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
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Tracking Amendments to Draft Application Form

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

		plants, where available. Amend wording of Section E.1 to request information on composite sampling/flow monitoring provisions.	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**

Non Technical Summary

Monaghan County Council is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the existing Waste Water Works at Smithboro. The Waste Water Works serving the town of Smithboro and the immediate environs comprises a network of gravity sewers, associated rising main and a Waste Water Treatment Works with a design capacity of 750 PE. The plant is supervised/manned 7 days a weeks for a minimum of 2 hours, giving a minimum total of 14 hours a week.

The Waste Water Treatment Works design capacity is 750 PE. The Works currently collects and treats domestic and trade effluent from a population equivalent of approximately 262. The Waste Water Treatment Plant treats in the region of 115 cubic metres of effluent every day and provides secondary treatment with nutrient removal (phosphorus reduction) for the effluent. The treated effluent has an average BOD concentration of 8mg/l and average suspended solids concentration of 11mg/l. Average concentrations of nutrients are as follows; orthophosphate 8.3 mg/l (P), Total Phosphorus 2.8 mg/l (P) and Total Nitrogen 24.5 mg/l (N).

The primary discharge of the Waste Water Works is to the Magherarney River at 257715E 329730N in the townland of Magherarney, Smithboro Co. Monaghan. The associated Waste Water Treatment Plant is located at 257696E 329765N also in the townland of Magherarney, Co. Monaghan.
The Magherarney River is not a designated Salmonid Water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988) nor is it identified as sensitive water in terms of the Urban Waste Water Treatment Regulations 2001. The river is not designated as an SPA, SAC or NHA. The Magherarney River is a tributary of the Finn River and although not designated it is recognised as an excellent coarse fishery with good quality bream.

The 50-percentile (0.7m^3/s) and 95-percentile (0.044m^3/s) flow rates in the Magherarney River have been estimated using a combination of actual flow data and computer modelling (Source: IE Consulting Engineers Report No. IE446/312) and for the purposes for this application the above flows have been used.

A Q value of 3 was recorded downstream of the discharge point (Station No. 0200 Magherarney Bridge) in 2004. A previous Q value of 2/0 was recorded at this location in 2001 and Q value of 3 in 1998. EPA physiochemical water quality monitoring data is available at this site for 2001 to 2003. This data gave a median BOD value of 2.5mg/l, median ortho-phosphate of 0.06mg/l, median total ammonia of 0.09mg/l and median oxidised nitrogen of 1.5mg/l.

A Q value of 4 was recorded upstream of the discharge point (Station No. 0200 Annamakiff Br (nearest upstream monitoring location) in 2004. A previous Q value of 3 was recorded in 2001; 3-4 was recorded at this location in 1998 and Q value of 3 in 1997. EPA physiochemical water quality monitoring data is available at this site for 2001 to 2003. This data gave a median BOD value of 2.3mg/l, median ortho-phosphate of 0.05mg/l, median total ammonia of 0.11mg/l and median oxidised nitrogen of 1.3mg/l.

The overall River Water Framework Directive status for the Magherarney River is 1a, hence it is at risk of failing to meet good status in 2015.

Monaghan County Councils upstream monitoring results indicate relatively good water quality in the river (average ammonia levels of 0.13 mg/l NH_3-N, average BOD of <2 mg/l, average TP of 0.12mg/l, average TN of 3.87mg/l N and average suspended solids of 8.08mg/l and a once off concentration of 0.04mg/l for ortho phosphate). MRP was calculated based on Total P values which gave a median MRP of 0.04mg P/l which is below the required target level (0.05mg/l) for this water body (Phosphorus Regulations, 1998). Dangerous substance concentrations were below detection level for 3 of the 19 parameters tested in April 2009. No levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

Results from the downstream monitoring site (aSW1(P)d) indicates generally good water quality with average ammonia 0.127 mg/l NH_3-N, average BOD of <2 mg/l, average TP of 0.143mg/l, average TN of 3.55mg/l N and average suspended solids of 8.12 mg/l and once off sampling of 0.045mg/l for Ortho Phosphate. MRP was calculated based on Total P values which gave a median MRP of 0.047mg P/l which is below the required target level (0.05mg/l) for this water body (Phosphorus Regulations, 1998). Dangerous substances concentrations were below detection level for 5 of the 19 parameters tested in April 2009. No levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

In summary, there is significant dilution capacity within the receiving water, even at low flows, to assimilate discharges from the Waste Water Works. Physiochemical water quality monitoring in the River both upstream and downstream of the primary discharge from the Waste Water Works indicate that the discharge from the works are not having a significant detrimental impact on the receiving environment.

SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration:	Smithboro

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*:	Monaghan County Council
Address:	Water Services
	County Offices
	The Glen
	Monaghan
Tel:	047 30500
Fax:	047 82739
e-mail:	info@monaghancoco.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*:	Mr Mark Johnston
Address:	Water Services
	County Offices
	The Glen
	Monaghan
Tel:	047 30500
Fax:	047 82739
e-mail:	mjohnston@monaghancoco.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:	
Tel:	
Fax:	
e-mail:	

*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:	
Tel:	
Fax:	
e-mail:	

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

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

Attachment included	**Yes**	**No**
	✓	

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

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

Name*:	Suzanne Clinton (Technician)
Address:	Smithboro WWTW, Magherarney, Smithboro, Co Monaghan
	Co. Monaghan
Grid ref (6E, 6N)	257696E 329765N
Level of Treatment	Secondary
Primary Telephone:	047 30500
Fax:	047 82739
e-mail:	sclinton@monaghancoco.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	Open Pipe Discharge
Unique Point Code	SW1(P)
Location	Magherarney, Smithboro, Co. Monaghan
Grid ref (6E, 6N)	257715E 329730N

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

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

B.4 Location of Secondary Discharge Point(s)

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

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

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

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

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

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

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

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

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

B.6 Planning Authority

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

Name:	Monaghan County Council
Address:	County Offices
	The Glen
	Monaghan
	Co. Monaghan
Tel:	047 30500
Fax:	047 82739
e-mail:	planning@monaghancoco.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***	√

A Part 8 planning Application or EIS was not required for this development.

Local Authority Planning File Reference Nº:	Not Applicable

Attachment B.6 should contain ***the most recent*** planning permission, including a copy of ***all*** conditions, and where an EIS was required, copies of any such EIS and any certification associated with the EIS, should also be enclosed. Where planning

permission is not required for the development, provide reasons, relevant correspondence, *etc.*

Attachment included	Yes	No
	√	

B.7 Other Authorities

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

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

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

Within the SFADCo Area	Yes	No
		√

B.7 (ii) Health Services Executive Region

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

Name:	Health Service Executive
Address:	Regional Health Office
	HSE Dublin & North East
	Dublin Road
	Kells,
	Co. Meath
Tel:	046 9280621
Fax:	046 9241784
e-mail:	rhodublinnortheast@mailq.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:	
Tel:	
Fax:	
e-mail:	

Relevant Authority Notified	Yes	No
		√

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

Attachment included	Yes	No
		√

B.8 Notices and Advertisements

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

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

Attachment included	Yes	No
	√	

B.9 (i) Population Equivalent of Agglomeration

TABLE B.9.1 POPULATION EQUIVALENT OF AGGLOMERATION

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

Population Equivalent	262 – Current PE 750 – Design PE
Data Compiled (Year)	2009
Method	Based on 60g BOD per head for PE

Date	Inlet Flow (Average Flow)	BOD (From Inlet)	BOD Load (From Inlet)	PE Equivalent (From Inlet) (based on 60g BOD per head for PE)
	m^3/day	mg/l	kg/day	mg/person/day
19/02/2008	90	190	17.1	285.00
26/03/2008	202	53	10.7	178.43
22/04/2008	73	460	33.6	559.67
28/05/2008	71	228	16.2	269.80
15/07/2008	88	186	16.4	272.80
27/08/2008	103	133	13.7	228.32
24/09/2008	188	62	11.7	194.27
22/10/2008	103	64	6.6	109.87
PE Equivalent				**262**

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.

