Comhairle Contae Mhaigh Eo

Áras an Chontae, Caisleán an Bharraigh, Contae Mhaigh Eo.
Teileafón: (094) 9024444 Facs: (094) 9023937

Do Thag. / Your Ref. D0217-01 Ár dTag. / Our Ref. WS 512

25th August 2010.

Administration
Environmental Licensing Programme
Office of Climate, Licensing & Resource Use
Environmental Protection Agency
Headquarters
P.O. Box 3000 Johnstown Castle Estate
County Wexford

RE: **WASTE WATER DISCHARGE LICENCE APPLICATION: D0217-01 – KILTIMAGH**

Dear Mr McLoughlin

Further to your letter of 16th July 2009, I enclose the required responses to the queries raised in the correspondence.

For clarity, the responses have been made point by point with the answers to the queries raised indicated in blue. Additional changes have been made to reflect progress regarding;

- Re-commissioning of the original outfall pipe,
- Extension of the proposed agglomeration boundary,
- Tertiary treatment,
- Construction of the proposed plant using a DBO contract,
- An additional pumping station,
- Details of the Inspectors site visit on 6th August 2010:

This documentation includes:

- 1 no. signed copy & 1 no. copy in hardcopy format of the documentation
- 1 no. copies of all files in electronic searchable PDF format on CD-ROM
- 1 copies of digital geo-referenced drawing files on CD ROM

The content of the electronic files on the accompanying CD-ROM is a true copy of the original documentation.

Yours sincerely

P Mahon

Paddy Mahon
Director of Services

www.mayococo.ie

Mayo County Council

Áras an Chontae, Castlebar, Co. Mayo. Tel: (094) 9024444 Fax: (094) 9023937

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	Drawing 26 – Location of proposed Stormwater Discharge Point SW12 (Map B5.7.1) Revision A – New Drawing - August 2010
Attachment C.1	Operational Information Requirements Revised August2010
Attachment C.2	Outline description of Outfall Design and Construction Revised August 2010
Attachment D.2	Tabular Details of Discharge Points
Attachment F.1	Screening & Scoping Document
	Appropriate Assessment
	Assimilative Capacity
Attachment G.1	Compliance with Council Directives - Revised August 2010
Requested Documentation	**.....CD**
GIS	**.....CD**

LIST OF DRAWING TITLES

Original Drawings - December 2008

Drawing Number	Drawing Title	Map Name
1	Agglomeration Boundary	B1
2	Proposed Agglomeration Boundary	B1.1
3	Waste Water Treatment Plant Layout	B2
4	Proposed Waste Water Treatment Plant Layout	B2.1
5	Location of Primary Discharge Point SW1 (P)	B3
6	Location of Proposed Primary Discharge Point SW9 (P)	B3.1
7	Location of Secondary Discharge Point SW2	B4.1
8	Location of Secondary Discharge Point SW3	B4.2
9	Location of Storm Water Discharge Point SW4	B5.1
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11	Location of Storm Water Discharge Point SW6	B5.3
12	Location of Storm Water Discharge Point SW7	B5.4
13	Location of Storm Water Discharge Point SW8	B5.5
14	Location of Site Notice	B8
15	Process Flow Diagram for current operation	C1
16	Overview of Location of Sampling Points	E2

New Drawings – August 2010

Drawing Number	Drawing Title	Map Name
17	Proposed Agglomeration Boundary with Proposed Discharge Points and Pumping Stations details	B1.1.1
18	Location of Secondary (emergency) Discharge Point SW2	B4.1.1
19	Location of Secondary (emergency) Discharge Point SW3	B4.2.1
20	Location of proposed Secondary (emergency) Discharge Point SW10	B4.3.1
21	Location of Storm Water Discharge Point SW4	B5.1.1
22	Location of Storm Water Discharge Point SW6	B5.3.1
23	Location of Storm Water Discharge Point SW7	B5.4.1
24	Location of Storm Water Discharge Point SW8	B5.5.1
25	Location of proposed Storm Water Discharge Point SW11	B5.6.1
26	Location of proposed Storm Water Discharge Point SW12	B5.7.1

Revised Drawings - August 2010

Drawing Number	Drawing Title	Map Name
2	Proposed Agglomeration Boundary Revision B replaces original Drawing 2 Revision Extended Boundary	B1.1
4	Proposed Waste Water Treatment Plant Layout Revision B replaces original Drawing 4. Revisions – Extended Agglomeration Boundary	B2.1
6	Location of Proposed Primary Discharge Point SW9 (P) Revision B replaces original Drawing 6. Revisions – Extended Agglomeration Boundary	B3.1

MAYO COUNTY COUNCIL

KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

REGULATION 16 COMPLIANCE REQUIREMENTS

Regulation 16 Compliance Responses **August 2010**

REGULATION 16 COMPLIANCE REQUIREMENTS

Question No. 1

Provide details on the proposed start and completion dates for the Capital Investment Programme for the Kiltimagh agglomeration.

Answer 1

The construction of the Kiltimagh Waste Water Treatment Plant (WWTP) is currently in progress. A DBO Contract was awarded to Response Engineering Ltd.for the WWTP on the 4th January 2010 which has a proposed completion date of 4th January 2011.

Changes to the Capital Investment Programme

Funding for the collection network and the constructed wetlands was withdrawn by the Department of the Environment, Heritage & Local Government (DEHLG), owing to the current economic downturn. Mayo County Council applied for funding to be reinstated for the constructed wetlands and to installation a 900mm storm sewer to handle high storm flows to the WWTP. Verbal approvals were received from DEHLG to install these elements as a variation to the WWTP upgrade and they are currently under construction.

As the wetlands are an add-on to the WWTP contract the construction of these has just started (August 2010), therefore the commissioning date for the constructed wetland is expected to be 6 months later then that of the WWTP. As a consequence the discharge from the new WWTP will continue to discharge into the adjacent drain until such time as the planting in the wetlands has been established which is expected to be June 2011.

No commitment from the Department has been undertaken on the reinstatement of funding for the collection system. As a consequence the existing combined system will not be separated therefore the storm water contained in the system will not be reduced as expected. In order to cope with exceptional storm events 3 No. new overflows have been introduced namely **SW10, SW11** and **SW12** (see answer to question 6 below for details). Each of these will discharge through the same outfall as the proposed primary discharge point **SW9(P)** via the constructed wetlands attenuation area.

Also as a result of the funding for the collection network been withdrawn **SW6, SW7** and **SW8** will not now be closed as stated in the original application. It is considered that the closure of these Storm Water Overflows, prior to the network being upgraded and separated, would put the existing network under excessive pressure which may result in storm water backing up manholes in storm events (see answer 4 below for further details). **SW5** and **SW1(P)** at the treatment works will be closed.

To reflect the above updated information the **Application Form** and the following associated Attachments have been revised:

A.1	Non Technical Summary
B.4	Addition of Maps
B.5	Addition of Maps
C.1	Operational Information Requirements
C.2	Outline description of Outfall Design and Construction

Question No. 2

Where planning permission has been granted for developments(s), but said 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:

I. Information on the calculated population equivalent (p.e.) to be contributed to the waste water works as a result of those planning permissions granted;
II. The percentage of the projected p.e. to be contributed by the non domestic activities; and,
III. 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.

Answer 2

I. Planning permission has been granted for 85 houses which have not been constructed to date. There has also been one development, comprising of office suites, meeting rooms, crèche facility, canteen/coffee shop, which had been built but not occupied (equivalent to 17.2 houses taken from planning file P06/1242). These developments are equivalent to a PE = 318 (85 + 17.2) x 3.11(occupancy rate used in the Kiltimagh preliminary report).

II. The percentage of the projected P.E. to be contributed by the non domestic activities of the above developments is 20%.

III. The new waste water treatment plant currently being constructed has been designed for an initial capacity of 3,333PE. The plant has been designed to accommodate an increase in capacity to 5,000 PE should this be required in the future. The proposed PE entering the plant on commissioning has been estimated at approximately 2,070. Therefore with spare capacity of 1,262PE if the additional developments are constructed as outlined in I. above the new waste water treatment will be able to accommodate the extra hydraulic and organic loading without posing an environmental risk to the receiving water habitat.

As a result Section B.9 (i) of the Application Form has been amended.

Question No. 3

Map B.2-1Constructed Wetlands (CW)-Describe the function of this proposed CW in relation to this agglomeration?

Answer 3

The constructed wetlands are intended for attenuation of storm water and final effluent discharges only and will not be used as a form of tertiary treatment for treated effluent or storm water. For more details on the proposed construction wetlands refer to Screening & Scoping Document and the Appropriate Assessment located in Attachment F.1.

Question No.4

Table E.l(i)-Existing works-SW4, SW5, SW6, SW7 & SW8-what is the frequency of discharges at these SWOs? Do these SWOs comply with the definition of SWO in accordance with the DEHLG guidance on 'Procedures and Criteria in Relation to Storm Water Overflows'?

Answer 4

The frequency and quantity of discharge from SW4, SW5, SW6, SW7 and SW8 are not measured – i.e. not known.

These discharges comply with the definition of storm water overflow in accordance with DEHLG 'Guidance Procedures and Criteria in relation to Storm Water Overflows', in that:

- They do not cause significant visual or aesthetic impact and public complaints
- They do not cause deterioration in water quality of the receiving waters
- They do not give rise to failure in meeting the requirements of national regulations on foot of EU Directives
- They do not operate in dry weather

SW5 will be closed.

Question No.5

What is the frequency of discharges at SW2 and SW3?

Answer 5

SW2 and SW3 are secondary emergency discharge points, associated with Pumping Station No.1 and 2 respectively. They will only overflow if there is a power outage; both sets of pumping equipment break down or if maintenance work needs to be carried out. No discharges have been recorded to date; therefore anticipated frequencies of discharge are negligible.

Question No. 6

In the Proposed Wastewater Treatment Works provide details of any secondary discharges, emergency discharges, SWO etc

Answer 6

The proposed WWTP will have the following new overflows:

- **SW10** - The inlet pumping station (located downstream of the inlet works) contains a secondary emergency overflow. The pumping station consists of forward feed pumps sized to pump 3 DWF (of the design PE) to the aeration tanks and also storm pumps to pump an additional 3DWF to the storm tank. The emergency overflow should only ever activate in the event of a malfunction. Both sets of pump are a duty standby arrangement and the WWTP will also have an emergency generator in the event of a power outage.

- **SW11** - Overflow from storm holding tank. The overflow into the storm tank is to occur downstream of the inlet screens at flows in excess of 3DWF of the design flow. The design PE is 3,333 so 3DWF would be ((3,333 x 0.225) / (24 x 60 x 60)) x 3 = 26 l/s. The storm tank is sized to hold 12 hours (½ day) average flow at the design PE (3,333) which is equal to (3,333 x 0.225 x 0.5) = 374m^3. If the storm tank fills it overflows to an outfall. Once the storm has passed the contents of the storm tank are returned to the pumping station to be pumped to the aeration tanks for full treatment.

- **SW12** - The inlet works are sized to handle flows in excess of 6 DWF of the ultimate design flow. The ultimate design flow is based on an ultimate PE of 5,000 so 6DWF would be ((5,000 x 0.225) / (24 x 60 x 60)) x 6 = 78 l/s. Due to the fact that the collection system upgrade (which was to separate the system) is not going ahead there is the potential for higher flows than that entering the WWTP during storm events. If flows greater than 78 l/s enter the WWTP they will overflow at the inlet manhole. This overflow is designed to meet the requirements of an SWO as it will only happen at flows far exceeding 6DWF at current flows.

All overflows and the treated effluent will discharge to a wetlands attenuation area prior to the River Pollagh.

Question No. 7

Complete Section F: Existing Environment & Impact of the Discharge(s) of the application in full, using the Agency Guidance Note for assistance on the required content, including the **Assimilative Capacity** of the receiving water for the various substances being monitored.

Answer 7

Summary of WAC of the Pollagh River

Parameters	Permitted Standards to River Pollagh (mg/l)	Average Standards to be Achieved in new WWTP	River Pollagh Waste Assimilative Capacity (kg/d)	Existing Load (kg/d)	Proposed Load (kg/d)
BOD	25	20	55.3	6.9	15.0
SS	35	30	794.9	16.8	22.5
TN as N	15	15	412.6	8.2	11.25
TP	2	1	1.9	0.6	0.8
Nitrate as N			370.9	0.04	Unknown
Nitrite			1.6	0.002	Unknown
Total Ammonia			3.5	4.3	Unknown
OrthoP			1.9	0.2	Unknown

(Refer to Attachment F.1 for actual calculations)

As can be seen from the above table the existing and proposed loads from the existing and proposed WWTPs are all within the Assimilative Capacity of the Pollagh River, with the exception of Total Ammonia from the existing WWTP.

Question No. 6a

Section F: Existing Environment and Impact of the Discharges: Assess the likelihood of significant effects of the waste water discharges from the Kiltimagh agglomeration on the relevant European site(s) by referring to Circular L8/08 'Water services Investment and Rural Water Programmes - Protection of Natural Heritage and National Monuments' issued by the Department of Environment, Heritage and Local Government. In particular, the flow diagram in Appendix 1 should be completed and the results of each section recorded. Provide details of the results of this assessment within one month of the date of this notice. If significant effects are likely then an appropriate assessment must be carried out and a report of this assessment forwarded to the Agency within one month of the date of this notice.
You are advised to provide the requested information in accordance with the 'Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.1. 684 of 2007)' which is available at www.epa.ie.

Answer 6a

Attachment F.1 contains the Appropriate Assessment Screening and Scoping Report. This report concluded that a full Appropriate Assessment was required. This was subsequently completed and is also included in Attachment F.1.

Question No. 7a

F.2 - Please provide details of any downstream drinking water abstraction points.

Answer 7a

There are no drinking water abstraction points downstream of the Kiltimagh discharge point.

Question No. 8

Section G.I-Provide evidence that emissions from the agglomeration are in compliance with the Council Directives listed in section G of the application form.

Answer 8

A revised version of Attachment G.1 has been included.

ADDITIONAL INFORMATION

Outfall Pipe

There is an outfall pipe from the existing plant which flows directly into the River Pollagh. However this pipe has been blocked and abandoned for some time and the existing effluent flows into the drain adjacent to the WWTP which in turn flows directly into the River Pollagh.

The blocked outfall pipe which flows directly to the River Pollagh is to be re-commissioned and the effluent from the new WWTP and wetland will discharge directly to the River Pollagh via the existing outfall pipe. This location is shown on Drawing No. Map B.3.1 as SW9(P).

As a result, Attachment C.2, Outline Description of Outfall Design and Construction, has been revised.

Additional Outfalls

Three additional outfalls were identified as more detail of the design of the plant became available. These outfalls will use the re-commissioned outfall into the River Pollagh via the constructed wetland attenuation area. The outfalls are specified as proposed Secondary (emergency) Outfall SW10 and proposed Storm water Outfalls SW11 and SW12.

As a result, the following Attachments have been revised;

- Application Form,
- Attachment A.1 Non-Technical Summary,
- Attachment B.4,
- Attachment B.5,
- Attachment C.1 Operational Information Requirements,
- Attachment C.2 Outline Description of Outfall Design and Construction,
- Attachment D.2:

Extended Agglomeration Boundary

A Kiltimagh local area plan has been developed since the original licence submission. The Kiltimagh proposed agglomeration boundary has been revised to bring it into line with this Kiltimagh local area plan.

As a result the maps in Attachments B.1, B.2 and B.3 have been revised.

Tertiary Treatment

The constructed wetlands are intended as an attenuation area rather than to provide tertiary treatment.

As a result, the Attachment A.1 Non Technical Summary has been revised.

Design, Build & Operate (DBO) Contract

The DBO Contract was awarded to Response Engineering Ltd., since the original WWDL application was submitted. The existing caretaker has also been replaced.

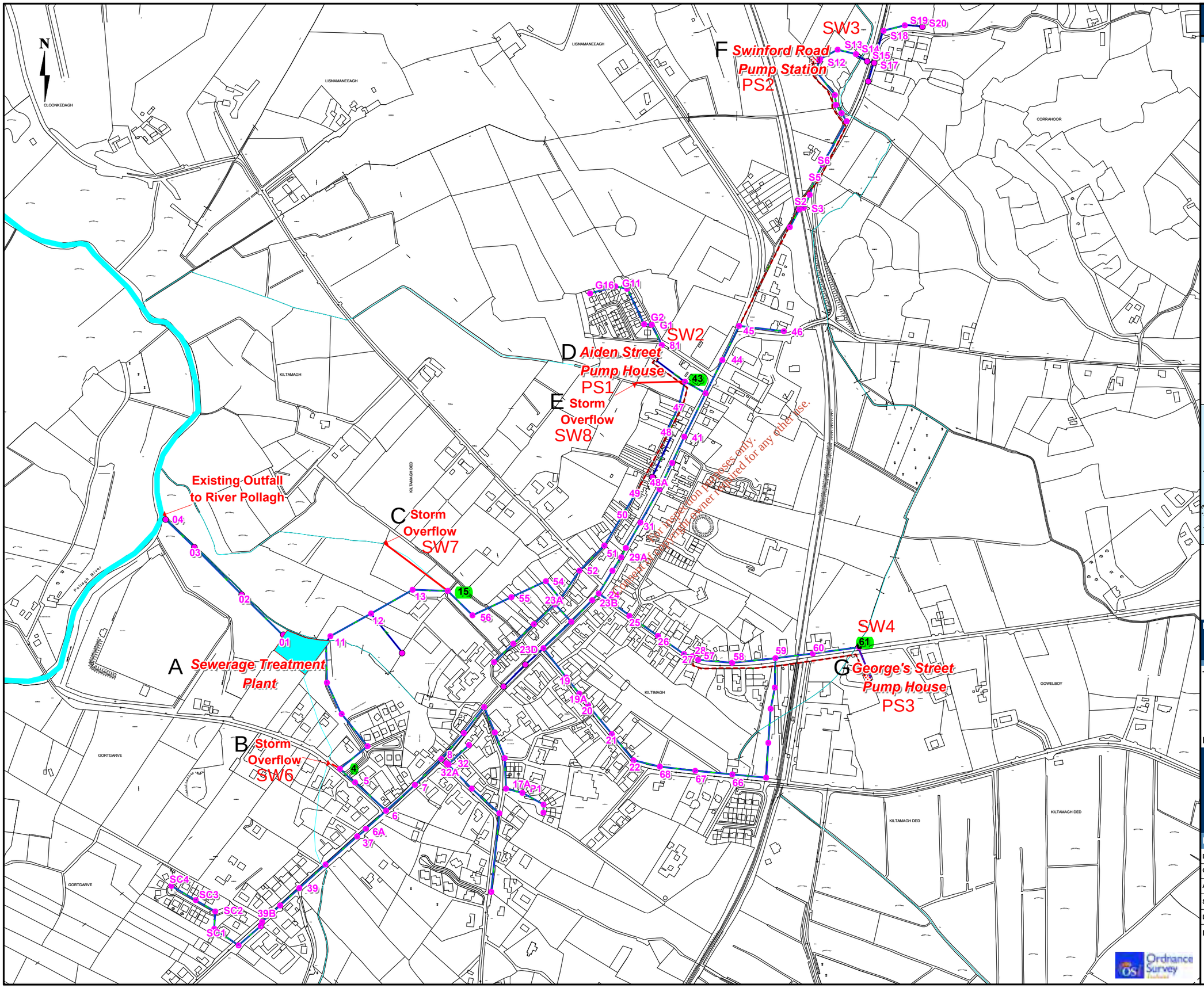
As a result Section B.1 & B.2 of the Application Form has been amended.

