullogue Wastewater Treatment Plant was commissioned in 2006 and was designed to treat effluent to a 20/30ppm standard. These standards have been adopted to ensure compliance with the requirements of the Waste Water Treatment Regulations (S.I. 254 of 2001) as set out above.

The Second Schedule (Part 1) of the 2001 Regulations states that effluent should be treated to the following standards (see Table G1-1).

Table G1-1: 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 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 Delehinagh River is not a designated Sensitive Area. The rivers downstream including the Dripsey River and the River Lee are also not designated sensitive areas.

Shellfish Directive 2006/113/EC

The Delehinagh River is not a designated Shellfish Area under the Shellfish Waters Regulations, S.I. 268 of 2006. The Dripsey River, into which the Delehinagh River flows, is also not designated under these regulations.

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

None of the rivers in this area are cSACs, this includes the River Lee.

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.

Response Engineering carries out monitoring of the effluent from the waste water treatment plant on a regular basis on behalf of Cork County Council.

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 Delehinagh River 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 Aghabullogue wastewater treatment plant and the river itself is significantly lower than the concentration limits set in the directive.

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

Attachment included	Yes	No
		√

G.2 Compliance with the European Communities Environmental Objectives (Surface Waters) Regulations 2009

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 European Communities Environmental Objectives (Surface Waters) Regulations 2009 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 previously identified as the principal sources of pollution under the Phosphorous Regulations (S.I. No. 258 of 1998).

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

Attachment included	Yes	No
		√

Receiving Water Quality Requirement based on Phosphorus Regulations 2008

The WWTP does not incorporate phosphorus removal facilities. The plant discharges to the Delehinagh River which has High Status under the Water Framework Directive. The Draft European Communities Environmental Objectives (Surface Waters) Regulations 2008 set out in Table 9 the requirement to achieve a Molbydate Reactive Phosphorus (MRP) of ≤ 0.035 mg/l based on mean flows for River Water Bodies classified as having Good/High Status. As shown in the assimilative capacity in section F1 the C_{final} figure exceeds this slightly. However as stated in section F1 the upstream figure of < 0.05 mg/L for Orthophosphate is only a grab sample, the river was only tested on two occasions which indicates that the actual figure for Orthophosphate would more than likely be far less than the figure shown of 0.05mg/L. Therefore the WWTP should not have a major negative impact on the status of the river, with the

inclusion of phosphorus removal in the plant the levels of phosphorus being emitted will be reduced significantly

The EPA have no monitoring station on the Delehinagh River, however, they have two stations on the Dripsey River both upstream and downstream of the confluence with the Delehinagh River. The Q value of the Dripsey River at these points in 2005 was 4. The objective of the SWRBD report is to protect the water quality.

Effluent Standards

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

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

Table G2-1: Phosphorus Levels in Influent to WWTP

Parameter	Inlet Monitoring Station
	Response Eng. Annual Average 2008
Total-Phosphorus	4.6

Table G2-2: Phosphorus Levels in Effluent from WWTP

Parameter	Outlet Monitoring Station
	Response Eng. Annual Average 2008
Total-Phosphorus	1.0

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.

Based on the assimilative capacity assessments the plant discharge does not reduce both the chemical and ecological status of the Delehinagh River. Discharges from the proposed WWTP will not affect groundwater.

There are no Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas or European Sites which discharges from the proposed WWTP will affect. Nor are there any designated bathing waters, areas designated for the protection of shellfish or fresh water fish, or any water abstraction locations intended for human consumption that will be affected by the proposed WWTP discharges.

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

Attachment included	Yes	No
		√

G.4 Storm Water Overflows

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

There are no storm water overflows within the agglomeration other than those from the existing primary and secondary (emergency) discharges.

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

Attachment included	Yes	No
		√

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SECTION H: DECLARATION

Declaration

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

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

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

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

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

Print signature name: _____

Position in organisation: _____

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