As stated in the Smithboro Village Plan 2007-2013 and in Chapter 3 Settlement Strategy of the Monaghan County Development Plan 2007-2013, there is 85 hectares of land within the development envelope of which approximately 41 ha are available for development. From **Table 1** below 29 hectares of land are available for residential development (70% of lands available).

Village	Lands within Dev. Envelope ha	Lands Available for Dev. ha	Lands Residential Dev. ha (70% of lands available)	Hsg. Capacity @ 15 houses per hectare
Smithboro	85	41	29	435

At low density (15 houses per hectare) it is anticipated that approximately 435 housing units could be built during the Development Plan period if all land within the development limit was used for residential development. This could be a maximum population increase of 1349 based on an average household occupancy of 3.1. This would give a PE of 2099 (worst case scenario) which would leave the treatment plant well over its capacity. However, granting of developments would have to reflect the capacity of the WWTW.

Table 2 below tabulates planning permission granted (from 2008 to present) and associated population equivalents resulting from these permissions. This table was compiled in using Monaghan County Council's ePlan. The existing loading of the plant is approximately 262 PE. The total potentially committed but not yet contributing is 74.4 (based on planning permissions granted or conditional from 2008 to present (**Table 2**). The design capacity of the plant is 750, therefore the available capacity is 413.6 PE.

Table 2 below tabulates planning permission granted or conditional (from 2008 to present) and associated population equivalents resulting from these permissions.

File Number	Description	No of Units	Additional PE (Based on 3.1 Occupancy)
072268	Erect an additional 2 no. dwellings	2	6.2
07559	Build 3 no. two storey 3 bed townhouses in one block - Build 4 no. two storey 4 bed semi detached dwelling houses Build 4 no. two storey 3 bed semi-detached dwelling houses.	11	34.1
031007	Build 3 no. two storey 3-bed town houses; build 3 no. two storey 3-bed town houses and 5 no. two storey; 2-bed apartments on new site adjoining.	11	34.1
		24	**74.4**

As can be seen below, an approximate estimate for the plant loading in 2015 (life span of licence) is **484 PE**. As the plant is currently designed to cater for a PE of 750, it will be able to accommodate the extra hydraulic and organic load without posing an environmental risk to the receiving water habitat.

Smithboro		
Existing PE	**Pending PE**	**Projected increase to 2015 (based on Census 2006)**
262	74	148
Total (Existing + Pending Projected)		**484**

It should be noted that in the current economic climate it is probable that not all the housing permissions applied for within the timeframe of the licence for will be realised.

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 more than 10,000	€10,000

Appropriate Fee Included	Yes	No
	√	

B.10 Capital Investment Programme

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

No Capital Investment Programme has been prioritised for the development.

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

Attachment included	Yes	No
		√

B.11 Significant Correspondence

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

There have been no Section 63 notices issued by the Agency in relation to the Smithboro Waste Water Works under the Environmental Protection Agency Acts, 1992 and 2003, as amended by Section 13 of Protection of the Environment Act, 2003.

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

Attachment included	Yes	No
		√

B.12 Foreshore Act Licences.

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

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

Attachment included	Yes	No
		√

SECTION C: INFRASTRUCTURE & OPERATION

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

C.1 Operational Information Requirements

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

C.1.1 Storm Water Overflows

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

- An assessment to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency, and
- Identify whether any of the storm water overflows are to be decommissioned, and identify a date by which these overflows will cease, if applicable.

There are no stormwater overflows within the works.

C.1.2 Pumping Stations

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

There are no Council controlled pumping stations within the works.

- 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.

There are no emergency overflows

C.1 (i) Smithboro Waste Water Works

The Waste Water Works serving the town of Smithboro and the immediate environs comprises a network of gravity sewers, and associated rising main and a Waste Water Treatment Works with a design capacity of 750 P.E.

The primary discharge of the Waste Water Works is to the Magherarney River at 257715E 329730N in the townland of Magherarney, Smithboro Co. Monaghan. The associated Waste Water Treatment Plant is located at 257696E 329765N also in the townland of Magherarney, Co. Monaghan.

Pumping Station

There are no Council run pumping stations associated with the Works. There are three private pumping stations.

Smithboro Waste Water Treatment Plant

1.1 Waste Water Treatment Plant

1.1.1 General

The Waste Water Treatment Plant (WWTP) which provides treatment for a design load of 750 population equivalent comprises aeration by mechanical surface aerators followed by settlement and clarification.

The plant is designed to produce a fully nitrified effluent of 10:10mg/l BOD: Suspended Solids. Sludge from Smithboro Waste Water Treatment plant is tankered to Monaghan Town WWTP for treatment. The site plan and general arrangement of the Waste Water Treatment Plant is shown on **Drawing 2** of **Attachment B2** and **Drawing 6** in **Attachment C1**.

Waste Water Treatment Plant Design Criteria

Parameter	Value
Population Equivalent	750
DWF (m^3/day)	179
3 DWF (m^3/day)	537
Daily BOD_5 (kg/day)	43

The plant is supervised/manned 7 days a weeks for a minimum of 2 hours, giving a minimum total of 14 hours a week.

Treatment Process

The works consist of a flow meter and recorder on the inlet works which measures and records the flow of sewage into the plant. This then flows into the aeration tanks where the treatment takes place.

Treatment consists of a fixed mass of microorganisms within the aeration basin which when supplied with the design flow and required oxygen will reduce down the BOD_5 value to the required level. The mixture of sludge and final effluent then flows into the settlement tank where the sludge settles to the bottom of the tank and then is pumped back to the aeration basin. The final effluent then overflows the peripheral weir of the settlement tank and flows to the river, being of the required standard of 10mg/l or less.

Where the efficiency of the treatment within the aeration basin is reduced an extra facility is included in the works whereby the final liquor can be pumped to grass plots which aid to reduce the final BOD_5 level.

Grass Plots at Plant

Description of Plant Equipment

Aerators

The 2.2kw aerator supplies 105.6kg O_2 per day. The requirement for oxygen are generally 2kg 02 per kg BOD removed per day. This plant has been designed based on 43kg BOD per day; hence, the aerators can more than meet the oxygen requirement.