Pumping Station
The Mountain View Housing Estate has been taken over by Mayo County Council since the original WWDL application was submitted. Therefore Pumping Station No. 4 (PS4) is now controlled by Mayo County Council.

As a result Attachment C.1, Operational Information Requirements has been revised.

Details of EPA Inspectors Site Visit on 6th August 2010
The following is a description of the locations inspected on the day; starting at location **A** and concluding at **G**. For illustration purposes refer the attached Layout of Existing Scheme on page 8.

- **A** - The treatment plant site and constructed wetlands were first inspected. An illustration of the layout the proposed treatment plant is included on page 9.
- **B** – Manhole No. 4 was lifted and inspected. This manhole contains the storm water overflow associated with SW6 along Park Road. This sewer line takes sewage from the southwest part of the town ie. Balla Road, Chapel Street, Bog Road and Park Road and gravitates separately to the WWTP. This storm water overflow is not to be closed as stated in the original application.
- **C** – Manhole No. 15 was lifted and inspected. This manhole contains the storm water overflow associated with SW7 and is located at the back of the St. Louis secondary school in the town. This is the main sewer line into the WWTP and takes the majority of sewage from the north and east of town.
- **D** - Pumping Station No. 1 (PS1) (Aiden Street Pump House) was next inspected. This accepts all the sewage from north and some from the east of town and pumps to a point on Main Street where it flows by gravity to WWTP. This pumping station has an associated emergency secondary discharge point SW2.
- **E** - Manhole No. 43 was located in the HSE grounds however it was not accessible. This manhole contains the storm water overflow associated with SW8.
- **F** - Pumping Station No.2 (PS2) (Swinford Road Pump Station) associated with the hotel and its emergency secondary discharge point SW3 were next visited. This was on the grounds of the hotel.
- **G** – Pumping Station No. 3 (PS3) (George's Street Pump House) was last visited. This collects sewage from the eastern ends of George Street and Thomas Street before pumping to a point on Georges Street were it then flows by gravity to WWTP. This pumping station is designed to pump 6DWF with the reminder overflowing to the adjacent stream through SW4 (manhole 61).



Legend

- Sewerage Treatment Plant
- Pumping Station
- Foul Sewers
- Storm Overflows
- River
- Rising Main
- Manhole

Mayo County Council

Project
Kiltimagh Sewerage Scheme

Title

Layout of Existing Scheme

Figure 2.1

RPS
Lyrr Building,
IDA Business & Technology Parl
Mervue, Galway,
Ireland
T +353 91 400200
F +353 91 534199
E ireland@rpsgroup.com
W rpsgroup.com/ireland

Issue Details

Drawn by:	MC	**Project No.**	MGW0078
Checked by:	PJG	**File Ref.**	MGW0078MI0010
Approved by:	SG		
Scale:	NTS	**Drawing No.**	**Rev.** MI0010 A02
Date:	March 2009		

Notes
1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
2. All levels are referred to Ordnance Datum, Malin Head.
3. Ordnance Survey Ireland Licence EN 0005008 ©Copyright Government of Ireland.

Tag	Description
01	INLET MANHOLE
02	INLET SCREENS
03	GRIT TRAP
04	100 L/S FLUME
05	FORWARD FEED PUMPING STATION (3.0m±3.5m±3.92p)
06	STORM TANK (14.0m±5.9m±5m)
07	2No. AERATION TANKS (14.0m±8.5m±5m)
08	3 No. AIR BLOWERS
09	FERRIC DOSING PUMPS
10	ODOUR REMOVAL UNIT
11	13.8m⌀ CLARIFIER
12	RAS/WAS PUMPS
13	7m⌀ PICKET FENCE THICKENER
14	SLUDGE DEWATERING UNIT
15	SLUDGE CAKE STORAGE CONTAINER
16	CONTROL HOUSE
17	FINAL EFFLUENT OUTLET MANHOLE
18	Future Aeration Tank
19	Future Clarifier

Legend

Site Lighting
Existing Ground Level
Security Fence
Process Line
Tree
Wildflower Grass seed Mix
Concrete Hardstand Area
Shingle on top of Weedblock
Wastewater — WW — WW
Foul Water — FW — FW
Dosing
Storm Water — SW — SW
Potable Water — PW — PW

0 4.0 8.0 12.0 16.0 12.0
2.0 6.0 10.0 14.0 18.0
Scale Bar (m)
Scale 1:250

TO OUTFALL GL IL43.000
DN300 TREATED EFFLUENT TO WETLANDS
DN900 EMERGENCY STORM OVERFLOW TO WETLANDS
OIL INTERCEPTOR
STORM MH 01
DN900 EMERGENCY STORM OVERFLOW
DN150 FLOWMETER
GRAVITY STORM RETURN
EMERGENCY STORM OVERFLOW C/W FLAP VALVE
DN150 uPVC DRAIN TO STORM MH2 C/W FLAP VALVE
DN450 EMERGENCY STORM GRAVITY OVERFLOW C/W FLAP VALVE
DN450 OVERFLOW FROM INLET MANHOLE
MH S01 GL44.800 IL43.295
FOUL MH 01
FOUL MH 02
STORM MH 02
SCUM
WAS
RAS
CENTRATE
FOUL
DROP KERB
OIL TANK
GRAVITY OVERFLOW
PUMPED STORM OVERFLOW
EXISTING HAUL ROAD TO BE LIGHTLY COVERED WITH WEEDBLOCK & SHINGLE SO IT CAN BE USED FOR MAINTENANCE
INDIGENOUS SCREENING WOODLAND TO BE PLANTED BETWEEN TREES ALONG THE PERIMETER.
DN100 SUMP OVERFLOW FROM ODOUR UNIT
DROP KERB
2.4m HIGH PLASTIC COATED PALISADE FENCE
2.4m HIGH ACCESS GATE
MH S02 GL46.0 IL43.507
TIMBER EDGING TO BE PLACED BETWEEN CONCRETE HARDSTAND, SHINGLE AREA & GRASSED AREAS.
3" WATER SUPPLY FROM ROAD

Proposed Site Plan
Scale 1:250

REFERENCE DRAWINGS:

COMPANY	DRAWING No.	Rev.
–	–	–

GENERAL NOTES:

1. All Dimensions are in mm unless otherwise stated.
   All Heights are in metres related to TBM Datum =
2. Do not scale from this drawing, if in doubt ask.
3. All Flange Bolt holes to Straddle pipe centreline
4. Power and Telem ducts to have min seperation of 300mm
   All Power ducts to be ⌀150
   All Telem ducts to be ⌀100
5. All ESB cable ducts shall be suitable to carry over 125 V
6. All Gate Valves to be Clockwise Closing
7. All cable duct elbows to be long radius min

DRAWING NOTES:

1. LANDSCAPING DETAILS OMITTED FOR CLARITY. REFER TO DRAWING 2128-005 FOR LANDSCAPING DETAILS

REV	DATE	DESCRIPTION	DRN	CHK	APP	PM
3	08.07.10	ISSUED FOR CONSTRUCTION	ID	SH	TMD	–
2	04.06.10	ISSUED FOR CONSTRUCTION	ID	SH	DM	–
1	15.04.10	ISSUED FOR CONSTRUCTION	ID	SH	DM	–
0	27.01.10	ISSUED FOR CLIENT COMMENT	ID	SH	DM	–

response group
RAILWAY ROAD
CHARLEVILLE, CO. CORK
TEL: 063-33400 FAX: 063-33401
E-MAIL: info@response-group.ie

Client: MAYO COUNTY COUNCIL
Project No.: 2128
Project Title: KILTIMAGH SEWERAGE SCHEME
Org No.: 2128-001
Drawing Title: SITE PLAN PROCESS LAYOUT
Revision: 3
Scale: Not to Scale

MAYO COUNTY COUNCIL

KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

APPLICATION FORM

Application Form **Revised August 2010**

This is a draft document and is subject to revision.

Waste Water Discharge Licence Application Form

EPA Ref. Nº: *(Office use only)*	D0217-01

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

SECTION A: NON-TECHNICAL SUMMARY

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

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

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

A description of:

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

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

SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration:	**Kiltimagh**

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*:	**Mayo County Council**
Address:	**Aras An Chontae**
	The Mall
	Castlebar
	County Mayo
Tel:	**094 9024444**
Fax:	**094 9023937**
e-mail:	

*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*:	**Paddy Mahon**
Address:	**Ballina Civic Office**
	Arran Place
	Ballina
	County Mayo
Tel:	**096 76100**
Fax:	**096 76199**
e-mail:	**pmahon@mayococo.ie**

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

Co-Applicant's Details

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

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

Design, Build & Operate Contractor Details

Name*:	**Response Engineering Ltd.,**
Address:	**Railway Road, Charleville, Co. Cork**
Tel:	**063-33400**
Fax:	**063-33401**

*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.

Existing

Name*:	**Pat Gallagher**
Address:	**Kiltimagh Waste Water Treatment Plant**
	Gortgarve
	Kiltimagh
	Co. Mayo
Grid ref (6E, 6N)	**(133796E, 289284N)**
Level of Treatment	**Primary**
Primary Telephone:	**Pat Gallagher (Caretaker) 094-9252258**

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

Proposed

Name*:	**Response Engineering Ltd.,**
Address:	**Railway Road, Charleville, Co. Cork**
Tel:	**063-33400**
Fax:	**063-33401**

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.

Existing

Type of Discharge	**Open discharge to Drain**
Unique Point Code	**SW1(P)**
Location	**Gortgrave, Kiltimagh**
Grid ref (6E, 6N)	**(133759E, 289308N)**

Proposed

Type of Discharge	**Open discharge to River Pollagh**
Unique Point Code	**SW9(P)**
Location	**Gortgrave, Kiltimagh**
Grid ref (6E, 6N)	**(133549E, 289507N)**

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.

Existing

Type of Discharge	**Open discharge**
Unique Point Code	**SW2 (emergency)**
Location	**Aiden Street Pumping Station**
Grid ref (6E, 6N)	**(134406E, 289806N)**

Type of Discharge	**Open discharge**
Unique Point Code	**SW3 (emergency)**
Location	**Swinford Road Pumping Station**
Grid ref (6E, 6N)	**(134717E, 290314N)**

Proposed

SW2 and **SW3** as details above will remain in the proposed waste water works. Additional the following new secondary (emergency) discharge point **SW10** detailed below will be introduced into the scheme.

Type of Discharge	**Open discharge**
Unique Point Code	**SW10**
Location	**Gortgrave - Overflow at inlet pumping station**
Grid ref (6E, 6N)	**(133549E, 289507N)**

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.

Existing

Type of Discharge	**Open discharge**
Unique Point Code	**SW4**
Location	**Georges Street (pump house)**
Grid ref (6E, 6N)	**(134773E, 289301N)**

Type of Discharge	**Open discharge**
Unique Point Code	**SW5**
Location	**Gortgarve, Kiltimagh (WWTP)**
Grid ref (6E, 6N)	**(133830E, 289308N)**

Type of Discharge	**Open discharge**
Unique Point Code	**SW6**
Location	**Park Road**
Grid ref (6E, 6N)	**(133742E, 289147N)**

Type of Discharge	**Open discharge**
Unique Point Code	**SW7**
Location	**Rear of St. Louis Convent**
Grid ref (6E, 6N)	**(133931E, 289457N)**

Type of Discharge	**Open discharge**
Unique Point Code	**SW8**
Location	**Aiden Street**
Grid ref (6E, 6N)	**(134435E, 289735N)**

Proposed

SW4, SW6, SW7 and SW8 as details above, are to remain in the proposed waste water works. **SW5** will be closed. Additional the following new storm water overflows **SW11** and **SW12** detailed below will be introduced into the scheme.

Type of Discharge	**Open discharge**
Unique Point Code	**SW11**
Location	**Gortgrave - Overflow at storm water holding tank**
Grid ref (6E, 6N)	**(133549E, 289507N)**

Type of Discharge	**Open discharge**
Unique Point Code	**SW12**
Location	**Gortgrave - Overflow at inlet works**
Grid ref (6E, 6N)	**(133549E, 289507N)**

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:	**Mayo County Council**
Address:	**Aras An Chontae**
	Castlebar
	County Mayo
Tel:	**094 9024444**
Fax:	**094 9023937**
e-mail:	**planning@mayococo.ie**

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

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

Local Authority Planning File Reference N^{o}:	**Part 8 Planning obtained**

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:	**H.S.E West**
Address:	**Gate Lodge**
	Merlin Park, University Hospital
	Galway
Tel:	**091 775435/6**
Fax:	**091 756193**
e-mail:	

B.7 (iii) Other Relevant Water Services Authorities

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

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

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

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

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

B.8 Notices and Advertisements

Regulations 10 and 11 of the Waste Water Discharge (Authorisation) Regulations, 2007 require all applicants to advertise the application in a newspaper (within two weeks prior to date of application) 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 one (1) copy 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	**Existing PE**	**1623**
	Future PE	**1710**
	Design PE	**3333**
	Future Design PE	**5000**
Data Compiled (Year)		**2002**
Method		**Census and survey**

B.9 (ii) Pending Development

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

- information on the calculated population equivalent (p.e.) to be contributed to the waste water works as a result of those planning permissions granted,
- the percentage of the projected p.e. to be contributed by the non-domestic activities, and
- the ability of the waste water works to accommodate this extra hydraulic and organic loading without posing an environmental risk to the receiving water habitat.

B.9 (iii) FEES

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

Class of waste water discharge	Fee (in €)
Discharges from Agglomerations with a population equivalent of 1001 to 2000	**15,000**

Appropriate Fee Included	Yes	No
	√	

B.10 Capital Investment Programme

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

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

Attachment included	Yes	No
	√	

B.11 Significant Correspondence

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

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

Attachment included	Yes	No
		√

B.12 Foreshore Act Licences.

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

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

Attachment included	Yes	No
		√

SECTION C: INFRASTRUCTURE & OPERATION

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

C.1 Operational Information Requirements

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

C.1.1 Storm Water Overflows

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

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

C.1.2 Pumping Stations

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

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

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.

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

Attachment included	Yes	No
	√	

SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT

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

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

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

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

D.1 Discharges to Surface Waters

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

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

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

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

D.2 Tabular Data on Discharge Points

Applicants should submit the following information for each discharge point:

Table D.2:

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

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

SECTION E: MONITORING

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

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

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

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

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

E.2. Monitoring and Sampling Points

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

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

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

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

Attachment included	Yes	No
	√	

E.3. Tabular data on Monitoring and Sampling Points

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

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

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

E.4 Sampling Data

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

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

Attachment E.4 should contain any supporting information.

Attachment included	Yes	No
	√	

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

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

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

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

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

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

- Details of all monitoring of the receiving water should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables F.1(i)(a) & (b) should be completed for the primary discharge point. Surface water monitoring locations upstream and downstream of the discharge point shall be screened for those substances listed in Tables F.1(i)(a) & (b). Monitoring of surface water shall be carried out at not less than two points, one upstream from the discharge location and one downstream.

- For discharges from secondary discharge points Tables F.1(ii)(a) & (b) should be completed. Furthermore, provide summary details and an assessment of the impacts of any existing or proposed emissions on the surface water or ground (aquifers, soils, sub-soils and rock environment), including any impact on environmental media other than those into which the emissions are to be made.

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

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

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

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

- Indicate whether or not emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have a significant effect on –

  (a) a site (until the adoption, in respect of the site, of a decision by the European Commission under Article 21 of Council Directive 92/43/EEC for the purposes of the third paragraph of Article 4(2) of that Directive) —

    (i) notified for the purposes of Regulation 4 of the Natural Habitats Regulations, subject to any amendments made to it by virtue of Regulation 5 of those Regulations,

    (ii) details of which have been transmitted to the Commission in accordance with Regulation 5(4) of the Natural Habitats Regulations, or

    (iii) added by virtue of Regulation 6 of the Natural Habitats Regulations to the list transmitted to the Commission in accordance with Regulation 5(4) of those Regulations,

  (b) a site adopted by the European Commission as a site of Community importance for the purposes of Article 4(2) of Council Directive 92/43/EEC[1] in accordance with the procedures laid down in Article 21 of that Directive,

  (c) a special area of conservation within the meaning of the Natural Habitats Regulations, or

  (d) an area classified pursuant to Article 4(1) or 4(2) of Council Directive 79/409/EEC[2];

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

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

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

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

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

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

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

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

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

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

Attachment F.2 should contain any supporting information.

SECTION G: PROGRAMMES OF IMPROVEMENTS

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

G.1 Compliance with Council Directives

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

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

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

Attachment included	Yes	No
	√	

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

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

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

Attachment included	Yes	No
	√	

G.3 Impact Mitigation

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

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

Attachment included	Yes	No
	√	

G.4 Storm Water Overflow

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

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

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 : P Mahon **Date :** 25/8/10
(on behalf of the organisation)

Print signature name: P MAHON

Position in organisation: DIRECTOR OF SERVICES

SECTION I: JOINT DECLARATION

Not Applicable

Joint Declaration [Note1]

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

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

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

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

Lead Authority

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

Print signature name: _____

Position in organisation:_____

Co-Applicants

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

Print signature name: _____

Position in organisation:_____

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

Print signature name: _____

Position in organisation:_____

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

MAYO COUNTY COUNCIL

KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT A.1

Non Technical Summary **Revised August 2010**

A.1 Non-Technical Summary

1 Waste Water Discharge Licence / Background

Mayo County Council, Aras an Chontae, Castlebar, County Mayo is making an Application, to the Environmental Protection Agency (E.P.A.) for a Waste Water Discharge Licence, for the Kiltimagh Waste Water Treatment Plant (WwTP) & Agglomeration, in compliance with the Waste Water Discharge (Authorisation) Regulations 2007 (S.I. No. 684 of 2007).