Overflow Weir

The overflow weir has been connected to the control panel where the D.O level within the aeration basin is monitored. When the level goes above 2Mg/l a signal is sent to the weir whereby it lowers itself and as a result the immersion of the aeration blade is also reduced. When the D.O. level goes below 1Mg/l, the weir is then activated again to raise the weir which in turn increases the immersion of the aerator blade.

Settlement Tank

The settlement tank has been designed based on an upward flow velocity of less of less than 1M/Hr whereby the sludge settles out to the bottom of the tank and the final effluent overspills the overflow weir.

Sludge Return/Effluent Pumps

(i) Sludge Return Pumps

These have been supplied to return the settled sludge in the settlement tank to the aeration tank to maintain fresh sludge within the aeration basin. When the sludge level raised or ages then some has to be removed to the sludge holding tank to maintain the

correct sludge level within the aeration basin. The sludge pumps are capable of returning sludge at a rate up to the rate of the incoming waste i.e. 3 D.W.F. 6.215l/s.

(ii) Effluent Pumps

These have been installed so that when the efficiency within the aeration basin drops and the final effluent is outside the permitted 10mg/l standard the effluent can be pumped to the grass plots which facilitate the BOD removal.

Nutrient Removal

Phosphorous Reduction

There is no facility in this treatment plant for the removal of phosphates.

Sludge

Settled sludge from the settlement tank is returned to the aeration tank to maintain fresh sludge within the aeration basin. When the sludge level raises or ages then some has to be removed to the sludge holding taken to maintain the correct sludge level within the aeration basin.

C.1(iii) Information on the Location of the Overflows and Final Discharge Locations from Such Overflows

The primary discharge point SW1(P) discharges to the Magherarney River at 257715E, 329730N. The location of the discharge is shown on **Drawing 3 of Attachment B3.**

Primary Discharge Location

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

Attachment included	Yes	No
	√	

C.2 Outfall Design and Construction

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

Primary Discharge Point - SW1(P)

The primary discharge point SW1(P) discharges to the Magherarney River which is a tributary of the River Finn. The location of the discharge is shown on **Drawing 3 of Attachment B3.** The discharge pipe is an open discharge 300mm diameter pipe.

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

Attachment included	Yes	No
	√	

SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT

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

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

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

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

D.1 Discharges to Surface Waters

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

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

Monitoring data for the influent for 2007 to 2009 is contained in **Table D.1(iv) Attachment D.1.**

Tables D.1(i)(a), (b) & **(c)** have been completed for the primary discharge are contained in **Attachment 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
SW1(P)	Primary	Monaghan Co. Co.	River	Magherarney River	Not Designated	257715	329730

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.

An estimation of the quantity of waste water likely to be emitted in relation to the primary discharge is contained in **Table E.1(i) of Attachment E1.**

Composite sampling is in place on the primary discharge.

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.

Environmental Monitoring & Sampling

The Monaghan County Council laboratory carries out the sampling of the discharges from the Smithboro Waste Water Treatment Plant and the monitoring of the water in the Magherarney River (Monaghan) upstream and downstream of the primary discharge. Sampling of the primary discharge from the Smithboro Waste Water Treatment Works and the monitoring of the upstream and downstream monitoring locations are undertaken every month. At present composite samples are taken of the influent and effluent and grab samples are taken for upstream and downstream monitoring points.

Euro Environmental Ltd carried out the analysis of the samples and is on the register of approved laboratories submitting data to the EPA. This register has been compiled in compliance with Section 66 of the EPA Act 1992.

Section 66 of the Environmental Protection Agency Act 1992 provides for the establishment of an intercalibration programme for the purpose of assessing analytical performance and ensuring the validity and comparability of environmental data for laboratories which submit data to the Agency. It also provides for the establishment of a register of quality approved laboratories.

Monitoring, Sampling & Analytical Procedures

Careful collection is carried out during all sampling to ensure that the relative proportions or concentrations of all pertinent components are the same in the samples as in the materials being sampled. The samples are also handled carefully to ensure that no significant change in the composition occurs before the tests are made.

During the waste water and water sampling all personnel wear safety boots and latex gloves at all times. Due care and attention is taken at all times.

All of the sampling points are located in places that have safe means of access.

The variability of the discharges and their effects on the receiving environment has been considered in determining the sampling programme. Equipment calibration and equipment maintenance are carried out in order to ensure accurate and reliable monitoring.

Further details on the annual sampling programme schedule for Smithboro are detailed below.

Plant Name	Design	Min No of Samples	Raw Influent	Final Effluent	River Up Stream	River Down stream	Total
Smithboro	PE 750	6	6	6	6	6	24

Euro Environmental Services, Drogheda, Co. Louth have also sampled and analysed for the dangerous substances and characterisation of emission parameters in 2009. Details of their accreditation of analysis are included in **Attachment E.2**.

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
SW1(P)s	Primary	S	257708	329759	N
aSW1(P)u	Primary	M	257721	329734	N
aSW1(P)d	Primary	M	257686	329706	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.

Sampling Data

Sampling Data pertaining to the discharge are tabled in **Attachment E.4**.

Monitoring Requirements & Treatment Standards

Smithboro Waste Water Works complies with the monitoring and treatment standards specified in the Urban Waste Water Treatment Regulations S.I 254 of 2001.

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.

General

The outfall from the Smithboro Waste Water Plant discharges to the Magherarney River, a tributary of the Finn (Monaghan) River, at National Grid Reference 257715E, 329730N in the townland of Magherarney, Smithboro Co. Monaghan.

The Magherarney River is not a designated Salmonid Water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988) nor is it identified as sensitive water in terms of the Urban Waste Water Treatment Regulations 2001. The river is not designated as an SPA, SAC or NHA. The Magherarney River is a tributary of the Finn River and although not designated it is recognised as an excellent coarse fishery with good quality bream.

The treated effluent has an average BOD concentration of 8mg/l and average suspended solids concentration of 11mg/l. Average concentrations of nutrients are as follows; orthophosphate 8.3 mg/l (P), Total Phosphorus 2.8 mg/l (P) and Total Nitrogen 24.5 mg/l (N).

A Q value of 3 was recorded downstream of the discharge point (Station No. 0200 Magherarney Bridge) in 2004 (see **Table 2** below). A previous Q value of 2/0 was recorded at this location in 2001 and Q value of 3 in 1998. EPA physiochemical water quality monitoring data is available at this site for 2001 to 2003. This data gave a median BOD value of 2.5mg/l, median ortho-phosphate of 0.06mg/l, median total ammonia of 0.09mg/l and median oxidised nitrogen of 1.5mg/l.

A Q value of 4 was recorded upstream of the discharge point (Station No. 0200 Annamakiff Br (nearest upstream monitoring location) in 2004 (see **Table 2** below). A previous Q value of 3 was recorded in 2001; 3-4 was recorded at this location in 1998 and Q value of 3 in 1997. EPA physiochemical water quality monitoring data is available at this site for 2001 to 2003. This data gave a median BOD value of 2.3mg/l, median

ortho-phosphate of 0.05mg/l, median total ammonia of 0.11mg/l and median oxidised nitrogen of 1.3mg/l.