Under Schedule 2 of the above regulations, the prescribed date for submission of Waste Water Discharge Licence Applications for agglomerations (with discharges with a population equivalent of 1,001 P.E. to 2,000 P.E.) is 27th February 2009. The waste water works at Kiltimagh falls under this category, presently having an agglomeration with a population equivalent of 1,623 P.E.

The construction of the Kiltimagh Waste Water Treatment Plant (WWTP) is currently in progress. A DBO Contract was awarded to Response Engineering Ltd., for the WWTP on the 4th January 2010 which has a proposed completion date of 4th January 2011.

Funding for the collection network and the constructed wetlands was withdrawn by the Department of the Environment, Heritage & Local Government (DEHLG), owing to the current economic downturn. Therefore the scheme no longer includes the extension of the existing collection network, a new storm water network or rehabilitation of the existing network. However Mayo County Council applied for funding to be reinstated funding for the constructed wetlands and to installation a 900mm storm sewer to handle high storm flows to the WWTP which have now been approved and are currently under construction.

This discharge license application relates to both the existing waste water works and collection network in Kiltimagh along with the proposed new waste water works under the Kiltimagh Sewerage Scheme.

2 Description of Kiltimagh Waste Water Works

Existing

The existing Kiltimagh WWTP was built in the late 1940s with an original design capacity of 650P.E. and is currently being operated by Mayo County Council.

The Waste Water Works in Kiltimagh consists of a WWTP with a collection network consisting of foul sewers, combined sewers and surface water drains, 4 No. pumping stations, 2 No. secondary discharge points and 5 No. storm overflows.

The existing treatment plant consists of the following:-

1. 300 mm diameter inlet sewer.
2. Double sided overflow weir with baffled screen
3. Overflow to adjacent drain
4. Twin detritus channels.
5. Twin manually raked coarse bar screens.
6. Separate feeds to Imhoff Tank (penstock controlled)
7. Imhoff Tank.
8. 300 mm outfall pipe to
9. Three sludge drying beds.

Proposed

The new waste water treatment plant currently being constructed (2010) has been designed for an initial capacity of 3,333PE. The plant has been designed to accommodate an increase in capacity to 5,000 PE should this be required in the future (2026). The collection network is not currently being upgraded. The proposed treatment process will consist of primary, secondary with phosphorus reduction in order to achieve the following effluent quality:

BOD = 25mg/l
SS = 35mg/l
Total N = 15mg/l
Total P = 1mg/l

The treated effluent will flow to a collecting manhole and on through a flow measurement flume after which it will mix with the storm water being attenuated in a constructed wetlands area before discharging directly to the River Pollagh **SW9(P).**

3 Sources of Emissions

Existing Waste Water Works

Primary Discharge Point

Emissions from the treatment works are discharged through an outfall labelled **SW1 (P)** to a drain at the treatment works boundary that flows into the River Pollagh, approximately 320m away. This is the primary discharge point.

Secondary Discharge Points

There are 2 No. secondary discharge points, which are emergency overflows at the pump houses located at Aiden Street **(SW2)**, Swinford Road **(SW3)**. These emergency overflows are provided in case of difficulties, such as power cuts or blockages with the pumping plant.

Storm Water Overflows

There is a storm water overflow at the WWTP inlet works **(SW5)** that discharges to a drain that flows to the Pollagh River. There are 4 No. storm overflow manholes on the existing collection network that prevent surcharging of the sewers and which discharge to adjacent streams/drains at Georges Street, Aiden Street, Park Road and at the rear of St. Louis Convent.

Proposed Waste Water Works

Primary Discharge Point

The treated effluent will combine with storm water in the constructed wetlands before discharging directly in to the River Pollagh **SW9(P).** This is the location of the original Primary Discharge Point before the outfall pipe became blocked and subsequently abandoned. The outfall pipe is to be re-commissioned and the effluent from the new WWTP wetland will discharge directly to the River Pollagh via the existing outfall pipe.

However as the wetlands are an add-on to the WWTP contract the construction of these has just started (August 2010), therefore the commissioning date for the constructed wetland is expected to be 6 months later then that of the WWTP. As a consequence the discharge from the new WWTP will continue to discharge into the adjacent drain until such time as the planting in the wetlands has been established which is expected to be June 2011.

Secondary Discharge Points

The 2 No. secondary emergency discharge points **SW2** and **SW3** associated with pumping station 1 and 2 respectively are to remain. One additional secondary emergency discharge points (**SW10**) is being introduced at the new WWTP. This will be associated with the inlet pumping station.

Storm Water Overflows

As a result of the funding for the collection network been withdrawn **SW6, SW7** and **SW8** will not now be closed as originally planned as part of the collection network upgrade. It is considered that the closure of these Storm Water Overflows, prior to the network being upgraded and separated, would put the existing network under excessive pressure which may result in storm water backing up manholes in storm events.
SW5 at the treatment works will be closed.

No commitment from the Department has been undertaken on the reinstatement of funding for the collection system. As a consequence the existing combined system will not be separated therefore the storm water contained in the system will not be reduced as expected. In order to cope with exceptional storm events 2 No. additional storm water overflows have been introduced at the WWTP namely **SW11** and **SW12**. Each of these will discharge through the same outfall as the proposed primary discharge via the constructed wetlands attenuation area.

4 Nature and Quantities of Foreseeable Emissions

Existing
Waste water collected by the existing collection system receives primary treatment and is discharged to a drain at the treatment works boundary that flows into the River Pollagh approximately 320m metres away.

Proposed
The proposed wastewater treatment plant has an initial design PE of 3,333 so 3DWF would be ((3,333 x 225) / (24 x 60 x 60)) x 3 = 26 l/s. The future design PE is 5000 giving a peak flow of 39.41l/s at 3 DWF.

Primary and secondary treatment with phosphorus removal will be employed in the proposed treatment plant, which will ensure the quality of the effluent. Monitoring programs will be put in place as part of Mayo County Council's contract with the private operator. The Primary Discharge will discharge to the River Pollagh which is within the Moy River Catchment Special Area of conservation, Site Code 002298. The River Pollagh has a Q rating of 4.

5 Technology for Prevention or Reduction of Emissions

Existing
There is no mechanical and electrical plant at the existing treatment works site. The pumping stations do not have an alarm call out facility so problems occurring at the pumping stations cannot be rectified before causing discharges to the surrounding water courses.

Proposed
Emissions from the proposed waste water treatment works will be closely monitored and the treatment process constantly adjusted to maximise the efficiency of the plant in removing any pollutants. The process will remove BOD, nitrogen, suspended solids and phosphorous from the final effluent which will result in a reduction of harmful emissions from the treatment works. A large variety of technology in terms of mechanical and electrical equipment will be used at the treatment plant in order to reduce the concentration of potentially harmful substances in the influent.

6 Further Measures Planned to Eliminate or Reduce Emissions
The new Kiltimagh Waste Water Treatment Plant is currently being constructed which will bring the quality of the effluent to an acceptable level. However the collection network is not being upgraded as originally planned due to lack of funding from DEHLG.

7 Supervision of works

The new WWTP is subject to a DBO Contract which was awarded to Response Engineering Ltd.

8 Measures planned to monitor emissions to the environment

Sampling currently takes place at the wastewater treatment works in accordance with the provisions of the Urban Wastewater Treatment Regulations. This will continue to be the case until such time as a Waste Water Discharge Licence is granted.

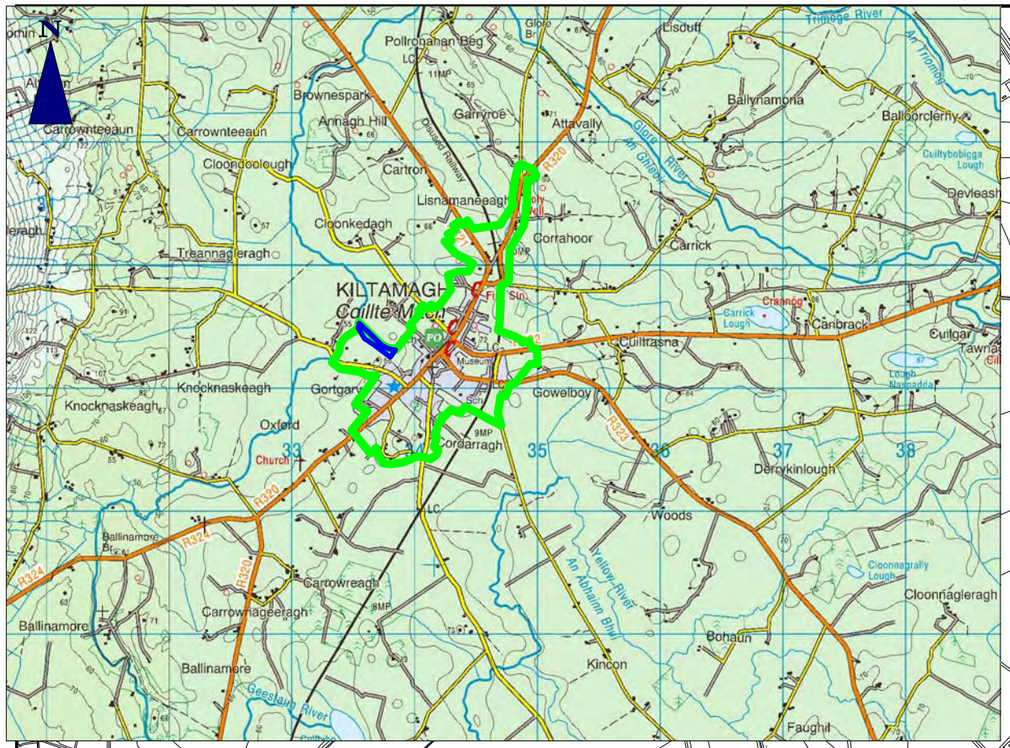
MAYO COUNTY COUNCIL

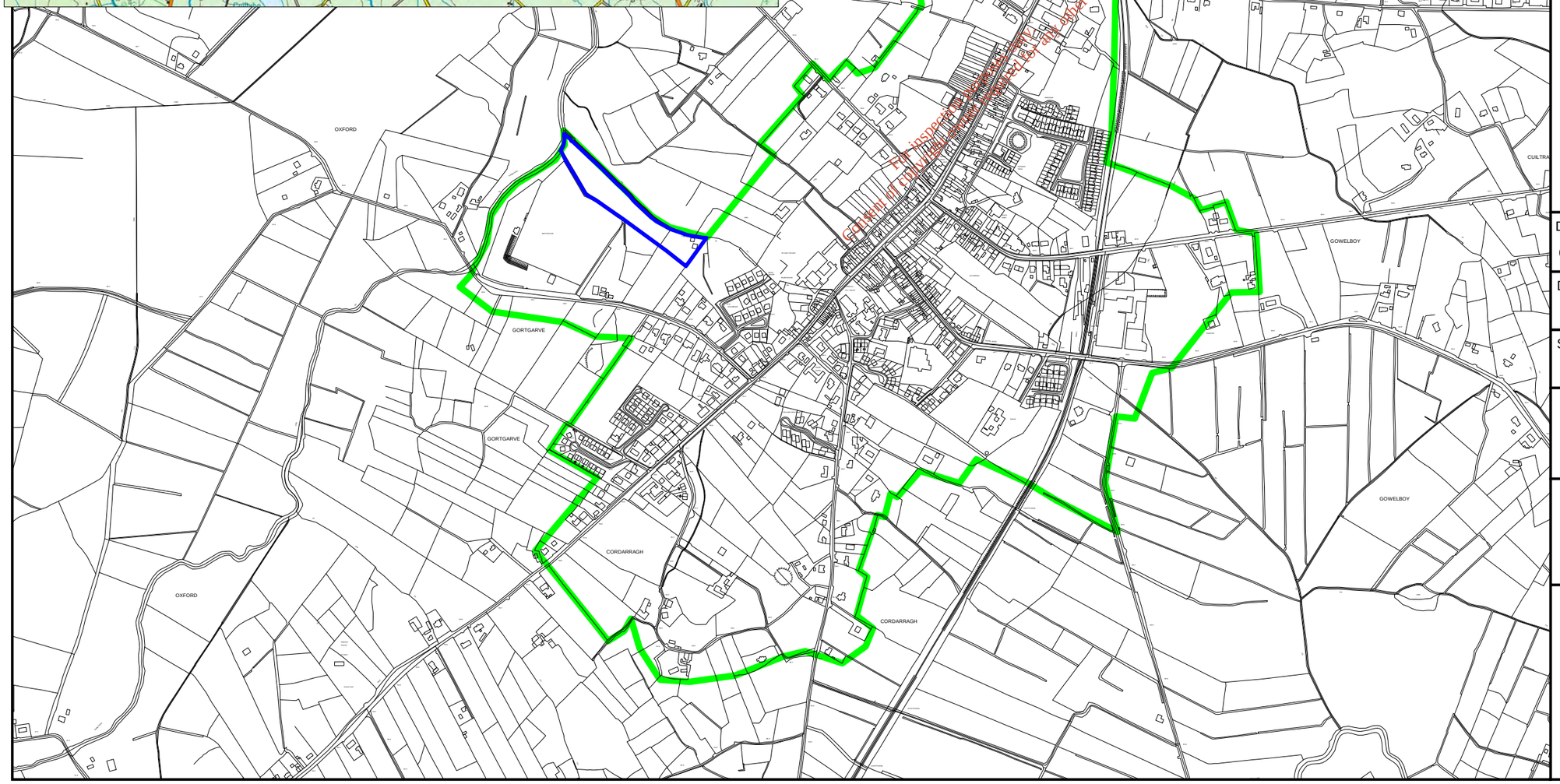
KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT B.1

Dwg. Title	Dwg. No.
Proposed Agglomeration Boundary Revision B Revised August 2010 Extended Agglomeration Boundary	2
Proposed Agglomeration Boundary with Proposed Discharge Points and Pumping Stations details	17





Legend:

- Kiltimagh Proposed Agglomeration Boundary
- Waste Water Treatment Plant Boundary

All Points Relevant to Proposed WWTP

- Primary Discharge Point
- Stormwater Discharge Point
- Secondary Emergency Discharge Point
- Pumping Station

REV B: Revision of PROPOSED Agglomeration Boundary to Reflect Local Area Plan.

Drawn By:	Checked By:	Approved By:
C Worsfold	**P. Gallagher / M. O'Grady**	**C. Scahill**

Drg. Nr:	Rev:
Map B1.1	**B**

Scale:	Date:
1: 1000 (Inset 1: 5000)	**August 2010**

Project:

Waste Water Discharge Licence Application

Drg. Title:

Kiltimagh Wastewater Treatment Plant PROPOSED Agglomeration Served by the Wastewater Treatment Works.

Mayo County Council
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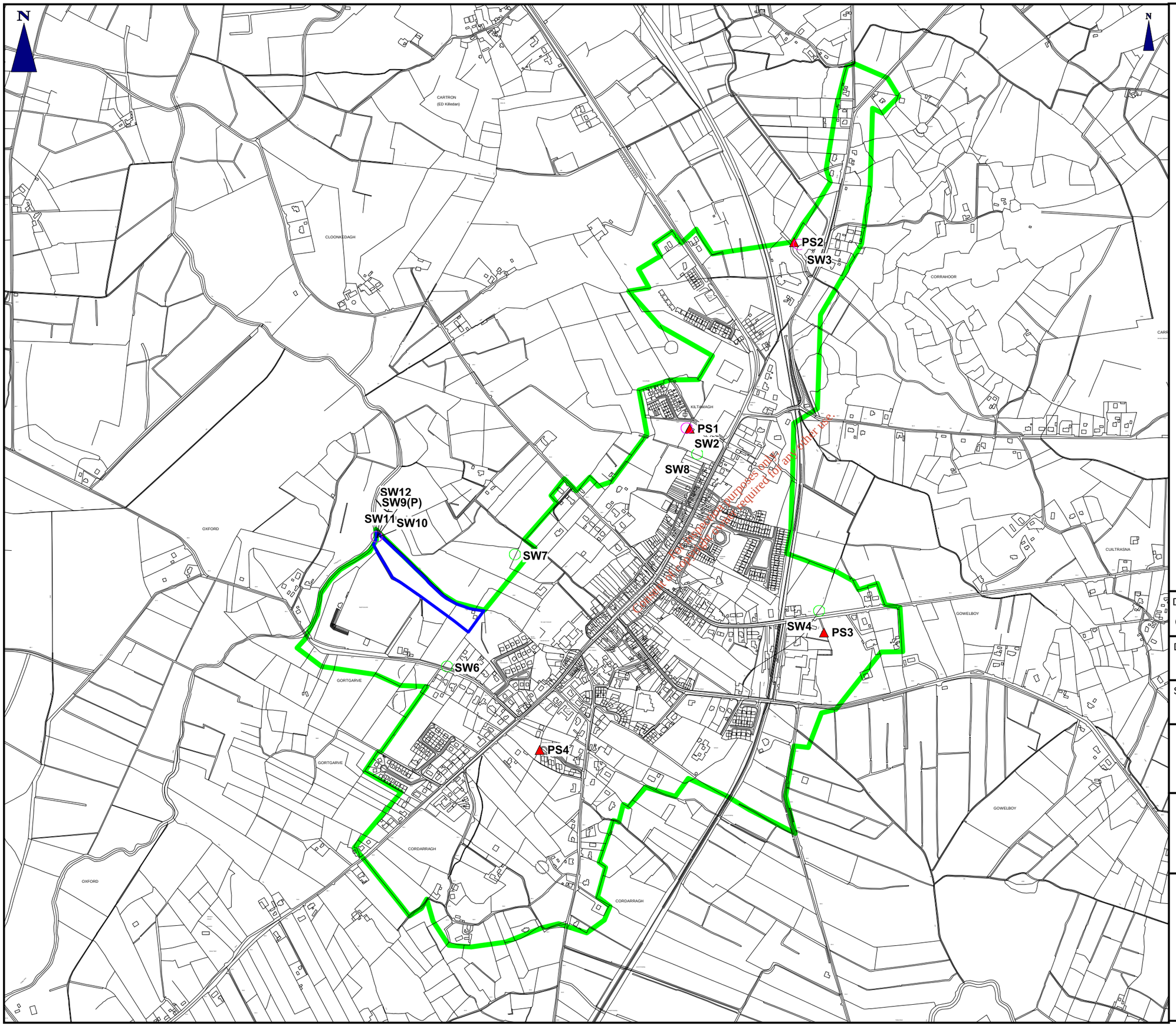

Legend

- Kiltimagh Proposed Agglomeration Boundary
- Waste Water Treatment Plant Boundary
- Secondary (Emergency) Discharge Point
- Stormwate Discharge Point
- Primary Discharge Point SW9(P)
- Proposed Pumping Station

Drawn By:	Checked By:	Approved By:
C Worsfold	**P. Gallagher / M. O'Grady**	**C. Scahill**

Drg. Nr:	Rev:
Map B1.1.1	**A**

Scale:	Date:
1: 1000	**August 2010**

Project:

Waste Water Discharge Licence Application

Drg. Title:

Kiltimagh Wastewater Treatment Plant PROPOSED Agglomeration Boundary with Discharge Point and Pumping Station Details.