Table 2 Biological Quality Ratings (Q Values) (Source EPA)

Location	Station Number	Station	1997	1998	2001	2004
Downstream	**0200**	Magherarney Br.	3	3	2/0	3
Upstream	**0200**	Annamakiff Br	3	3-4	3	4

(**Q4 –** Good Status**, Q3-4 & Q3 =** moderately Polluted**; Q2/0 =**heavily polluted)

The overall River Water Framework Directive status for the Magherarney River is 1a, hence it is at risk of failing to meet good status in 2015.

Monaghan Co. Co. monitors the river both upstream and downstream of the discharge from the Waste Water Works. These locations are shown on **Drawing 4** of **Attachment B3**. Monitoring data collected for the year 2007 to 2009 is presented in **Tables F.1(i)a aSW1(P)u** and **aSW1(P)d**. Monitoring results for dangerous substances relate to a once-off samples collected in May 2009 and are presented in **Tables F.1(i)b aSW(P)u** and **aSW(P)d**.

Monaghan County Councils upstream monitoring results indicate relatively good water quality in the river (average ammonia levels of 0.13 mg/l NH_3-N, average BOD of <2 mg/l, average TP of 0.12mg/l, average TN of 3.87mg/l N and average suspended solids of 8.08mg/l and a once off concentration of 0.04mg/l for ortho phosphate). MRP was calculated based on Total P values which gave a median MRP of 0.04mg P/l which is below the required target level (0.05mg/l) for this water body (Phosphorus Regulations, 1998). Dangerous substance concentrations were below detection level for 3 of the 19 parameters tested in April 2009. No levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

Results from the downstream monitoring site (aSW1(P)d) indicates generally good water quality with average ammonia 0.127 mg/l NH_3-N, average BOD of <2 mg/l, average TP of 0.143mg/l, average TN of 3.55mg/l N and average suspended solids of 8.12 mg/l and once off sampling of 0.045mg/l for Ortho Phosphate. MRP was calculated based on Total P values which gave a median MRP of 0.047mg P/l which is below the required target level (0.05mg/l) for this water body (Phosphorus Regulations, 1998). Dangerous substances concentrations were below detection level for 5 of the 19 parameters tested in April 2009. No levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

Assimilative Capacity of Receiving Water

The impact of the primary discharge point on the Magherarney River is evaluated in the Assimilative Capacity calculations below.

The 50-percentile and 95-percentile flow rates in the Magherarney River have been estimated using a combination of actual flow data and computer modelling (Source: IE Consulting Engineers Report No. IE446/312). For the purposes for this application the above flows have been used.

The estimated flows are as follows:

50-percentile flow (assumed to be the same as median flow): 0.7 m^3/s
95-percentile flow: 0.044 m^3/s

Using the Magherarney River flow rates outlined above and the Magherarney River background water quality (Monaghan Co Co and EPA Data), an assimilative capacity assessment of the Magherarney River has been carried out under 50-percentile and 95-percentile flow conditions for BOD, SS, OP, Phosphorous, ammonia and nitrates.

The assessment has been undertaken on the basis of an average discharge flow to the receiving water from the Plant.

BOD Assimilative Capacity

50-percentile flow conditions

The BOD assimilative capacity of the river under 50-percentile flow conditions can be calculated by:

AC = $(C_{max} - C_{back}) \times 86.4 \times Q_{50}$

where,

AC = waste assimilative capacity
C_{max} = maximum permissible BOD concentration in the watercourse (in this case taken as a maximum of 4 mg/l)
C_{back} = Average background BOD level upstream (<2 mg/l)
86.4 = factor to convert WAC to a daily load (kg/day)
Q_{50} = 50-percentile flow in m^3/s (0.7 m^3/s)

Therefore,

AC = (4 – 2) x 86.4 x 0.7

AC = 120.96 kg/day

Total Amount Discharge to River:

With an average effluent discharge volume of 115m^3/day, the total amount of BOD discharged to the Magherarney River shall be:

115,000l/day x 8 mg/l = **0.92kg/day**

This constitutes 0.8% of the assimilative capacity (AC) of the Magherarney River as outlined above.

The **resulting BOD concentration in the river** can be estimated from the formula:

The resulting BOD concentration in the river resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;
CR = resulting concentration in river (mg/l)
C_d = average concentration in discharge (8mg/l)
C_{back} = concentration in river u/s of discharge (<2mg/l)
Q_{back} = flow of river (l/d) (50% flow of 0.7m^3/s = 60,480,000l/d
Q_d = discharge volume (l/d) 115,000l/d

$1m^3/s$ = 86,400,000 l/d
Therefore:

CR = [(2 x 60,480,000) + (8 x 115,000)] / [60,480,000 + 115,000]
CR = 2.011 mg/l

95-percentile Flow Conditions

The BOD assimilative capacity of the river under 95-percentile flow conditions can be calculated by:

AC = $(C_{max} - C_{back}) \times 86.4 \times Q_{95}$ [National Urban Waste Water Study 2005]

where,

AC = waste assimilative capacity
C_{max} = maximum permissible BOD concentration in the watercourse (in this case taken as a maximum of 4 mg/l)
C_{back} = Average background BOD level upstream (<2 mg/l)
86.4 = factor to convert WAC to a daily load (kg/day)
Q_{95} = 95-percentile flow in m^3/s (0.044 m^3/s or 3,801,600l/d)

Therefore,

AC = (4 – 2) x 86.4 x 0.044

AC = 7.6 kg/day

Total Amount Discharge to River:

With an average effluent discharge volume of 115m^3/day, the total amount of BOD discharged to the Magherarney River shall be:

115,000l/day x 8 mg/l = **0.92kg/day**

This constitutes **12%** of the assimilative capacity of the Magherarney River as outlined above.

The **resulting BOD concentration in the river** resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)
C_d = average concentration in discharge (8mg/l)
C_{back} = concentration in river u/s of discharge (<2mg/l)
Q_{back} = flow of river (l/d) (95% flow of 0.044m^3/s = 3,801,600l/d
Q_d = discharge volume (l/d) 115,000l/d

$1m^3/s$ = 86,400,000 l/d

Therefore:

CR = [(2 x 3,801,600) + (8 x 115,000)] / [3,801,600 + 115,000]

CR = 2.18 mg/l

BOD Summary Result

BOD	50-percentile Flow	95-percentile Flow
Assimilative Capacity of River	120.96kg/day	7.6kg/day
Total Amount Discharged	0.92kg/day	0.92kg/day
% of Assimilative Capacity Absorbed	8%	12%
Existing Average Background Upstream	<2mg/l	<2mg/l
Resultants Conc in River	2.011mg/l	2.18mg/l

The above calculations indicate the discharge, in terms of BOD concentration, is not impacting on the water quality of the river and the resultant concentration downstream is within the EQS of <4mg/l for all flow conditions.

Phosphorous Assimilative Capacity

Monaghan Co Co and EPA samples taken upstream and downstream of the discharge point in 2009 indicate average orthophosphate concentrations of 0.04 mg/l and 0.045mg/l respectively. The average Total Phosphorus upstream and downstream is 0.12 and 0.14mg/l respectively (Upstream: MRP 0.04mg/P/l and Downstream: MRP 0.45mgP/).

A current Q value downstream of the discharge point (Station No. 0200 Magherarney Bridge) is Q3 with a Minimum Target Biological Quality (Q) Rating/Q Index of 3-4 or Molybdate-Reactive Phosphate Median Concentration(ugP/L) of 50 (Phosphorus Regulations, 1998).