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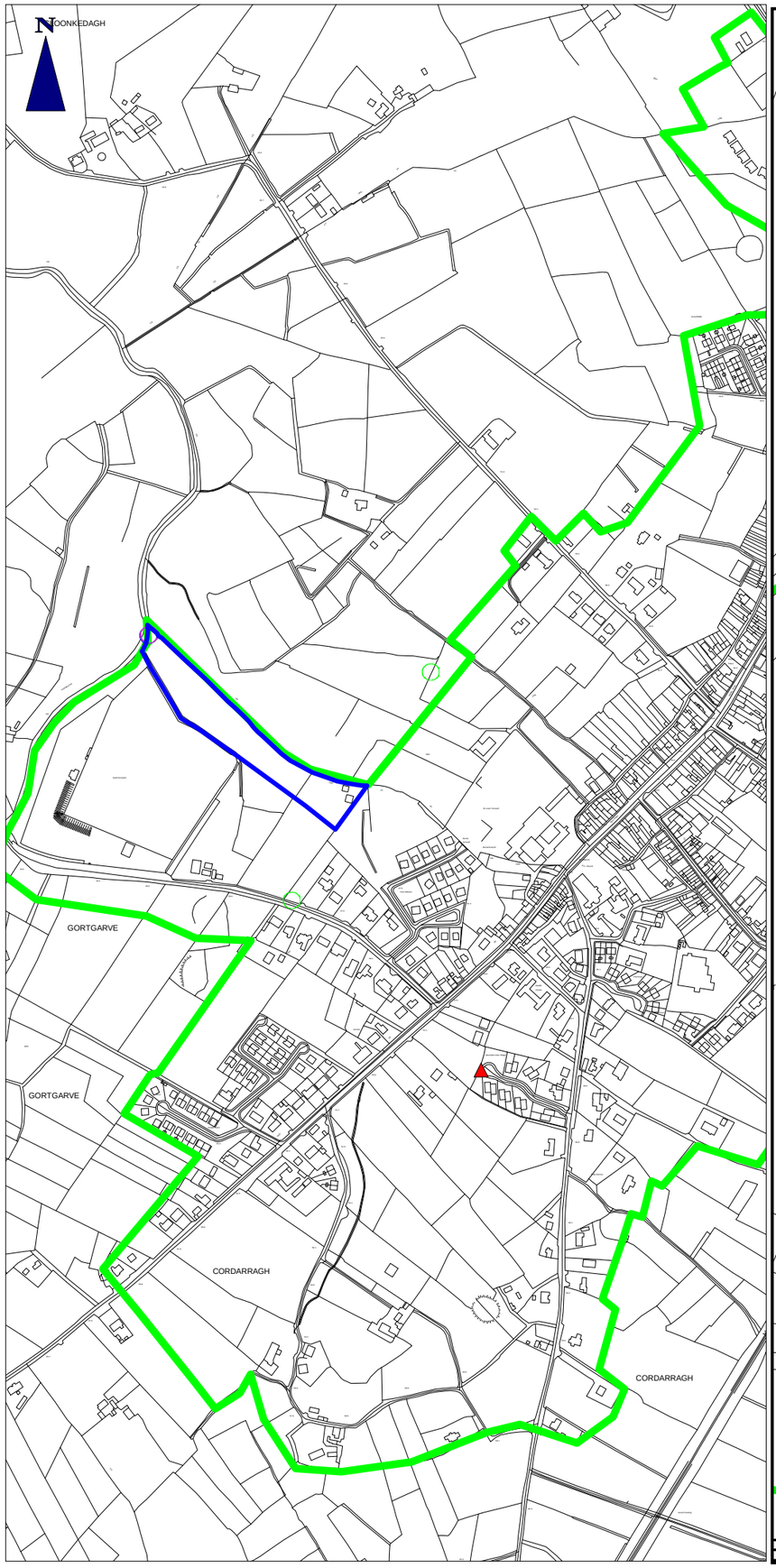
MAYO COUNTY COUNCIL

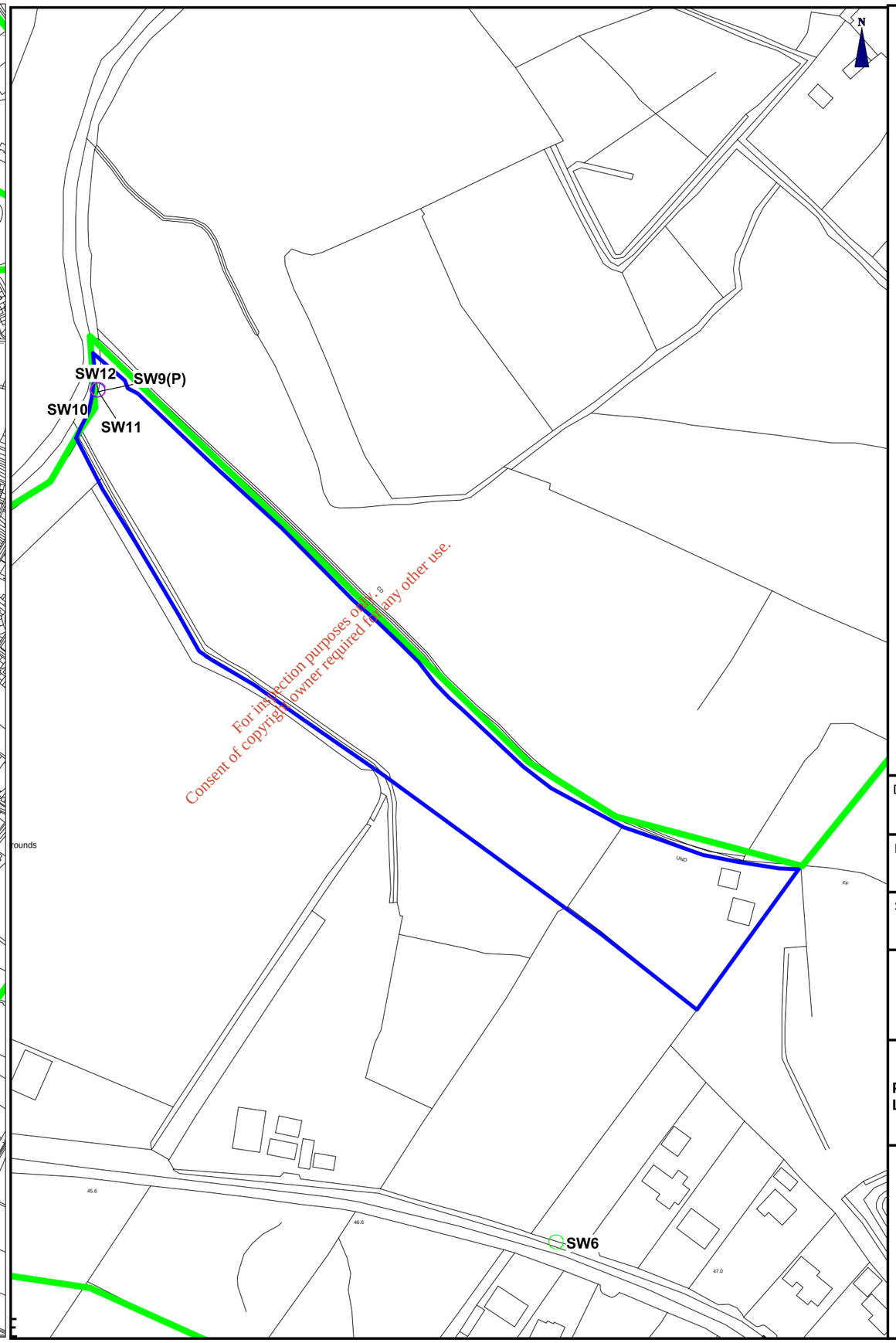
KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT B.2

Dwg. Title	Dwg. No.
Proposed Wastewater Treatment Plant Layout Plan Revision B Revised August 2010 Extended Agglomeration Boundary	4





Legend

Kiltimagh Proposed Agglomeration Boundary

Proposed Treatment Plant Layout

All Points Relevant to Proposed WWTP

- Secondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point
- Pumping Station

REV B: Revision of PROPOSED Agglomeration Boundary to Reflect Local Area Plan.

Drawn By:	Checked By:	Approved By:
C Worsfold	**P. Gallagher / M. O'Grady**	**C. Scahill**

Drg. Nr:	Rev:
Map B.2.1.	**B**
Scale: **1: 2,000 (Inset 1: 7,500)**	Date: **15.12.08**

Project:

Waste Water Discharge Licence Application

Drg. Title:

Proposed Kiltimagh Wastewater Treatment Plant Layout Plan.

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MAYO COUNTY COUNCIL

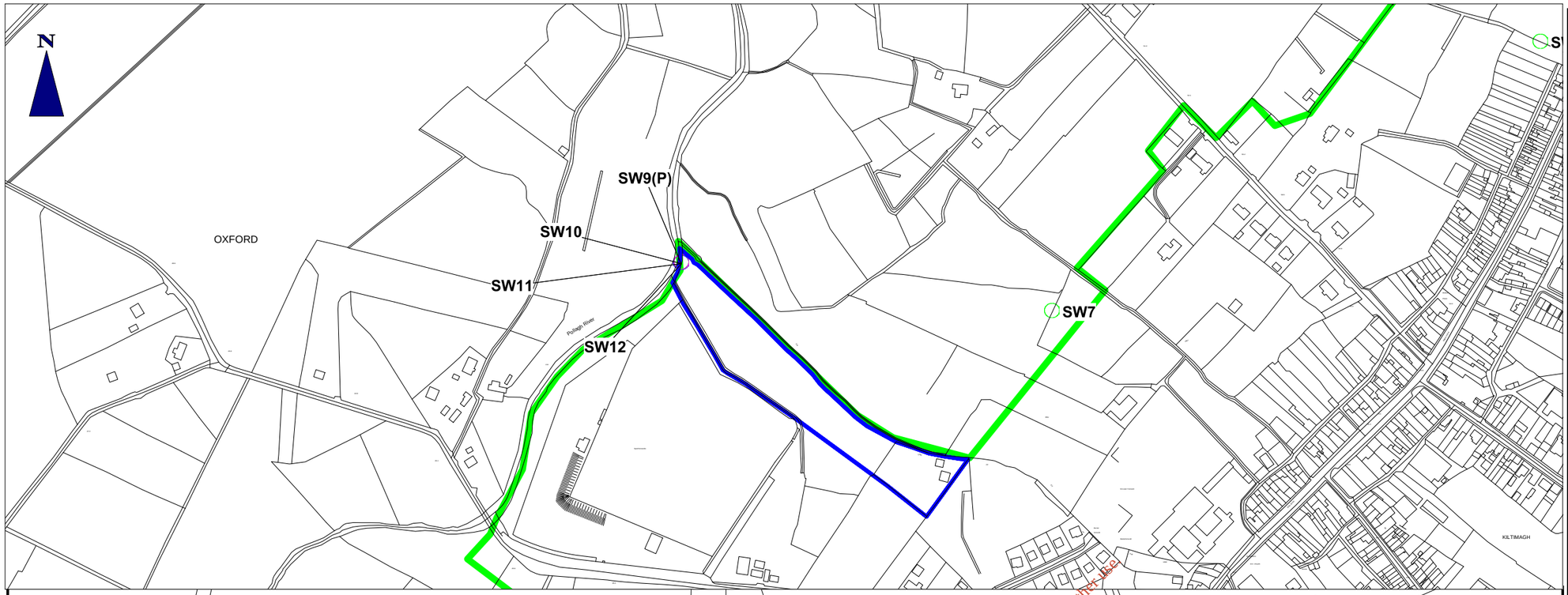
KILTIMAGH

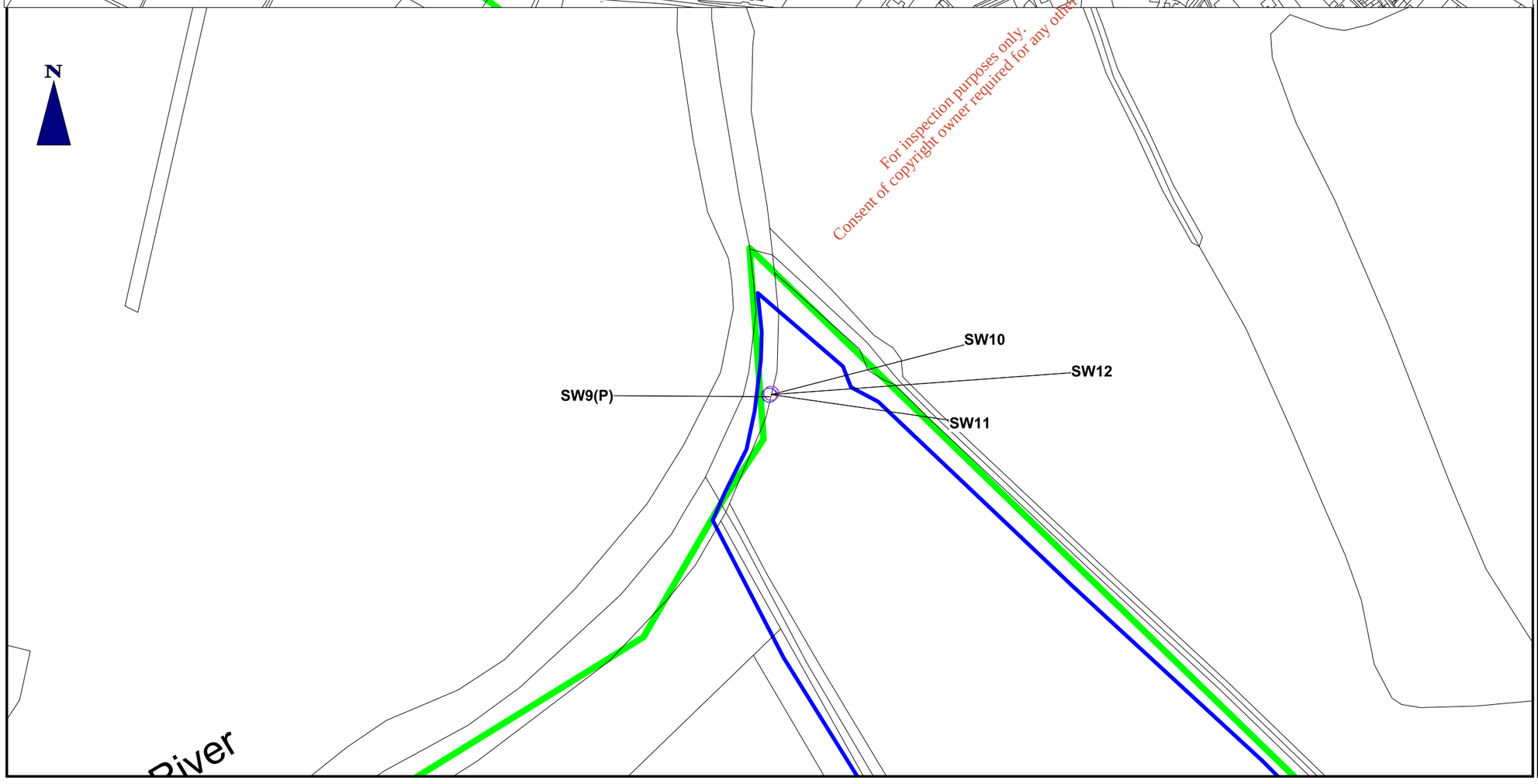
WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT B.3

Proposed Kiltimagh Wastewater Treatment Works

Dwg. Title	**Dwg. No.**
Location of Primary Discharge Point SW9 (P)	**6**
Revision B Revised August 2010	
Extended Agglomeration Boundary	





Legend

- Kiltimagh PROPOSED Agglomeration Boundary
- Kiltimagh Waste Water Treatment Plant Boundary

All Points Relevant to Proposed WWTP

- Seondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point SW9(P)
- Pumping Station

REV B: Revision of PROPOSED Agglomeration Boundary to Reflect Local Area Plan.

Drawn By:	Checked By:	Approved By:
C Worsfold	**P. Gallagher / M. O'Grady**	**C. Scahill**

Drg. Nr:	Rev:
Map B3.1	**B**

Scale:	Date:
1:5,000 & 1:750	**August 2010**

Project:

Waste Water Discharge Licence Application

Drg. Title:

PROPOSED Kiltimagh
Wastewater Treatment Works
Primary Discharge Location SW9(P)

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MAYO COUNTY COUNCIL

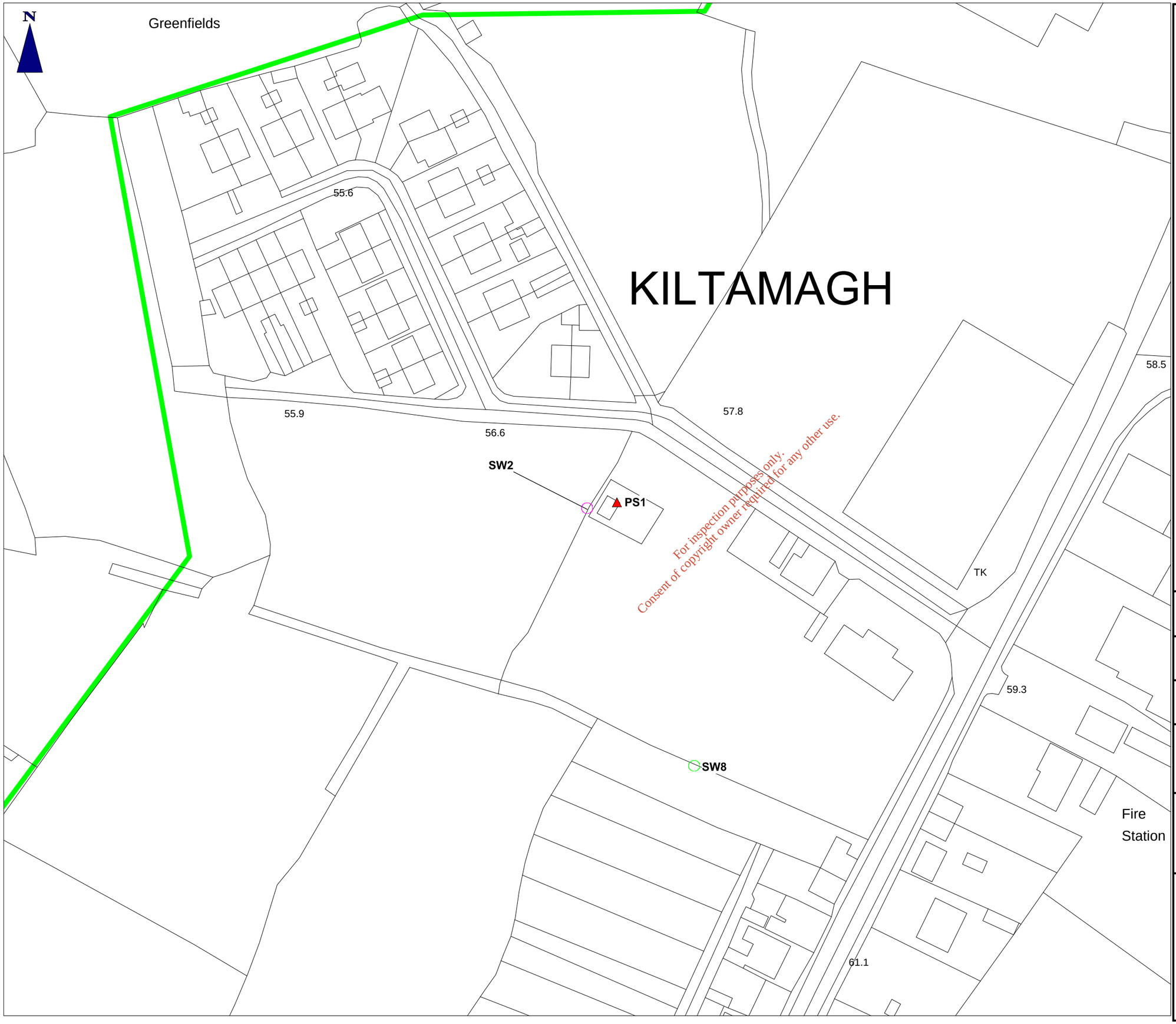
KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT B.4

Proposed Kiltimagh Wastewater Treatment Works

Dwg. Title	Dwg. No.
Location of Secondary (emergency) Discharge Point SW2	18
Location of Secondary (emergency) Discharge Point SW3	19
Location of Secondary (emergency) Discharge Point SW10	20



Legend

- Proposed Agglomeration Boundary

All Points Relevant to Proposed WWTP

- Secondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point
- Pumping Station

Drawn By:	Checked By:	Approved By:
C Worsfold	**P. Gallagher / M. O'Grady**	**C. Scahill**

Drg. Nr:	Rev:
Map B4.1.1	**A**

Scale:	Date:
1:1,000	**August 2010**

Project:

Waste Water Discharge Licence Application

Drg. Title: **PROPOSED Kiltimagh Wastewater Treatment Works Location of Secondary (Emergency) Discharge Point SW2**

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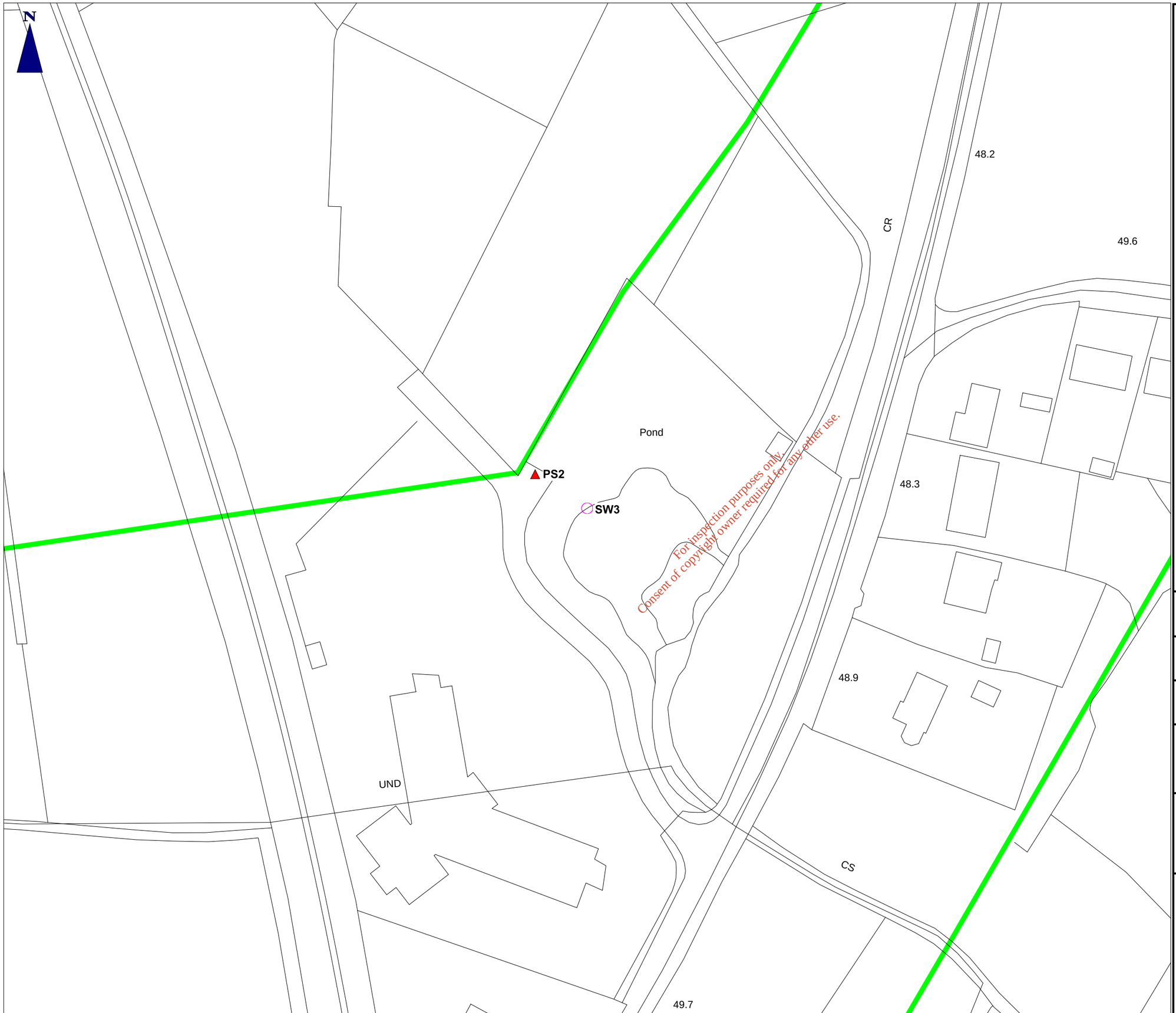

Legend

Proposed Agglomeration Boundary

All Points Relevant to Proposed WWTP

- Secondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point
- Pumping Station

Drawn By:	Checked By:	Approved By:
C Worsfold	**P. Gallagher / M. O'Grady**	**C. Scahill**

Drg. Nr:	Rev:
Map B4.2.1	**A**

Scale:	Date:
1:1,000	**August 2010**

Project:

Waste Water Discharge Licence Application

Drg. Title: **PROPOSED Kiltimagh Wastewater Treatment Works Location of Secondary (Emergency) Discharge Point SW3**

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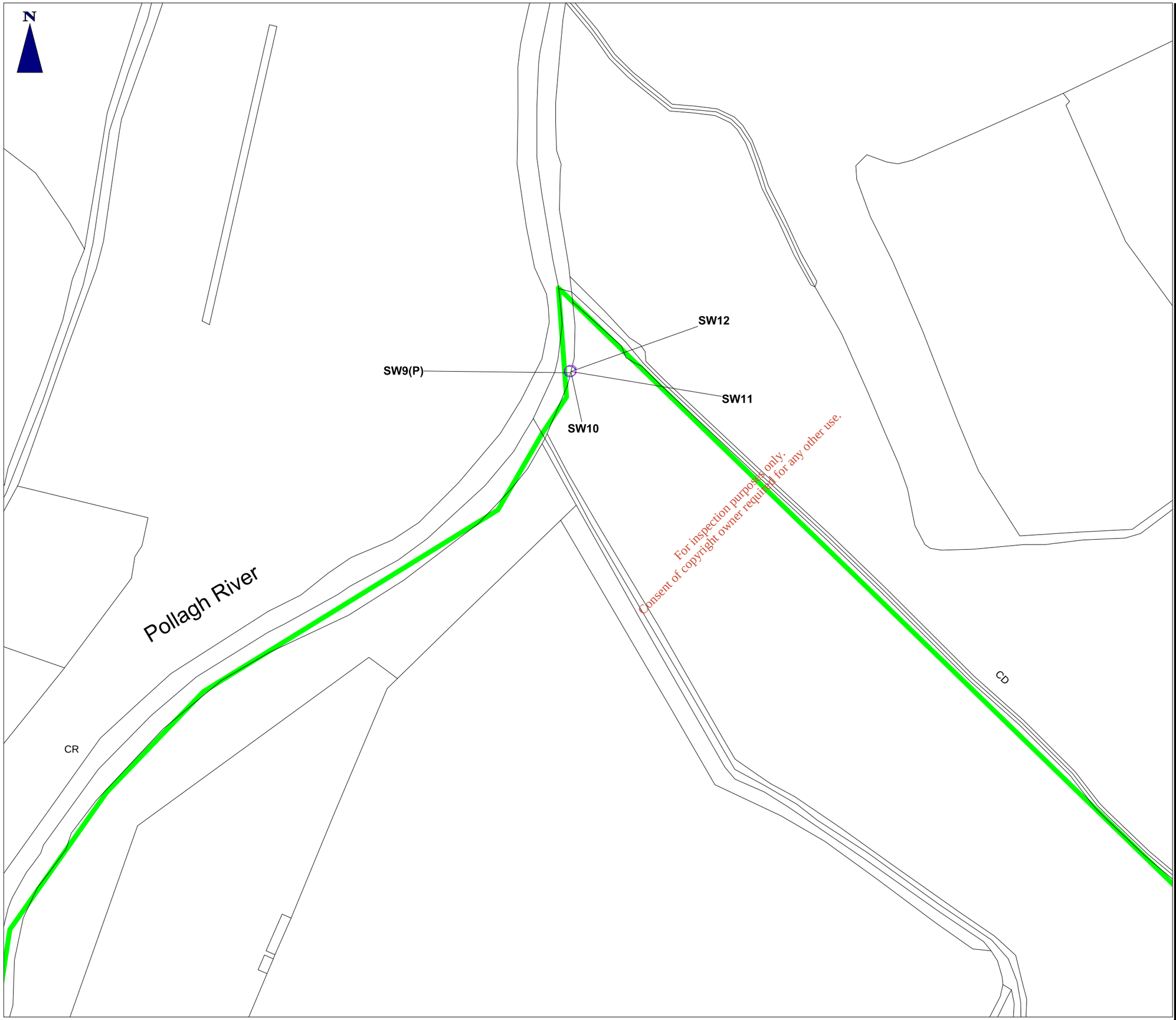

Legend

Proposed Agglomeration Boundary

All Points Relevant to Proposed WWTP

- Secondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point
- Pumping Station

Drawn By:	Checked By:	Approved By:
C Worsfold	P. Gallagher / M. O'Grady	C. Scahill

Drg. Nr:	Rev:
Map B.4.3.1	A

Scale:	Date:
1:1,000	August 2010

Project:

Waste Water Discharge Licence Application

Drg. Title: **PROPOSED Kiltimagh Wastewater Treatment Plant Location of Secondary (Emergency) Discharge Point SW10**

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MAYO COUNTY COUNCIL

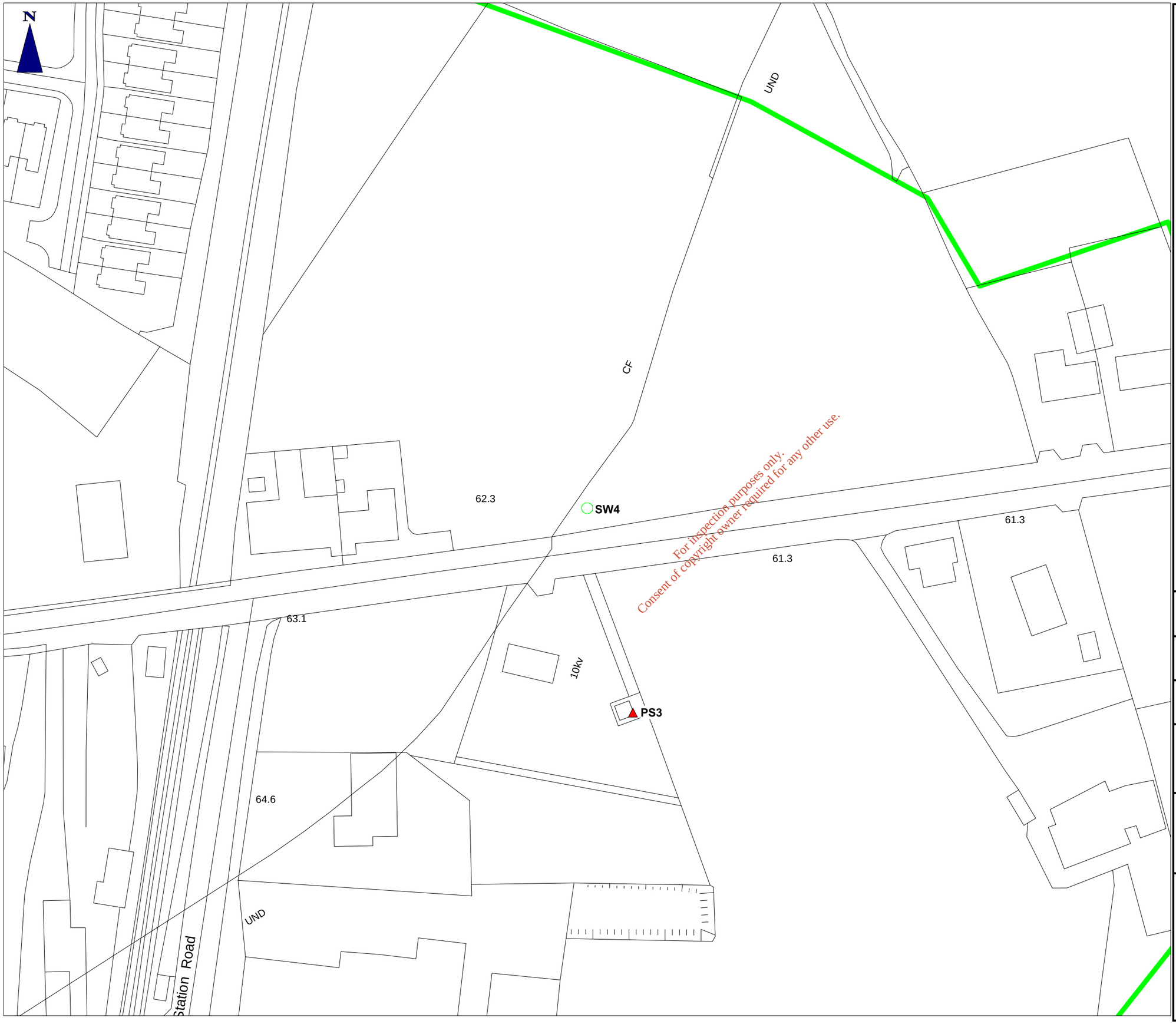
KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT B.5

Proposed Kiltimagh Wastewater Treatment Works

Dwg. Title	Dwg. No.
Location of Storm Water Discharge Point SW4	21
Location of Storm Water Discharge Point SW6	22
Location of Storm Water Discharge Point SW7	23
Location of Storm Water Discharge Point SW8	24
Location of Storm Water Discharge Point SW11	25
Location of Storm Water Discharge Point SW12	26



Legend

Proposed Agglomeration Boundary

All Points Relevant to Proposed WWTP

- Secondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point
- Pumping Station

Drawn By:	Checked By:	Approved By:
C Worsfold	**P. Gallagher / M. O'Grady**	**C. Scahill**

Drg. Nr:	Rev:
Map B5.1.1	**A**

Scale:	Date:
1:1,000	**August 2010**

Project:

Waste Water Discharge Licence Application

Drg. Title: **PROPOSED Kiltimagh Wastewater Treatment Works Location of Stormwater Discharge Point SW4**