The MRP (as Total P) concentration of the river as result of the discharge is calculated below using the 50%ile flow rate for the river and also the 95%ile flow rate (Station 03058).

50-percentile flow conditions

The resulting OP concentration in the river resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;
CR = resulting concentration in river (mg/l)
C_d = average concentration in discharge (2.8mg P /l)
C_{back} = concentration in river u/s of discharge (0.12mg/l Monaghan Co Co Data)
Q_{back} = flow of river (l/d) (50% flow of 0.7m^3/s = 60,480,000l/d
Q_d = discharge volume (l/d) 115,000l/d

Therefore:

CR = [(0.12 x 60,480,000) + (2.8 x 115,000)] / [60,480,000 + 115,000]
CR = 0.13 mg/l (Total P) = 0.04mg P/l MRP = 40ug/l MRP
Final River Concentration = 0.13 mg/l (Total P) = **0.04 MPR as Total P = 40ugP/L**

(below target level of 0.05mg/l set out in Phosphorus Regulations)

95-percentile flow conditions

The resulting OP concentration in the river resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;
CR = resulting concentration in river (mg/l)
C_d = average concentration in discharge (2.8mg/l)
C_{back} = concentration in river u/s of discharge (Monaghan Co Co data 0.12mg/l)
Q_{back} = flow of river (l/d) (95% flow of 0.044m^3/s = 3,801,600l/d
Q_d = discharge volume (l/d) 115,000l/d

Therefore:

CR = [(0.12x 3,801,600) + (2.8 x 115,000)] / [3,801,600 + 115,000]

CR = 0.19mg/l = **0.06 MPR as Total P = 60ugP/L**

(slightly above target level of 0.05mg/l set out in Phosphorus Regulations)

Total P & MRP - Summary Results

The results below indicate that the target of 0.05mg/l is not met at the 50-percentile and 95-percentile flow.

Total P & MRP	50-percentile Flow	95-percentile Flow
Existing Average Background Upstream	0.12mg/l	0.12mg/l
Resultants Conc in River (Total P mg/l))	0.12mg/l	0.19mg/l
Resultants Conc in River (MRP mg P/l)	0.04mg P/l	0.06mg P/l

* The Molybdate Reactive Phosphate (MRP) concentration was derived using Total P = 3.07 x MRP

The calculations above predict that the Blackwater River has the capacity to assimilative the discharge in terms of Total Phosphorous and MRP. The resultant MRP concentrations are slightly elevated for the 95-percentile flow. However data collected by Monaghan County Council would concur that the Blackwater has the capacity to assimilate the discharge.

Suspended Solids (SS) Assimilative Capacity

50-percentile flow conditions

The suspended solids assimilative capacity of the river under 50-percentile flow conditions can be calculated by:

AC = (C_{max} – C_{back}) x 86.4 x Q_{50}

where,

AC = waste assimilative capacity
C_{max} = maximum permissible SS concentration in the watercourse (in this case taken as a maximum of 25mg/l)
C_{back} = Average background SS level upstream (8 mg/l)
86.4 = factor to convert WAC to a daily load (kg/day)
Q_{50} = 50-percentile flow in m^3/s (0.7 m^3/s)

Therefore,

AC = (25 – 8) x 86.4 x 0.7

AC = 1028.16 kg/day

Total Amount Discharge to River:

With an average effluent discharge volume of 115m^3/day, the total amount of SS discharged to the Magherarney River shall be:

115,000l/day x 11mg/l = **1.265kg/day**

This constitutes 0.12% of the assimilative capacity of the Magherarney River as outlined above.

The resulting SS concentration in the river resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)
C_d = average concentration in discharge (11mg/l)
C_{back} = concentration in river u/s of discharge 8mg/l)
Q_{back} = flow of river (l/d) (50% flow of 0.7m^3/s = 60,480,000l/d
Q_d = discharge volume (l/d) 115,000l/d

1m^3/s = 86,400,000 l/d

Therefore:

CR = [(8 x 60,480,000) + (11 x 115,000)] / [60,480,000 + 115,000]

CR = 8.01 mg/l

95-percentile Flow Conditions

The SS assimilative capacity of the river under 95-percentile flow conditions can be calculated by:

AC = (C_{max} – C_{back}) x 86.4 x Q_{95} [National Urban Waste Water Study 2005]

where,

AC = waste assimilative capacity
C_{max} = maximum permissible SS concentration in the watercourse (in this case taken as a maximum of 25 mg/l)
Cback = Average background SS level upstream (8 mg/l)
86.4 = factor to convert WAC to a daily load (kg/day)
Q_{95} = 95-percentile flow in m^3/s (0.044 m^3/s or 3,801,600l/d)

Therefore,

AC = (25 – 8) x 86.4 x 0.044

AC = 64.62 kg/day

Total Amount Discharge to River:

With an average effluent discharge volume of 115m^3/day, the total amount of SS discharged to the Magherarney River shall be:

115,000l/day x 8 mg/l = **0.92kg/day**

This constitutes 1.42% of the assimilative capacity of the Magherarney River as outlined above.

The **resulting SS Concentration in the River** can be estimated from the formula:

The resulting SS concentration in the river resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)
C_d = average concentration in discharge (11mg/l)
C_{back} = concentration in river u/s of discharge (8mg/l)
Q_{back} = flow of river (l/d) (95% flow of 0.044m^3/s = 3,801,600l/d
Q_d = discharge volume (l/d) 115,000l/d
1m^3/s = 86,400,000 l/d
Therefore:

CR = [(8 x 3,801,600) + (11 x 115,000)] / [3,801,600 + 115,000]

CR = 8.1 mg/l

SS Summary Result

Suspended Solids	50-percentile Flow	95-percentile Flow
Assimilative Capacity of River	1028.16kg/day	64.62kg/day
Total Amount Discharged	1.265kg/day	1.265kg/day
% of Assimilative Capacity Absorbed	0.12%	1.42%
Existing Average Background Upstream	8	8
Resultants Conc in River	8.01	8.1

These results show that the impact of the discharge, in term of SS, can be assimilated into the river. Assimilation capacity calculations indicate that the SS EQS are met downstream of the discharge point.

Nitrates Assimilative Capacity

50-percentile flow conditions

The Nitrate assimilative capacity of the river under 50-percentile flow conditions can be calculated by:

AC = (C_{max} – C_{back}) x 86.4 x Q_{50}
where,

AC = waste assimilative capacity
C_{max} = maximum permissible nitrate concentration in the watercourse (in this case taken as a maximum of 50 mg/l)
C_{back} = Average background nitrate level upstream (0.96 mg/l)
86.4 = factor to convert WAC to a daily load (kg/day)
Q_{50} = 50-percentile flow in m^3/s (0.7 m^3/s)

Therefore,

AC = (50-0.96) x 86.4 x 0.7

AC = 2965.9 kg/day

Total Amount Discharge to River:
With an average effluent discharge volume of 115m^3/day, the total amount of nitrate discharged to the Magherarney River shall be:

115,000l/day x 0.96 mg/l = **0.11kg/day**

This constitutes 0.004% of the assimilative capacity of the Magherarney River as outlined above.