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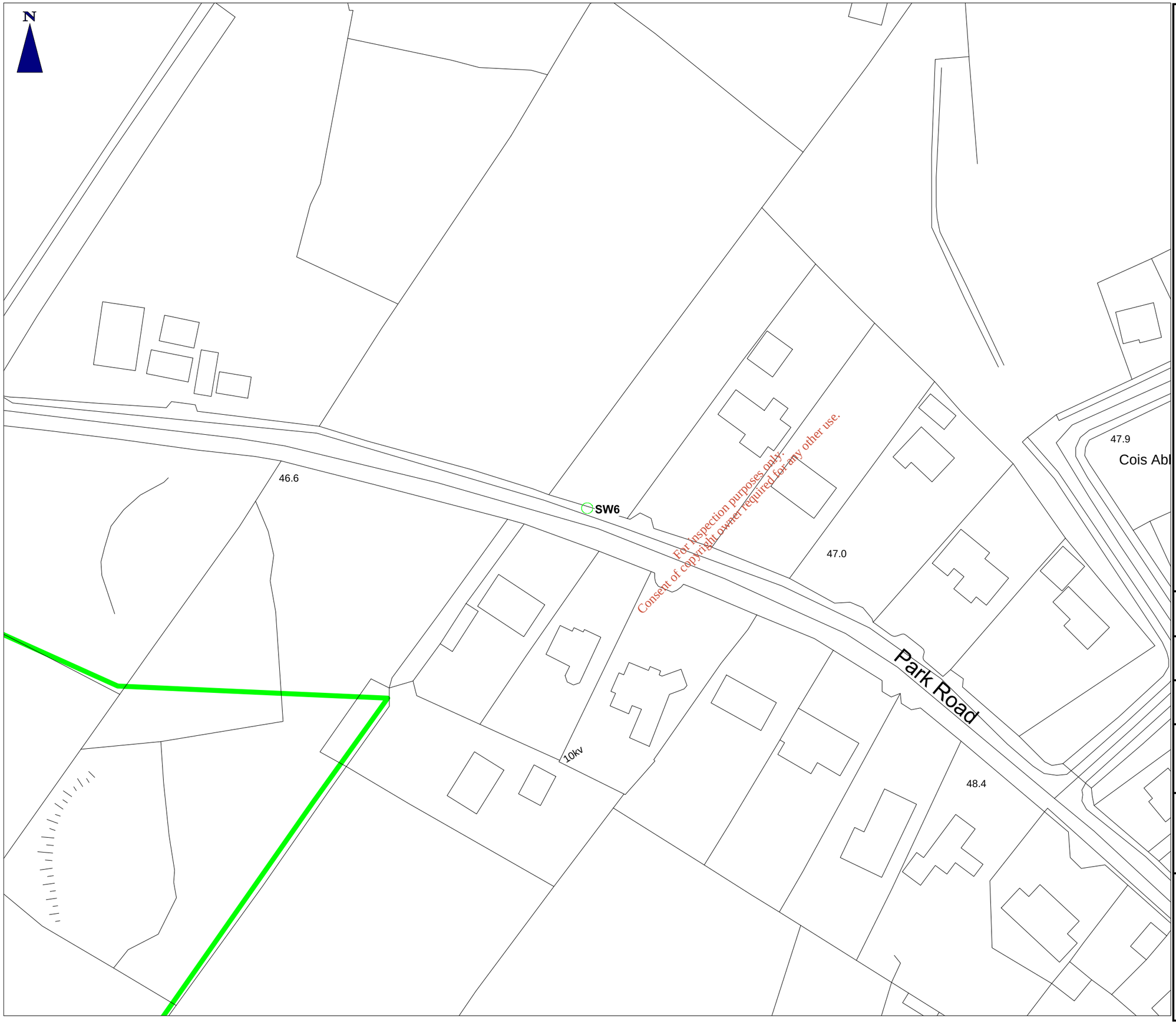

Legend

Proposed Agglomeration Boundary

All Points Relevant to Proposed WWTP

- Secondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point
- Pumping Station

Drawn By:	Checked By:	Approved By:
C Worsfold	**P. Gallagher / M. O'Grady**	**C. Scahill**

Drg. Nr:	Rev:
Map B5.3.1	**A**

Scale:	Date:
1:1,000	**August 2010**

Project:

Waste Water Discharge Licence Application

Drg. Title: **PROPOSED Kiltimagh Wastewater Treatment Works Location of Stormwater Discharge Point SW6**

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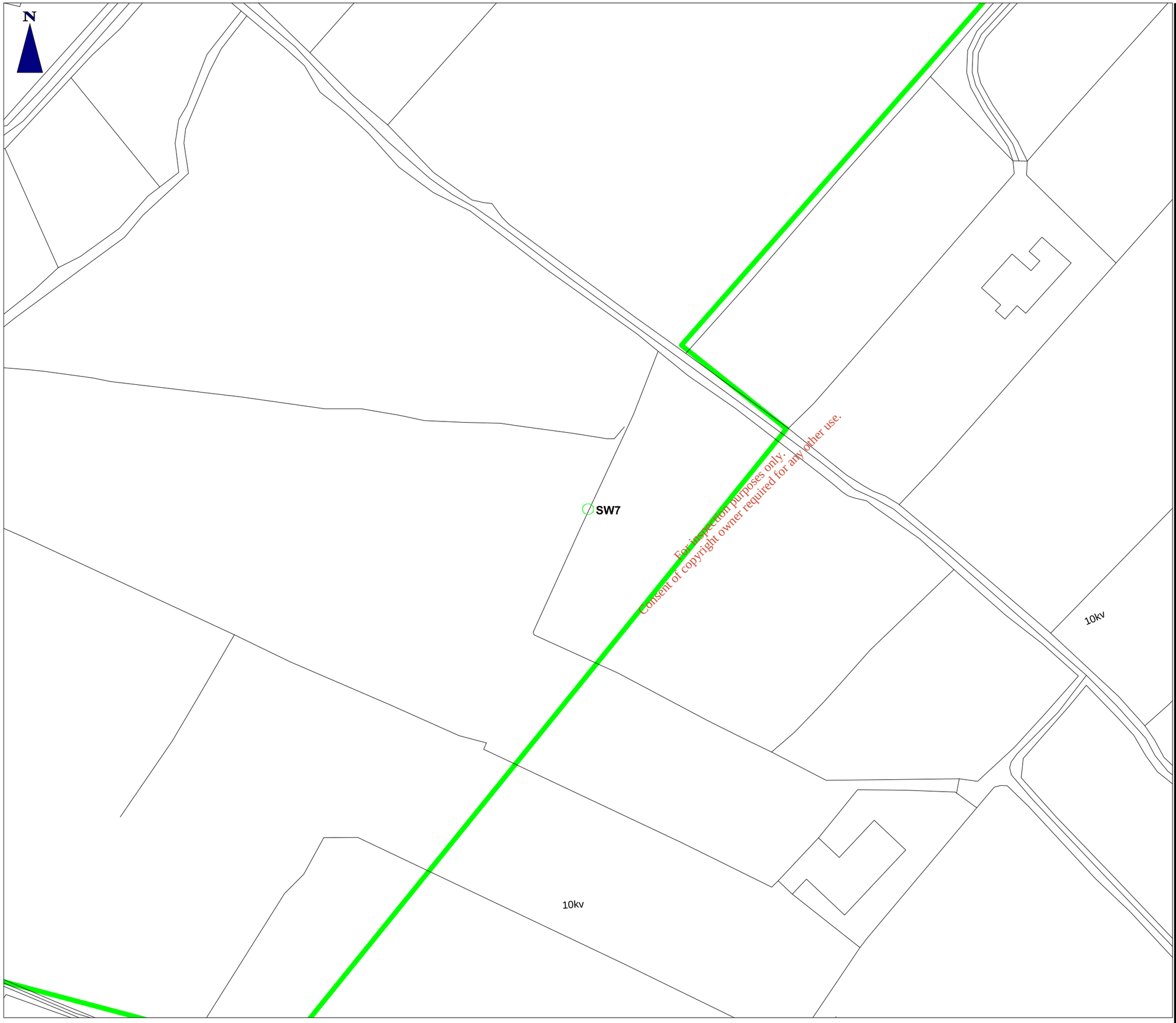

Legend

Proposed Agglomeration Boundary

All Points Relevant to Proposed WWTP

- Secondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point
- Pumping Station

Drawn By:	Checked By:	Approved By:
C Worsfold	**P. Gallagher / M. O'Grady**	**C. Scahill**

Drg. Nr:	Rev:
Map B5.4.1	**A**

Scale:	Date:
1:1,000	**August 2010**

Project:

Waste Water Discharge Licence Application

Drg. Title: **PROPOSED Kiltimagh Wastewater Treatment Works Location of Stormwater Discharge Point SW7**

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KILTAMAGH

N

55.9

56.6

57.8

58.5

59.3

61.1

62.0

SW2

PS1

SW8

TK

Villa

Fire Station

Walshtown

Well Boreen

Legend

Proposed Agglomeration Boundary

All Points Relevant to Proposed WWTP

- Secondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point
- Pumping Station

Drawn By:	Checked By:	Approved By:
C Worsfold	P. Gallagher / M. O'Grady	C. Scahill

Drg. Nr:	Rev:
Map B5.5.1	A

Scale:	Date:
1:1,000	August 2010

Project:

Waste Water Discharge Licence Application

Drg. Title: **PROPOSED Kiltimagh Wastewater Treatment Works Location of Stormwater Discharge Point SW8**

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Legend

- Proposed Agglomeration Boundary

All Points Relevant to Proposed WWTP

- Secondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point
- Pumping Station

Drawn By:	Checked By:	Approved By:
C Worsfold	P. Gallagher / M. O'Grady	C. Scahill

Drg. Nr:	Rev:
Map B5.6.1	A

Scale:	Date:
1:1,000	August 2010

Project:

Waste Water Discharge Licence Application

Drg. Title: **PROPOSED Kiltimagh Wastewater Treatment Plant Location of Stormwater Discharge Point SW11**

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Legend

Proposed Agglomeration Boundary

All Points Relevant to Proposed WWTP

- Secondary (Emergency) Discharge Point
- Stormwater Discharge Point
- Primary Discharge Point
- Pumping Station

Drawn By:	Checked By:	Approved By:
C Worsfold	P. Gallagher / M. O'Grady	C. Scahill

Drg. Nr:	Rev:
Map B5.7.1	A

Scale:	Date:
1:1,000	August 2010

Project:

Waste Water Discharge Licence Application

Drg. Title: **PROPOSED Kiltimagh Wastewater Treatment Plant Location of Stormwater Discharge Point SW12**

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G.I.S. Section

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MAYO COUNTY COUNCIL

KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT C.1

Operational Information Requirements **Revised August 2010**

C.1 Operational Information Requirements:

EXISTING SEWERAGE TREATMENT PLANT

The existing treatment plant was constructed in the 1950s and consists of the following:-

1. 300 mm diameter inlet sewer.
2. Double sided overflow weir with baffled screen
3. Overflow to adjacent drain
4. Twin detritus channels.
5. Twin manually raked coarse bar screens.
6. Separate feeds to Imhoff Tank (penstock controlled)
7. Imhoff Tank.
8. 300 mm outfall pipe to
9. Three sludge drying beds.

Inlet Works

The overflow screen on the inlet works is frequently clogged to its full height of approximately 300mm so that, in the event of a storm, the overflow does not operate until the inlet pipe is drowned to a level of 350mm over the invert. At the same time, the manual screen gets clogged rapidly in the absence of automatic raking and the level of rags, etc., in the screen rises rapidly to force the levels upstream upwards and cause the overflow weirs to overflow even during low flows.

Imhoff Tank

Primary sedimentation is provided by an Imhoff Tank with two sedimentation chambers and three gas vents. The length of the Imhoff Tank is 7.62m and the width of each sedimentation channel is 2.59m giving a surface area of 39.47m^2. The tanks were originally designed to cater for a capacity of 650 population equivalent. The present P.E. is 1,610 and allowing 227l/h/d gives a DWF OF 365m^3/Day. It is clear the plant is operating at over 200% of its capacity and the sewage does not receive full primary settlement. The partially treated effluent discharges to a drain at the treatment works site boundary which flows into the Pollagh River 320 metres away.

Sludge Drying Beds

The drying beds are not operational now as the sludge is sent by tanker to Swinford WWTP on a weekly basis.

PROPOSED SEWERAGE TREATMENT PLANT

The proposed wastewater treatment plant (WWTP) is currently under a Design Build Operate contract with the WWTP due to be commissioned January 2011 and the Constructed Wetlands in June 2011. The new WWTP has been designed for an initial capacity of 3,333PE. The plant has been designed to accommodate an increase in capacity to 5,000 PE should this be required in the future (2026). The collection network is not currently being upgraded. The proposed treatment process will consist of primary, secondary and phosphorus reduction in order to achieve the following effluent quality:

BOD = 25mg/l
SS = 35mg/l
Total N = 15mg/l
Total P = 1mg/l

The proposed WWTP will consist of the following;

1. Screening
2. Grit Removal & Classifier
3. Inlet Pumping Station (Foul & Storm Pumps two each 1 duty & 1 standby)
4. Storm water Holding Tank
5. Aeration Tanks, Air blowers and diffusers
6. Ferric Sulphate Storage and Dosing
7. Final Settlement Tank
8. Sludge Pumping and Thickening
9. Odour Control
10. Noise control
11. Standby generator
12. Instrumentations –Ultrasonic Level Controllers, Dissolved Oxygen Meter, Electromagnetic Flowmeters, Composite Flow Samplers
13. Constructed Wetlands

The treated effluent will flow to a collecting manhole and on through a flow measurement flume after which it will mix with the storm water being attenuated in a constructed wetlands area before discharging directly to the River Pollagh SW9(P).

C.1.1 Storm water overflows

Existing

There is 1 No. storm water overflow point at the Treatment Works site (**SW5**) and this overflows to a drain that flows into the Pollagh river 320m approx away.

There are 4 No. storm overflow manholes on the existing collection system that discharge to adjacent streams/drains (**SW4, SW6, SW7 & SW8)**.

Proposed

It is proposed to retain existing storm overflow at **SW4, SW6 SW7 & SW8**.

As a result of the funding for the collection network been withdrawn **SW6, SW7** and **SW8** will not now be closed as originally planned as part of the collection network upgrade. It is considered that the closure of these Storm Water Overflows, prior to the network being upgraded and separated, would put the existing network under excessive pressure which may result in storm water backing up manholes in storm events.

SW5 at the treatment works will be closed.

No commitment from the Department has been undertaken on the reinstatement of funding for the collection system. As a consequence the existing combined system will not be separated therefore the storm water contained in the system will not be reduced as expected. In order to cope with exceptional storm events 2 No. additional storm water overflows have been introduced at the WWTP namely **SW11** and **SW12**.

SW11 - Overflow from storm holding tank. The overflow into the storm tank is to occur downstream of the inlet screens at flows in excess of 3DWF of the design flow. The design PE is 3,333 so 3DWF would be ((3,333 x 0.225) / (24 x 60 x 60)) x 3 = 26 l/s. The storm tank is sized to hold 12 hours (½ day) average flow at the design PE (3,333) which is equal to (3,333 x 0.225 x 0.5) = 374 m^3. If the storm tank fills it overflows to an outfall. Once the storm has passed the contents of the storm tank are returned to the pumping station to be pumped to the aeration tanks for full treatment.

SW12 - The inlet works are sized to handle flows in excess of 6 DWF of the ultimate design flow. The ultimate design flow is based on an ultimate PE of 5,000 so 6DWF would be ((5,000 x 0.225) / (24 x 60 x 60)) x 6 = 78 l/s. Due to the fact that the collection system upgrade (which was to separate the system) is not going ahead there is the potential for higher flows than that entering the WWTP during storm events. If flows greater than 78 l/s enter the WWTP they will overflow at the inlet manhole. This overflow is designed to meet the requirements of an SWO as it will only happen at flows far exceeding 6DWF at current flows.

Each of these will discharge through the same outfall as the proposed primary discharge via the constructed wetlands attenuation area.

C.1.2 Pumping Stations

Existing

Reference	Location	No of Pumps
PS1	Aiden Street	2
PS2	Swinford Road	2
PS3	Georges Street	2
PS4	Mountain View Estate	2

Proposed

It is proposed to retain all above pumping stations as detailed above.

MAYO COUNTY COUNCIL

KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT C.2

Outline Description of Outfall Design and Construction

Revised August 2010

C.2 Outline Description of Outfall Design and Construction

Existing

There is an outfall pipe from the existing plant which flows directly into the River Pollagh. However this pipe has been blocked and abandoned for some time and the existing effluent flows into the drain adjacent to the WWTP (**SW1(P)** detailed below). This drain joins the River Pollagh approximately 320m downstream of primary discharge point (**SW1(P)**) .

Primary Discharge Point SW1(P)

Location:	Gortgarve (133759E, 289308N)
Receiving Water:	Drain that flows to River Pollagh 320m away
Originates:	Effluent from Kiltimagh WWTP
Pipe Size:	225mm
Design Criteria:	Continuous flow from Kiltimagh WWTP
Construction Detail:	Open ended pipe

Secondary Discharge Points

SW2

Location:	Aiden Street Pumping Station (134406E, 289806N)
Receiving Water:	Drain
Originates:	Emergency overflow from pumping station. Only occurs if there is a power cut or the pumping equipment breaks down
Pipe Size:	225mm
Design Criteria:	Emergency/safety overflow
Construction Detail:	Open ended pipe

SW3

Location:	Swinford Road Pumping Station (134717E, 290314N)
Receiving Water:	Surface water pond
Originates:	Emergency overflow from pumping station. Only occurs if there is a power cut or the pumping equipment breaks down
Pipe Size:	225mm
Design Criteria:	Emergency/safety overflow
Construction Detail:	Pipe discharges to stone filled drain

Storm Water Overflows

SW4

Location:	George`s Street Pumping Station (134773E, 289301N)
Receiving Water:	Surface water drain
Originates:	Flows in excess of 6 DWF entering PS2 overflow to adjacent drain via SW4
Pipe Size:	225mm
Design Criteria:	Storm water overflow
Construction Detail:	Open ended pipe

SW5

Location:	Gortgarve (133830E, 289308N)
Receiving Water:	Drain that flows to River Pollagh 350m away
Originates:	Storm water overflow at inlet to wastewater treatment plant
Pipe Size:	225mm
Design Criteria:	Storm water overflow at inlet to wastewater treatment plant
Construction Detail:	Open ended pipe

SW6

Location:	Park Road (133742E, 289147N)
Receiving Water:	Surface water drain
Originates:	Storm water overflow manhole
Pipe Size:	225mm
Construction Detail:	Open ended pipe

SW7

Location:	Rear of St. Louis Covent (133931E, 289457N)
Receiving Water:	Surface water drain
Originates:	Storm water overflow manhole
Pipe Size:	225mm
Construction Detail:	Open ended pipe

SW8

Location:	HSE grounds off Aiden Street Lower (134435E, 289735N)
Receiving Water:	Surface water drain
Originates:	Storm Water overflow manhole
Pipe Size:	225mm
Construction Detail:	Open ended pipe

Proposed System

The blocked outfall pipe which flows directly to the River Pollagh is to be re-commissioned and the effluent from the new WWTP and wetlands will discharge directly to the River Pollagh via the existing outfall pipe. This location is shown on Drawing No. Map B.3.1. as **SW9(P)**. The current in-use primary discharge point **SW1(P)** is to be decommissioned once the constructed wetlands are commissioned June 2011.