The **resulting nitrate concentration in the river** resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)

C_d = average concentration in discharge (3.18mg/l)
C_{back} = concentration in river u/s of discharge (0.96mg/l)
Q_{back} = flow of river (l/d) (50% flow of 0.7m^3/s = 60,480,000l/d
Q_d = discharge volume (l/d) 115,000l/d

Therefore:

CR = [(0.96 x 60,480,000) + (3.18 x 115,000)] / [60,480,000 + 115,000]

CR = 0.9642 mg/l

95-percentile Flow Conditions

The nitrate assimilative capacity of the river under 95-percentile flow conditions can be calculated by:

AC = (C_{max} – C_{back}) x 86.4 x Q_{95} [National Urban Waste Water Study 2005]

AC = waste assimilative capacity
C_{max} = maximum permissible concentration in the watercourse (in this case taken as a maximum of 50 mg/l)
Cback = Average background level upstream (0.96 mg/l)
86.4 = factor to convert WAC to a daily load (kg/day)
Q_{95} = 95-percentile flow in m^3/s (0.044 m^3/s or 3,801,600l/d)

Therefore,
AC = (50 – 0.96) x 86.4 x 0.044

AC = 186.4 kg/day

Total Amount Discharge to River:

With an average effluent discharge volume of 115m^3/day, the total amount of nitrate discharged to the Magherarney River shall be:

115,000l/day x 0.96 mg/l = **0.11kg/day**

This constitutes 0.49% of the assimilative capacity of the Magherarney River as outlined above.

The resulting nitrate concentration in the river resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;
CR = resulting concentration in river (mg/l)
C_d = average concentration in discharge (3.18mg/l)
C_{back} = concentration in river u/s of discharge (0.96mg/l)
Q_{back} = flow of river (l/d) (95% flow of 0.044m^3/s = 3,801,600l/d
Q_d = discharge volume (l/d) 115,000l/d

Therefore:

CR = [(0.96 x 3,801,600) + (3.18 x 115,000)] / [3,801,600 + 115,000]
CR = 1.025 mg/l

Nitrate Summary Result

Nitrate	50-percentile Flow	95-percentile Flow
Assimilative Capacity of River	2965.9kg/day	186.4kg/day
Total Amount Discharged	0.11kg/day	0.11kg/day
% of Assimilative Capacity Absorbed	0.004%	0.49%
Existing Average Background Upstream	0.96mg/l	0.96mg/l
Resultants Conc in River	0.9642mg/l	1.025mg/l

Summary

The assimilative capacity calculations above indicate that there is significant dilution capacity within the receiving water, even at low flows, to assimilate discharges from the Waste Water Works in terms of suspended solids, BOD, Nitrates, TP and MRP.

The results of the assimilative capacity are consistent with the physiochemical water quality monitoring results (EPA and Monaghan Co Co Data) and indicate that the discharges from the works are not having a significant detrimental impact on the receiving environment.

- 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.

  Tables F.1 (i) (a) & **(b)** are completed for the primary discharge point.

- 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.

  There are no secondary discharge points. **Tables F.1 (ii) (a)** & **(b)** are therefore not completed.

  There are no impacts on ground water or other environmental media. The impact of the primary discharge point on the Magherarney River is evaluated in the assimilative capacity calculations above.

- 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.

  A copy of the summary leaflet of the Draft River Basin Management Plan for the North Western International River Basin District summary leaflet is contained in **Attachment G2**.

  There is no designation of the Magherarney River. It is not designated as sensitive water, fisheries or bathing 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.

  The level of dangerous substances both in the effluent and in the Magherarney River upstream and downstream of the discharge point as detailed in **Tables D1** and **F1** show a level below those in the Water Quality (Dangerous Substances) Regulations 2001 and therefore the emissions are not considered 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.

  There are no water abstractions downstream of the plant.

- 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)

There is no designated site within the vicinity of the discharge point.

Emissions from the Wastewater Treatment site will not have a significant effect on any designated site. There has been no correspondence with the National Parks and Wildlife Service in connection with the existing or proposed discharge.

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

The impact of the discharge from the Smithboro wastewater treatment works has been calculated in the Assimilative Capacity calculations above. These results show that the impact of the discharge can be assimilated into the river and will not have a pollution effect over long distances.

- 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.**

There are no modelling details pertaining to the discharges from the agglomeration.

Attachment included	Yes	No
	√	

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

Applicants should submit the following information for each downstream or down gradient 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.

There are no water abstractions downstream of the discharge point.

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.

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 (79/923/EEC).

No Programme of Improvements has been prioritised for the development. The treatment works has been designed to comply with the above Directives.

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

Attachment included	Yes	No
		√

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

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

Water Quality Management Plans or Catchment Management Plans

The summary leaflet of the Draft River Basin Management Plan for the North Western International River Basin District summary leaflet is contained in **Attachment G2**.

The nearest "Baseline Monitoring Station" to the plant is at the Magherarney Bridge downstream of the discharge from the point. Monaghan County Councils "Phosphate Implementation Report 2006" indicates that the current Q value at this site for 2003-2005 was Q3 with a MRP value of 120ug/l P. Hence, the Target OP concentration for this station was Q3-4 or an annual median orthophosphate concentration target was 50ug/l (see **Attachment G2**).

Monaghan Co Co monitoring results downstream of the plant concur with the above, with a median MRP value of 0.045mg P/l recorded in 2008-2009 (below the target of 0.05mg P/l).

The assimilative capacity calculations carried out show that the Blackwater River has the capacity to assimilative the discharge from the Smithboro plant in terms of Total Phosphorous and MRP. However, the resultant MRP concentrations were 0.01mg/l above the concentration target of 0.05mg P/l (Phosphorous Regulations, 1998) for the 95-percetile flow.

From the above there is no significant impact of the discharge on the TP and MRP concentrations in the River.

The Council Phosphate Implementation Report 2006 is contained in **Attachment G2**.

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

Attachment included	Yes	No
	√	

G.3 Impact Mitigation

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

No Programme of Improvements has been prioritised for the development.

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

Attachment included	Yes	No
		√

G.4 Storm Water Overflow

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

Not Applicable.

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

Attachment included	Yes	No
		√

SECTION H: DECLARATION

Declaration

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

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

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

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

Signed by: _____ **Date:** 15 6 09
(on behalf of the organisation)

Print signature name: MARK FOLLSTON

Position in organisation: S.E.E

Agglomeration details

Leading Local Authority	Monaghan County Council
Co-Applicants	
Agglomeration	Smithboro Waste Water Treatment Works
Population Equivalent	750
Level of Treatment	Secondary
Treatment plant address	Smithboro WWTW, Magherarney, Smithboro, Co Monaghan
Grid Ref (12 digits, 6E, 6N)	257696 / 329765
EPA Reference No:	

Contact details

Contact Name:	Mark Johnston
Contact Address:	County Offices, The Glen Monaghan Co. Monaghan
Contact Number:	047 30500
Contact Fax:	047 82739
Contact Email:	mjohnston@monaghancoco.ie

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

Discharge Point Code: SW-1

Local Authority Ref No:		
Source of Emission:	Smithboro Waste Water Treatment Plant	
Location:	Smithboro, Co Monaghan	
Grid Ref (12 digits, 6E, 6N)	257715 / 329730	
Name of Receiving waters:	Magherarney River	
Water Body:	River Water Body	
River Basin District	North Western IRBD	
Designation of Receiving Waters:	Not Designated	
Flow Rate in Receiving Waters:	0.01	$m^3.sec^{-1}$ Dry Weather Flow
	0.044	$m^3.sec^{-1}$ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	Dry Weather Flow (DWF) = 0.01m3/sec. This value is based on typical 95%ile versus Dry Weather Flow for other rivers and the actual DWF was not recorded.	