Primary Discharge Point SW9(P) (abandoned point to be re-commissioned)

Location:	Gortgarve (133549E, 289507N)
Receiving Water:	River Pollagh
Originates:	Effluent from Kiltimagh WWTP
Pipe Size:	225mm
Design Criteria:	This is the location of the original Primary Discharge Point before the outfall pipe became blocked and subsequently abandoned. The outfall pipe is to be re-commissioned and the effluent from the new WWTP wetland will discharge directly to the River Pollagh via the existing outfall pipe.

Secondary (emergency) Discharge Points

Due to the collection network not being upgraded as originally planned, all of the above existing secondary (emergency) discharge points are to be retained and one new secondary (emergency) discharge point is being introduced in to the system, **SW10** detailed below.

SW2 & SW3 details as above

SW10 (new)

Location:	WWTP, Gortgarve, Kiltimagh (133549E, 289507N)
Receiving Water:	Pollagh River via constructed wetlands
Originates:	Overflow at inlet pumps
Design Criteria:	The inlet pumping station (located downstream of the inlet works) contains a secondary emergency overflow. The pumping station consists of forward feed pumps sized to pump 3 DWF (of the design PE) to the aeration tanks and also storm pumps to pump an additional 3DWF to the storm tank.The emergency overflow should only ever activate in the event of a malfunction. Both sets of pump are a duty standby arrangement and the WWTP will also have an emergency generator in the event of a power outage.

Storm Water Overflows
Due to the collection network not being upgraded as originally planned, all for the above existing storm water overflows points are to be retained with the exception of **SW5** which will be closed. Also two new storm water overflows are being introduced in to the system, **SW11 & SW12** detailed below.

SW4, SW6, SW7, SW8 details as above

SW11 (new)

Location:	WWTP, Gortgarve, Kiltimagh (133549E, 289507N)
Receiving Water:	Pollagh River via constructed wetlands
Originates:	Overflow from storm holding tank
Design Criteria:	The overflow into the storm tank is to occur downstream of the inlet screens at flows in excess of 3DWF of the design flow. The design PE is 3,333 so 3DWF would be ((3,333 x 0.225) / (24 x 60 x 60)) x 3 = 26 l/s. The storm tank is sized to hold 12 hours (½ day) average flow at the design PE (3,333) which is equal to (3,333 x 225 x 0.5) = 374 m^3. If the storm tank fills it overflows to an outfall. Once the storm has passed the contents of the storm tank are returned to the pumping station to be pumped to the aeration tanks for full treatment.

SW12 (new)

Location:	WWTP, Gortgarve, Kiltimagh (133549E, 289507N)
Receiving Water:	Pollagh River via constructed wetlands
Originates:	The inlet works
Design Criteria:	The inlet works are sized to handle flows in excess of 6 DWF of the ultimate design flow. The ultimate design flow is based on an ultimate PE of 5,000 so 6DWF would be ((5,000 x 225) / (24 x 60 x 60)) x 6 = 78 l/s. Due to the fact that the collection system upgrade (which was to separate the system) is not going ahead there is the potential for higher flows than that entering the WWTP during storm events. If flows greater than 78 l/s enter the WWTP they will overflow at the inlet manhole. This overflow is designed to meet the requirements of an SWO as it will only happen at flows far exceeding 6DWF at current flows.

MAYO COUNTY COUNCIL

KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT D.2

Table D.2 Tabular Details on Discharge Points

Revised August 2010

D.2 Tabular Data on Discharge Points

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	Designation	EASTING	NORTHING
Point Code Provide label	Point Type (e.g., Primary/ Secondary/	Local Authority Name (e.g., Donegal County Council)	Receiving Water Body Type (e.g., River, Lake,	Receiving Water Body Name (e.g., River Suir)	Protected Area Type (e.g., SAC, candidate	6E-digit GPS Irish National Grid	6N-digit GPS Irish National Grid Reference
SW1(P)	Primary	Mayo County Council	River	Drain to River Pollagh		133759	289308
SW2	Secondary (emergency)	Mayo County Council	River	Drain to River Pollagh		134406	289806
SW3	Secondary (emergency)	Mayo County Council	Pond	Surface Water Pond		134717	290314
SW4	Storm water	Mayo County Council	Drain	Drain		134773	289301
SW5	Storm water	Mayo County Council	River	Drain to River Pollagh		133830	289308
SW6	Storm water	Mayo County Council	River	Drain to River Pollagh		133742	289147
SW7	Storm water	Mayo County Council	River	Drain to River Pollagh		133931	289457
SW8	Storm water	Mayo County Council	River	Drain to River Pollagh		134435	289735
SW9(P)	Proposed Primary	Mayo County Council	River	River Pollagh	River Moy SAC	133549	289507
SW10	Secondary (emergency)	Mayo County Council	River	River Pollagh	River Moy SAC	133549	289507
SW11	Storm water	Mayo County Council	River	River Pollagh	River Moy SAC	133549	289507
SW12	Storm water	Mayo County Council	River	River Pollagh	River Moy SAC	133549	289507

MAYO COUNTY COUNCIL

KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT F.1

Screening & Scoping Document

Appropriate Assessment

Assimilative Capacity

Mayo County Council

Kiltimagh Sewerage Scheme

Appropriate Assessment Screening & Scoping Report

March 2009

MGW0078CR0009

RPS

Kiltimagh Sewerage Scheme

Appropriate Assessment Screening & Scoping Report

DOCUMENT CONTROL SHEET

Client	Mayo County Council					
Project Title	Kiltimagh Sewerage Scheme					
Document Title	Appropriate Assessment Screening & Scoping Report					
Document No.	MGW0078RP0003					
This Document Comprises	DCS	TOC	Text	List of Tables	List of Figures	No. of Appendices
	1	1	32	1	1	2

Rev.	Status	Author(s)	Reviewed By	Approved By	Office of Origin	Issue Date
F01	Final	M Walsh/D Kearney			Galway	26/03/09

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APPENDIX A **DEHLG - Circular L8/08**

APPENDIX B **NPWS Site Synopsis River Moy SAC**

1 INTRODUCTION

RPS has been commissioned by Mayo County Council to prepare out an Appropriate Assessment Screening and Scoping Report for Kiltimagh Sewerage Scheme. The assessment conducted will be in line the Habitats Directive 92/43/EEC, Article 6(3) and the recommendations and protocol set out in the Water Services Circular Letter L8/08: *Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments* (2nd September 2008).

1.1 SCOPE

The upgrading of the Kiltimagh Sewerage Scheme includes; upgrading the existing combined sewer network, development of a constructed wetland and the installation of a modern wastewater treatment facility, to replace the existing treatment facility. The upgrade will improve the quality of the discharge to the River Pollagh when compared to the current situation.

The existing wastewater treatment facility and proposed constructed wetland lie adjacent to the River Pollagh which is designated under the River Moy Special Area of Conservation (SAC). SACs are also known as Natura 2000 sites.

Therefore, an Appropriate Assessment may be required under the Habitats Directive 92/43/EEC, Article 6(3) and (4), Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites. Articles 6(3) and (4) of the Directive, state the following;

6.3 'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the site in view of the site's conservation objectives... the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned….'

6.4 'If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest… the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected...'

To determine whether an Appropriate Assessment is required, an initial screening assessment must be conducted. The screening exercise will be conducted in line with the recommendations and protocol set out in Water Services Circular Letter L8/08 and the Guidance from the Commission[1]. Archaeological Heritage and Flooding are also to be considered under the provisions of the Circular. These issues are addressed in Section 3 of this Report.

The results of this screening exercise and the scope of the assessments proposed must be sent to the Department of the Environment, Heritage and Local Government (DEHLG) Development Applications Unit (DAU) to determine whether an Appropriate Assessment is required.

[1] European Communities, 2000. Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC
European Communities, 2002. Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance in the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC
European Communities, 2007. Guidance document on Article 6(4) of the 'Habitat Directive' 92/43/EEC. Clarification of the concepts of; Alternative Solutions, Imperative Reasons of Overriding Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.

2 PROJECT DESCRIPTION

2.1 EXISTING SEWERAGE SCHEME

The existing scheme consists of a combined foul and storm water system. There are 3 no. Pumping Stations in Kiltimagh, at Aidan St, George's St and Swinford Road, which pump the combined foul and storm waters to Kiltimagh Wastewater Treatment Facility (an 'Imhoff tank'). This Treatment Facility is currently operating beyond its capacity, having originally been designed for 650 PE, and the quality of treated effluent does not meet the required standard. Treated effluent is currently being discharged to the River Pollagh which forms part of the River Moy SAC.

There are a number of storm water overflows within the existing system which discharge to local streams during periods of high rainfall. The pumping stations contain emergency overflows which operate in the event of pump malfunction.

The layout of the existing scheme is shown in **Figure 2.1**.

2.2 PROPOSED SEWERAGE SCHEME

A new sewerage scheme for Kiltimagh has been proposed. The new system involves the upgrading of the existing combined sewer network to separate foul and storm water management systems, extension of the networks, provision for up to 5 no. new pump stations, development of a constructed wetland and the installation of a modern wastewater treatment facility, to replace the existing 'Imhoff Tank'. Attenuated stormwater and treated effluent will be discharged to the River Pollagh which forms part of the River Moy SAC. The proposed upgrade will improve the quality of the effluent discharged to the River Pollagh when compared to the current situation.

2.2.1 Upgrade of Existing Treatment Plant

The existing wastewater treatment plant (WWTP) will be upgraded in order to replace the existing 'Imhoff Tank'. The new treatment plant will be designed for 3,333 PE which will cater for the population of Kiltimagh and expansion over the next ten to fifteen years. The plant will include secondary treatment, nutrient removal and storm water balancing. The hydraulic capacity will be 750 cu.m/day dry weather flow (DWF), with a peak flow through capacity of

N

Swinford Road Pump Station

Aiden Street Pump House

Storm Overflow

Existing Outfall to River Pollagh

Storm Overflow

Sewerage Treatment Plant

Storm Overflow

George's Street Pump House

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CLOONKEDAGH
LISNAMANEEAGH
KILLEDAN DED
CORRAHOOR
KILTAMAGH
KILTAMAGH DED
GORTGARVE
GOWELBOY

Legend

- Sewerage Treatment Plant
- Pumping Station
- Foul Sewers
- Storm Overflows
- River
- Rising Main
- Manhole
- River Moy SAC

Mayo County Council

Project

Kiltimagh Sewerage Scheme

Title

Layout of Existing Scheme

Figure 2.1

RPS

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Issue Details

Drawn by:	MC	**Project No.**	MGW0078
Checked by:	PJG	**File Ref.**	MGW0078MI0010
Approved by:	SG		
Scale:	NTS	**Drawing No.**	MI0010
Date:	March 2009	**Rev.**	F01

Notes

1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
2. All levels are referred to Ordnance Datum, Malin Head.
3. Ordnance Survey Ireland Licence EN 0005008 ©Copyright Government of Ireland.

Ordnance Survey Ireland

2,250 cu.m/day (3DWF). A storm water storage tank equivalent to 12 hours average flow storage (375 cu. m) will also be provided at the treatment plant.

Column two of **Table 2.1** sets out the maximum discharge standards required for the River Pollagh under the Urban Wastewater Treatment Regulations 2001. Column three sets out the discharge standards to be achieved after treatment in the proposed WWTP.

Table 2.1 WWTP discharge standards

Parameter	Permitted Standards to River Pollagh (mg/l) (S.I. 254 of 2001)	Average Standards to be Achieved in WWTP (mg/l)
Biological Oxygen Demand	**25**	**20**
Suspended Solids	**35**	**30**
Total Nitrogen	**15**	**15**
Total Phosphorous	**2**	**1**

2.2.2 Upgrade of Sewer Network

The existing combined system will be refurbished and extended to cater for foul sewage only. A completely new storm water collection system shall be constructed to collect and discharge storm water to the River Pollagh and the various streams that flow on the outskirts of the town. All existing storm water over flows will be removed.

Two new foul pumping stations will also be constructed as part of the upgrade of the scheme.

2.2.3 Constructed Wetlands

It is proposed to construct a wetland approximately 0.8 hectares in area, adjacent to the existing WWTP in order to attenuate;

(a) Storm-water run-off from the proposed network, and
(b) Final effluent discharged from the upgraded treatment plant.

The attenuated water will then be discharged to the River Pollagh which forms part of the River Moy SAC.

The wetland is intended for attenuation of stormwater and final effluent discharges only and will not be used as a form of tertiary treatment for treated effluent or stormwater. The maximum permitted run-off from the wetland has been calculated to ensure that there will be no increase in flows discharged to the river when compared to the existing situation. The wetland will comprise of three cells separated by bunds and will be designed to operate at water levels between 200mm and 500mm. A weir overflow will be incorporated into the wetland system at the inlet pipe in order to cater for extreme storm events. The wetland will be planted with native plant species, typical of the surrounding lands.

The wetland will be constructed such that the flood plain is maintained and the wetland will flood in extreme flood events. The bund construction will robust enough to withstand any flood event and subsequent receding of waters.

The layout of the proposed scheme is shown in **Figure 2.2**

While the majority of the storm water will be discharged through the wetlands two smaller systems will discharge to smaller streams that form tributaries of the River Pollagh and the Yellow River. The discharge of stormwater to these streams will be via petrol interceptors at two stormwater outfall points OF2 and OF3 (see **Figure 2.2**).

2.3 DESIGN CRITERIA REQUIRED FOR ADEQUATE WATER QUALITY STANDARDS

The required design criteria for the proposed treatment plant upgrade have been calculated based on the required effluent discharge standards required i.e. standards required in order to discharge to the River Pollagh. These standards are based on the relevant legislation (Urban Wastewater Treatment Regulations, 2001) and the waste assimilative capacity (WAC) of the River Pollagh.

The WAC of the River Pollagh can allow for WWTP effluent concentrations of 45.67 mg/l of Biological Oxygen Demand (BOD) and Suspended Solids (SS) while maintaining an increase of less than 1 mg/ BOD and SS in the river. As outlined in **Table 2.1** the proposed discharge standards for the WWTP are higher and significantly more demanding.

The new treatment plant will provide for Nitrogen removal, and will achieve the recommended standard of 15mg/l N.

N

EXISTING SWINFORD ROAD PUMP STATION

SWINFORD ROAD

CONNECT TO EXISTING MANHOLE

BOHOLA ROAD

CONNECT TO EXISTING MANHOLE

AIDEN STREET PUMP HOUSE (EXISTING)

OF3

CLOONKEDAGH ROAD

AIDEN STREET LOWER

PROPOSED CONSTRUCTED WETLANDS

OF1

DISCHARGE INTO THE CONSTRUCTED WETLAND

SEWER DIVERSION WORKS

KILKELLY ROAD

OUTFALL TO EXISTING MANHOLE

CONNECT TO EXISTING MANHOLE

SEWERAGE TREATMENT PLANT

PARK ROAD

PROPOSED PARK ROAD PUMPING STATION

GEORGE'S STREET PUMP HOUSE (EXISTING)

THOMAS STREET

KNOCK ROAD

OF2

STREAM INTERCEPTION WORKS

BALLA ROAD

PROPOSED BOG ROAD PUMPING STATION

Scale Bar 0.00km 0.2km 0.4km 0.6km 0.8km 1.0km

LEGEND

- Watermain
- Rising Main
- Foul Sewers
- Storm Sewers
- River
- Outfall (OF)

NOTES

No.	Date	Dm. / Chk.	Amendment / Issue	App
F01	March '09	M.C. / P.J.G.	Issue	F01
A01	March 09	M.C.S / P.J.G.	Amendement	A01

Client: Mayo County Council

Drawn By	Checked By	Approved By	Date
MC	PJG	SG	March '09

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Project: **Kiltimagh Sewerage Scheme**

Drawing Status	Scale	Sheet Size
Final	1:10,000	A3

Drawing Number: MGW0078/DR0028-01

Rev: F01

Title: Layout of Proposed Scheme

Figure 2.2

The WAC of the river to assimilate Orthophosphate was calculated using a median flow rate of 1.86m^3/s. It was calculated that the effluent needs to be treated to a standard of 1.9 mg/l Orthophosphate before being discharged to the River Pollagh in order to have minimal effect on the river's water quality. The standard specified is 1mg/l Total Phosphorus which is more stringent.

2.4 CONSTRUCTION STAGE

The wetlands and the treatment plant upgrade will be contractor designed and as a result specific construction methods cannot be provided at this stage. However, the Contract Documents require the contractor to propose, implement and monitor a works management plan that will control any discharges of silt or other matter from the construction of the wetlands to the surrounding water courses.

There will be no hazardous materials used in the construction process and precautions will be taken to ensure that there are no spillages or silt discharges which may impact on water quality.

3 EXISTING ENVIRONMENT

3.1 ARCHAEOLOGICAL HERITAGE

In the study area there are five recorded monuments that are detailed in **Table 3.1** and locations of which are shown in **Figure 3.1** that are protected under Section 12 of the National Monuments (Amendment Act), 1994. There are also seven structures identified in the Record of Protected Structures for County Mayo that are located in Kiltimagh that are shown in **Table 3.2**. The inclusion of a structure in the Record of Protected Structures does not preclude appropriate use or development of the structure; however any proposal shall have to consider its impact on the structure and its setting.