Emission Details:

(i) Volume emitted			
Normal/day	115 m^3	Maximum/day	188 m^3
Maximum rate/hour	7.8 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.001 m^3/sec		

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

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
pH	pH	24 hr flow proportional	= 8	
Temperature	°C	24 hr flow proportional	= 11.3	
Electrical Conductivity (@ 25°C)	µS/cm	24 hr flow proportional	= 825	
Suspended Solids	mg/l	24 hr flow proportional	= 26	2.99
Ammonia (as N)	mg/l	24 hr flow proportional	= 7.66	0.881
Biochemical Oxygen Demand	mg/l	24 hr flow proportional	= 22	2.53
Chemical Oxygen Demand	mg/l	24 hr flow proportional	= 61	7.015
Total Nitrogen (as N)	mg/l	24 hr flow proportional	= 71.93	8.272
Nitrite (as N)	mg/l	24 hr flow proportional	= 0.03	0.0035
Nitrate (as N)	mg/l	24 hr flow proportional	= 3.18	0.3657
Total Phosphorous (as P)	mg/l	24 hr flow proportional	= 4.5	0.5175
OrthoPhosphate (as P)	mg/l	24 hr flow proportional	= 1.82	0.2093
Sulphate (SO_4)	mg/l	24 hr flow proportional	= 63	7.245
Phenols (Sum)	µg/l	24 hr flow proportional	< 0.1	0

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

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

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
Atrazine	µg/l	24 hr flow proportional	< 0.01	0
Dichloromethane	µg/l	24 hr flow proportional	< 1	0
Simazine	µg/l	24 hr flow proportional	< 0.01	0
Toluene	µg/l	24 hr flow proportional	< 0.28	0
Tributyltin	µg/l	24 hr flow proportional	< 0.02	0
Xylenes	µg/l	24 hr flow proportional	< 1	0
Arsenic	µg/l	24 hr flow proportional	< 0.96	0
Chromium	µg/l	24 hr flow proportional	< 0.93	0
Copper	µg/l	24 hr flow proportional	= 2	0.08395
Cyanide	µg/l	24 hr flow proportional	< 5	0
Flouride	µg/l	24 hr flow proportional	= 160	6.716
Lead	µg/l	24 hr flow proportional	< 0.38	0
Nickel	µg/l	24 hr flow proportional	= 3.18	0.133481
Zinc	µg/l	24 hr flow proportional	= 15.9	0.6674
Boron	µg/l	24 hr flow proportional	= 131.9	5.5365
Cadmium	µg/l	24 hr flow proportional	< 0.09	0
Mercury	µg/l	24 hr flow proportional	< 0.2	0
Selenium	µg/l	24 hr flow proportional	= 1	0.04198
Barium	µg/l	24 hr flow proportional	= 67.7	2.8417

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

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

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)
SW-1	365	41975

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

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

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

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	257686 / 329706

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	24/09/08	22/10/08	16/03/09	14/04/09			
pH				= 7.9	Grab	0.01	Method 4500-H+/Electrometry
Temperature				= 9.3	Grab	0	0
Electrical Conductivity (@ 25°C)				= 474	Grab	0.5	Method 2510 B/Electrometry
Suspended Solids	= 7	= 7	= 3	= 12	Grab	3	Method 2540 D/Filtration/Dry in 104C
Ammonia (as N)				= 0.06	Grab	0.06	Method 4500NH3F/Colorimetry
Biochemical Oxygen Demand	= 2	= 2	= 2	< 2	Grab	2	Method 5210 B/Electrometry
Chemical Oxygen Demand	= 19	= 22	= 10	= 32	Grab	5	Method 5220 D/Spectrophotometry
Dissolved Oxygen				= 0	Grab	0	DO Meter
Hardness (as $CaCO_3$)				= 0	Grab	0	0
Total Nitrogen (as N)	= 1.03	= 2.23	= 3.26	= 1.06	Grab	1	Calculation
Nitrite (as N)				= 0.022	Grab	0.003	Method 4500-NO2-B/Colorimetry
Nitrate (as N)				= 1.04	Grab	0.09	Method 4500-NO3-H/Colorimetry
Total Phosphorous (as P)	= 0.092	= 0.061	= 0.073	= 0.135	Grab	0.042	Method 4500-P E/Colorimetry
OrthoPhosphate (as P)				= 0.045	Grab	0.004	Method 4500-P E/Colorimetry
Sulphate (SO_4)				= 30.08	Grab	1.39	Method 4500-SO42-E/Colorimetry
Phenols (Sum)				< 0.1	Grab	0.1	EPA Method 525 GCMS

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

Additional Comments:	No Hardness or Dissolved Oxygen Data Available

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

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	257686 / 329706

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	14/04/09						
Atrazine	< 0.01				Grab	0.01	USEPA Method 610 HPLC
Dichloromethane	< 1				Grab	1	USEPA Method 524 GCMS
Simazine	< 0.01				Grab	0.01	USEPA Method 610 HPLC
Toluene	< 0.28				Grab	0.28	USEPA Method 524.2 GCMS
Tributyltin	< 0.02				Grab	0.02	Subcontracted Test GCMS
Xylenes	< 1				Grab	1	USEPA Method 524.2 GCMS
Arsenic	< 0.96				Grab	0.96	USEPA Method 3125B ICPMS
Chromium	< 0.93				Grab	0.93	USEPA Method 3125B ICPMS
Copper	= 1				Grab	0.2	USEPA Method 3125B ICPMS
Cyanide	< 5				Grab	5	Hach Water Analysis Handbook 2nd Edition
Flouride	= 170				Grab	0.03	Method 4500 F - E Colorimetry
Lead	< 0.38				Grab	0.38	USEPA Method 3125B ICPMS
Nickel	= 1.2				Grab	0.47	USEPA Method 3125B ICPMS
Zinc	< 4.6				Grab	4.6	USEPA Method 3125B ICPMS
Boron	< 4.2				Grab	4.2	USEPA Method 3125B ICPMS
Cadmium	< 0.09				Grab	0.09	USEPA Method 3125B ICPMS
Mercury	< 0.2				Grab	0.2	USEPA Method 3125B ICPMS
Selenium	= 2				Grab	0.74	USEPA Method 3125B ICPMS

Barium	= 76.4				Grab	0.74	USEPA Method 3125B ICPMS

Additional Comments:	

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

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	257721 / 329734

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	24/09/08	22/10/08	16/03/09	14/04/09			
pH				= 7.9	Grab	0.01	Method 4500-H+/Electrometry
Temperature				= 9.5	Grab	0	0
Electrical Conductivity (@ 25°C)				= 472	Grab	0.5	Method 2510 B/Electrometry
Suspended Solids	= 3	= 5	= 3	= 15	Grab	3	Method 2540 D/Filtration/Dry in 104C
Ammonia (as N)				= 0.06	Grab	0.06	Method 4500NH3F/Colorimetry
Biochemical Oxygen Demand	= 2	= 2	= 2	< 2	Grab	2	Method 5210 B/Electrometry
Chemical Oxygen Demand	= 26	= 21	= 13	= 29	Grab	5	Method 5220 D/Spectrophotometry
Dissolved Oxygen				= 0	Grab	0	DO Meter
Hardness (as $CaCO_3$)				= 0	Grab	0	0
Total Nitrogen (as N)	= 2.39	= 2.85	= 2.49	= 1.54	Grab	1	Calculation
Nitrite (as N)				= 0.02	Grab	0.003	Method 4500-NO2-B/Colorimetry
Nitrate (as N)				= 0.96	Grab	0.09	Method 4500-NO3-H/Colorimetry
Total Phosphorous (as P)	= 0.06	= 0.08	= 0.11	= 0.12	Grab	0.042	Method 4500-P E/Colorimetry
OrthoPhosphate (as P)				= 0.04	Grab	0.004	Method 4500-P E/Colorimetry
Sulphate (SO_4)				= 28.51	Grab	1.39	Method 4500-SO42-E/Colorimetry
Phenols (Sum)				< 0.1	Grab	0.1	EPA Method 525 GCMS

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

Additional Comments:	No Hardness or Dissolved Oxygen Data Available.

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

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	257721 / 329734

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	14/04/09						
Atrazine	< 0.01				Grab	0.01	USEPA Method 610 HPLC
Dichloromethane	< 1				Grab	1	USEPA Method 524 GCMS
Simazine	< 0.01				Grab	0.01	USEPA Method 610 HPLC
Toluene	< 0.28				Grab	0.28	USEPA Method 524.2 GCMS
Tributyltin	< 0.02				Grab	0.02	Subcontracted Test GCMS
Xylenes	< 1				Grab	1	USEPA Method 524.2 GCMS
Arsenic	< 0.96				Grab	0.96	USEPA Method 3125B ICPMS
Chromium	< 0.93				Grab	0.93	USEPA Method 3125B ICPMS
Copper	= 3				Grab	0.2	USEPA Method 3125B ICPMS
Cyanide	< 5				Grab	5	Hach Water Analysis Handbook 2nd Edition
Flouride	= 170				Grab	0.03	Method 4500 F - E Colorimetry
Lead	< 0.38				Grab	0.38	USEPA Method 3125B ICPMS
Nickel	= 1.9				Grab	0.47	USEPA Method 3125B ICPMS
Zinc	< 4.6				Grab	4.6	USEPA Method 3125B ICPMS
Boron	< 4.2				Grab	4.2	USEPA Method 3125B ICPMS
Cadmium	< 0.09				Grab	0.09	SEPA Method 3125B ICPMS
Mercury	< 0.2				Grab	0.2	USEPA Method 3125B ICPMS
Selenium	= 1				Grab	0.74	USEPA Method 3125B ICPMS
Barium	= 82.6				Grab	0.74	USEPA Method 3125B ICPMS

Additional Comments:	

Annex 2: Check List For Regulation 16 Compliance

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

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

Regulation 16(1) **In the case of an application for a waste water discharge licence, the application shall -**		**Attachment Number**	**Checked by Applicant**
(a)	give the name, address, telefax number (if any) and telephone number of the applicant (and, if different, of the operator of any treatment plant concerned) and the address to which correspondence relating to the application should be sent and, if the operator is a body corporate, the address of its registered office or principal office,	Section B1 of Application	Yes
(b)	give the name of the water services authority in whose functional area the relevant waste water discharge takes place or is to take place, if different from that of the applicant,	Section B1 of Application	Yes
(c)	give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the waste water treatment plant and/or the waste water discharge point or points to which the application relates,	Section B.2 of Application	Yes
(d)	state the population equivalent of the agglomeration to which the application relates,	Section B.9 of Application	Yes
(e)	specify the content and extent of the waste water discharge, the level of treatment provided, if any, and the flow and type of discharge,	Attachment D.1	Yes
(f)	give details of the receiving water body, including its protected area status, if any, and details of any sensitive areas or protected areas or both in the vicinity of the discharge point or points likely to be affected by the discharge concerned, and for discharges to ground provide details of groundwater protection schemes in place for the receiving water body and all associated hydrogeological and geological assessments related to the receiving water environment in the vicinity of the discharge.	Section F of Application	Yes
(g)	identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and, if Regulation 17 does not apply, provide details of the likely environmental consequences of any such discharges,	Section E & Attachment E	Yes
(h)	in the case of an existing waste water treatment plant, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application,	Attachment E.4	Yes
(i)	describe the existing or proposed measures, including emergency procedures, to prevent unintended waste water discharges and to minimise the impact on the environment of any such discharges,	Section G of Application	Yes
(j)	give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points,	N/A	Yes
(k)	give details, and an assessment of the effects, of any existing or proposed emissions on the environment, including any environmental medium other than those into which the emissions are, or are to be made, and of proposed measures to prevent or eliminate or, where that is not practicable, to limit any pollution caused in such discharges,	Section F.1 of Application	Yes
(l)	give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,	Section G of Application & Attachment G2	Yes
(m)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.	N/A	Yes
(n)	Any other information as may be stipulated by the Agency.	N/A	Yes
Regulation 16(3) **Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by -**		**Attachment Number**	**Checked by Applicant**
(a)	a copy of the notice of intention to make an application given pursuant to Regulation 9,	Attachment B.8	Yes
(b)	where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13,	N/A	Yes
(c)	Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate -	See below	Yes
(c) (i)	the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and	Attachments B.3, C.2 & D.2	Yes
(c) (ii)	the point or points at which monitoring and sampling are undertaken or are to be undertaken,	Attachments B.3, D.1 & E.3	Yes
(d)	such fee as is appropriate having regard to the provisions of Regulations 38 and 39.	Section B.9(iii) of Application	Yes

Regulation 16(4) An original application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under Regulation 16(3) in hardcopy or in an electronic or other format as specified by the Agency.		Attachment Number	Checked by Applicant
1	An Original Application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under regulation 16(3) in hardcopy or in electronic or other format as specified by the agancy.	Yes	Yes
Regulation 16(5) **For the purpose of paragraph (4), all or part of the 2 copies of the said application and associated documents and particulars may, with the agreement of the Agency, be submitted in an electronic or other format specified by the Agency.**		**Attachment Number**	**Checked by Applicant**
1	Signed original.	Yes	Yes
2	2 hardcopies of application provided or 2 CD versions of application (PDF files) provided.	Yes	Yes
3	1 CD of geo-referenced digital files provided.	Yes	Yes
Regulation 17 **Where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency**		**Attachment Number**	**Checked by Applicant**
1	EIA provided if applicable	N/A	Yes
2	2 hardcopies of EIS provided if applicable.	N/A	Yes
3	2 CD versions of EIS, as PDF files, provided.	N/A	Yes