Table 3.1 Recorded Monuments within Study Area

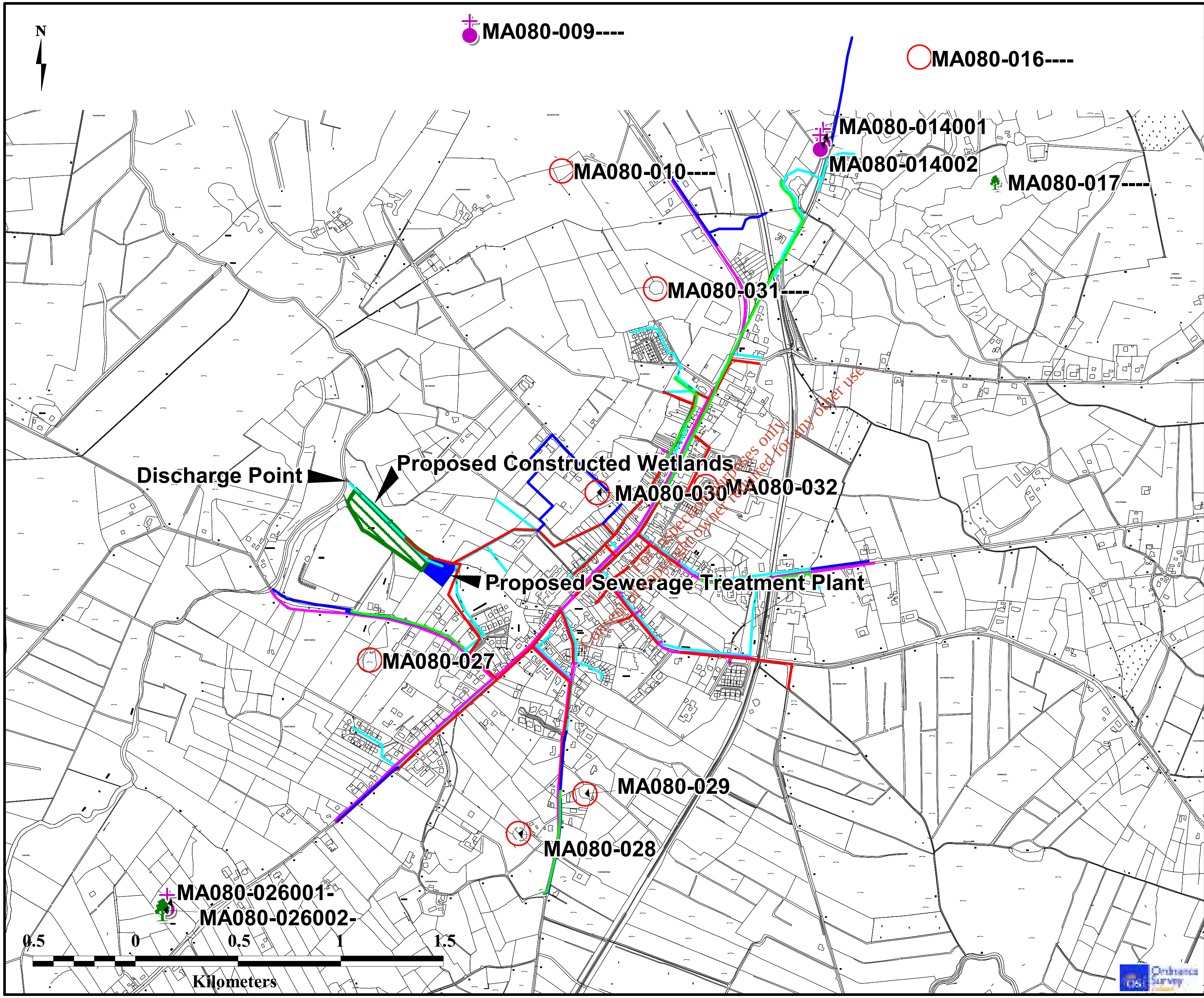
Monument Number	Townland	Classification
MA08027	Gortgarve	Ringfort
MA08028	Cordarragh	Rath
MA08029	Cordarragh	Rath - possible
MA08030	Kiltimagh	Rath
MA08031	Kiltimagh	Ringfort
MA08032	Kiltimagh	Rath
MA08014001 / MA08014002	Lissnamaniagh / Currahoor	Holy Well

Table 3.2 Recorded Protected Structures in Kiltimagh

Reg No.	Name	Townland
137	Allied Irish Bank	Kiltimagh
139	Ballinamore Hse	Ballinamore
136	Bank of Ireland	Kiltimagh
221	Glore Mill	Kiltimagh
138	Kiltimagh Station	Kiltimagh
135	St. Aidan's RCC	Kiltimagh
134	St. Louis Convent	Kiltimagh

Source: List of Structures on the Record of Protected Structures for County Mayo (Mayo County Council)

In order to make an assessment of possible impacts to the Archaeological Heritage as a result of the proposed scheme the checklist set out in Appendix 2 of the DEHLG Circular L8/08 (Water Services Investment and Rural Water Programmes - Protection of Natural Heritage and National Monuments – see **Appendix A**) was completed and is set out below.



Legend

Proposed Sewerage Scheme Legend

- Constructed Wetlands
- Watermain
- Rising Main
- Foul Sewers
- Storm Sewers
- Existing Sewers

Recorded Monuments Legend

- Ritual Site
- Ring Fort

Mayo County Council

Project
Kiltimagh Sewerage Scheme

Title
Location of Recorded Monuments

Figure 3.1

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Table 3.3 Archaeological Checklist in line with Circular L8/08

- Does the scheme extend within or impinge upon the confines of the black line drawn around a monument on the Record of Monuments and Places map?	**No**
- Is the scheme likely to have an adverse impact on the setting and amenity of a monument on the Record of Monuments and Places map?	**No**
- Is the scheme that may be unduly close to archaeological complexes?	**No**
- Does the scheme impact on rivers, lakes, the inter-tidal zone, the foreshore or any underwater area where historic shipwrecks or other underwater archaeological objects e.g. ships' timbers, may be located?	**No**
- Does the scheme require an Environmental Impact Statement?	**No**
- Does the scheme have an adverse impact on the setting and amenity of any national monument in the ownership or guardianship of the Minister for the Environment, Heritage and Local Government or any monument in the ownership or guardianship of a local authority or any national monument that is subject to a preservation order?	**No**

3.2 SURFACE WATER QUALITY

The River Pollagh is a tributary of the River Gweestin which has been designated as a salmonid water in accordance with Council Directive 78/659 EEC (the quality of fresh waters needing protection or improvement in order to support fish life). A section of the Gweestin River is also listed under Protected Areas – Drinking Waters in the Western RBD.

The River Pollagh forms part of the River Moy Special Area of Conservation (SAC) designation and is part of the Western River Basin District (RBD). A monitoring programme for the Western RBD is being developed and a Draft Management Plan was published for public consultation in December 2008.

The Water Maps database which was produced in support of the RBD Draft Management Plans has identified the River Pollagh in terms of its current water quality status, risk category, and objectives and measures to improve water quality status. **Table 3.4** summarises this information.

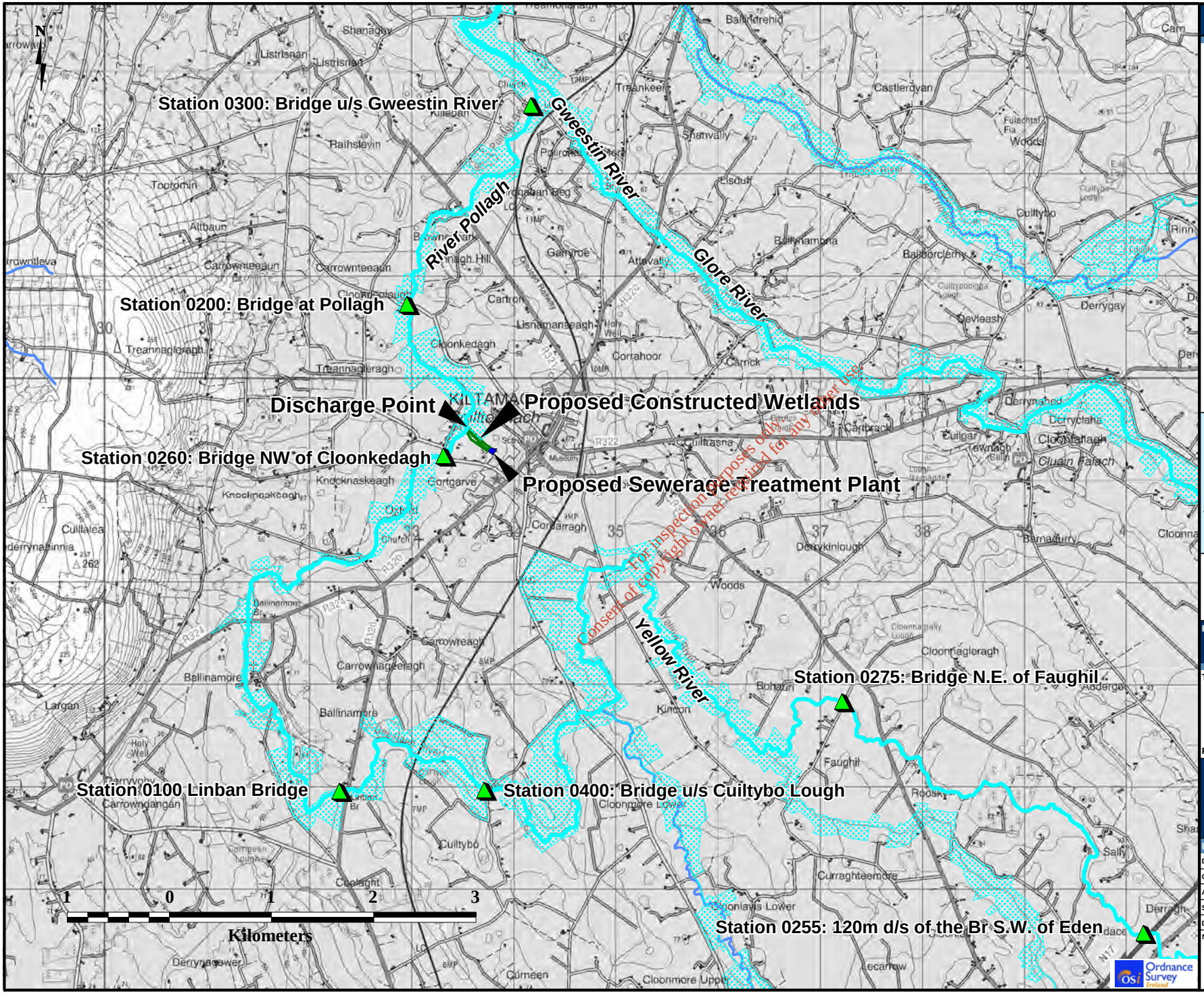
Table 3.4 River Pollagh water quality status as set out in the RBD Water Maps data base.

Element	Rating for the River Pollagh	
Water Quality Status	Q-Value (Biological Index Rating) – Poor Overall Ecological Status - Poor	
Risk Category	Overall: 2b- strongly expected to achieve good status by 2015 1a- At Risk of not achieving good status - Specific to Wastewater Treatment Plants.	
Objectives	OBO - Overall Objective – Restore to Good Status by 2015 OB1 - Protected Area – Restore to Good Status by 2015	
Measures to Achieve Objectives	**Basic/Legislative Measures** - Urban Waste Water Treatment Directive - Water Framework Directive - Integrated Pollution Prevention Control Directive - Nitrates Directive - Plant Protection Products Directive - Sewage Sludge Directive - Environmental Impact Assessment Directive - Major Accidents and Emergencies (Seveso) Directive - Drinking Waters Directive - Habitats Directive	**Specific Measures** - Cost recovery for water use - Promotion of efficient and sustainable water use - Protection of drinking water sources - Control of abstraction and impoundments - Control of point source discharges - Control of diffuse source discharges - Control of priority substances - Control of physical modifications to surface waters - Controls on other activities impacting on water status - Prevention or reduction of the impact of accidental pollution incidents

Overall the river has been identified as having a poor status both in terms of its Q-Value (biological index) and in terms of its general ecological status. Other rivers in the region, including tributaries of the River Pollagh are rated as having moderate to good ecological status. An overall risk rating has also been given to the River and is based on the expectation that the River will achieve good status by the year 2015 taking account of the existing risks identified (diffuse and point source pollution). An overall risk rating of 2b - strongly expected to achieve good status by 2015 - has been afforded the River Pollagh. However it should be noted that the detailed report generated as part of this database identified that in terms of point source pollution, waste water treatment plants did pose a risk

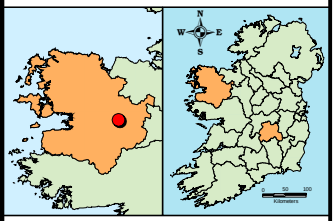
The overall objective therefore for the River is to achieve good status by 2015. Implementation of a range of legislative and other measures have been recommended in order to achieve this. These are detailed in **Table 3.4.**

The stretch of the River Pollagh to which the current treatment plant discharges and to which it is proposed to discharge in the future is monitored by the EPA. The EPA assess river water quality at specific monitoring stations for both biological (Q- rating) and physico-chemical criteria. The locations of relevant EPA Monitoring Stations on the River Pollagh are shown in



Legend

- River
- River Moy SAC
- EPA Monitoring Station
- Constructed Wetlands
- Treatment Plant



Mayo County Council

Project
Kiltimagh Sewerage Scheme

Title

Location of EPA Water Quality Monitoring Stations

Figure 3.2

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Figure 3.2. The proposed discharge point for the constructed wetland is located between **Station No. 260** (upstream of proposed discharge point) and **Station No. 0200** (downstream of proposed discharge point).

The most recent biological monitoring carried out at these stations was in 2005 and a Q-rating of 4 (fairwater quality status) was recorded at Station No. 0200 (downstream of the existing and proposed discharge point).

The most recent available physico-chemical data available from the EPA was 2001-2003 for monitoring Stations 0100 and 0200 on the River Pollagh and Station 0275 on the Yellow River. No non-compliances in relation to the Surface Water Regulations, 1989 or the Quality of Salmonid Waters Regulations, 1988 were recorded.

In the absence of recent water quality monitoring results for the River Pollagh at the proposed discharge point and taking account of the Western RBD Management Plan, the River Pollagh is currently considered to have poor water quality status with aspirations to achieve a good status by 2015. This will be achieved for the River Pollagh through a total of 19 measures which are set out in **Table 3.4.**

3.3 FLOODING

The site proposed for the constructed wetland will be situated in the existing floodplains of the River Pollagh. A search of the Office of Public Works National Flood Hazard Mapping website, www.floodmaps.ie, was performed to obtain information on flooding history in the vicinity of the proposed works. One flood event was recorded within 2.5 km of the proposed site. This flood which occurred on the 4th October 2005 was recorded as occurring in the vicinity of the GAA pitches which are situated directly south of the proposed wetland site, see **Figure 3.3.**

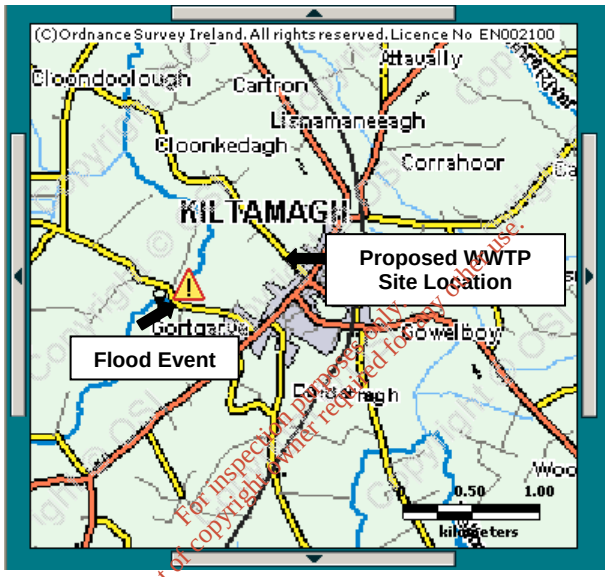


Figure 3.3 Location of Flood Event

Details of this flood event were recorded at a Council meeting with the Area Engineer for the Swinford area on the 10th October 2006 as follows:

"Land flooding in Kiltimagh in vicinity of the GAA pitches from the river Pollagh overflowing its banks, occurred a few years ago and is not a frequent event. Flood ID 4771 "

There have been no other recorded flooding events in the region.

3.4 SOILS, GEOLOGY AND HYDROGEOLOGY

The Water Maps database which were produced in support of the RBD draft management plans have identified the groundwater body underlying Kiltimagh as the Kilkelly Charlestown waterbody. **Table 3.5** summarises its current status, risk category, objectives and measures.

Table 3.5 River Pollagh groundwater status as set out in the RBD Water Maps data base.

Element	Rating for the Kilkelly Charlestown Groundwater Body	
Water Quality Status	Good	
Risk Category	Expected to achieve good status by 2015	
Objectives	Groundwater Quantitative Objectives - Protect Groundwater Chemical Objectives - Protect Overall Objective - Protect	
Measures to Achieve Objectives	**Basic/Legislative Measures** - Urban Waste Water Treatment Directive - Groundwater Directive - Water Framework Directive - Bathing Waters Directive - Integrated Pollution Prevention Control Directive - Nitrates Directive - Plant Protection Products Directive - Sewage Sludge Directive - Environmental Impact Assessment Directive - Major Accidents and Emergencies (Seveso) Directive - Drinking Waters Directive	**Specific Measures** - Cost recovery for water use - Promotion of efficient and sustainable water use - Protection of drinking water sources - Control of abstraction and impoundments - Control of point source discharges - Control of diffuse source discharges - Authorisation of discharges to groundwater - Controls on other activities impacting on water status - Prevention or reduction of the impact of accidental pollution incidents

In the Western RBD Management Plan, the groundwater underlying Kiltimagh is classified as having a good status with expectations of maintaining good status for the year 2015.

Details obtained from the Geological Survey of Ireland (GSI) in relation to more local conditions have determined the soils which the proposed wetlands will overlay as an area of alluvial deposits along the River Pollagh. On review of the historical 6 inch maps, the area around Kiltimagh is described as a mix of Esker drift and Thick drift interspersed with large areas of bog.

The bedrock geology in the vicinity of the proposed wetlands is Bahoge Member, consisting of dark grey, fine-grained, cherty limestone and there are no karst features evident in the area.

The aquifer underlying Kiltimagh town is a Regionally Important Karstified aquifer (Rkc). However to the west and southeast of Kiltimagh town, the aquifer is classed as a Locally

Important Aquifer (LI) which is moderately productive only in local zones. Much of the area is characterised by sandstone till together with cutover bog. On this basis, the groundwater protection scheme for the area devised by the GSI categorises the vulnerability rating of the area as “Probably Moderate”.

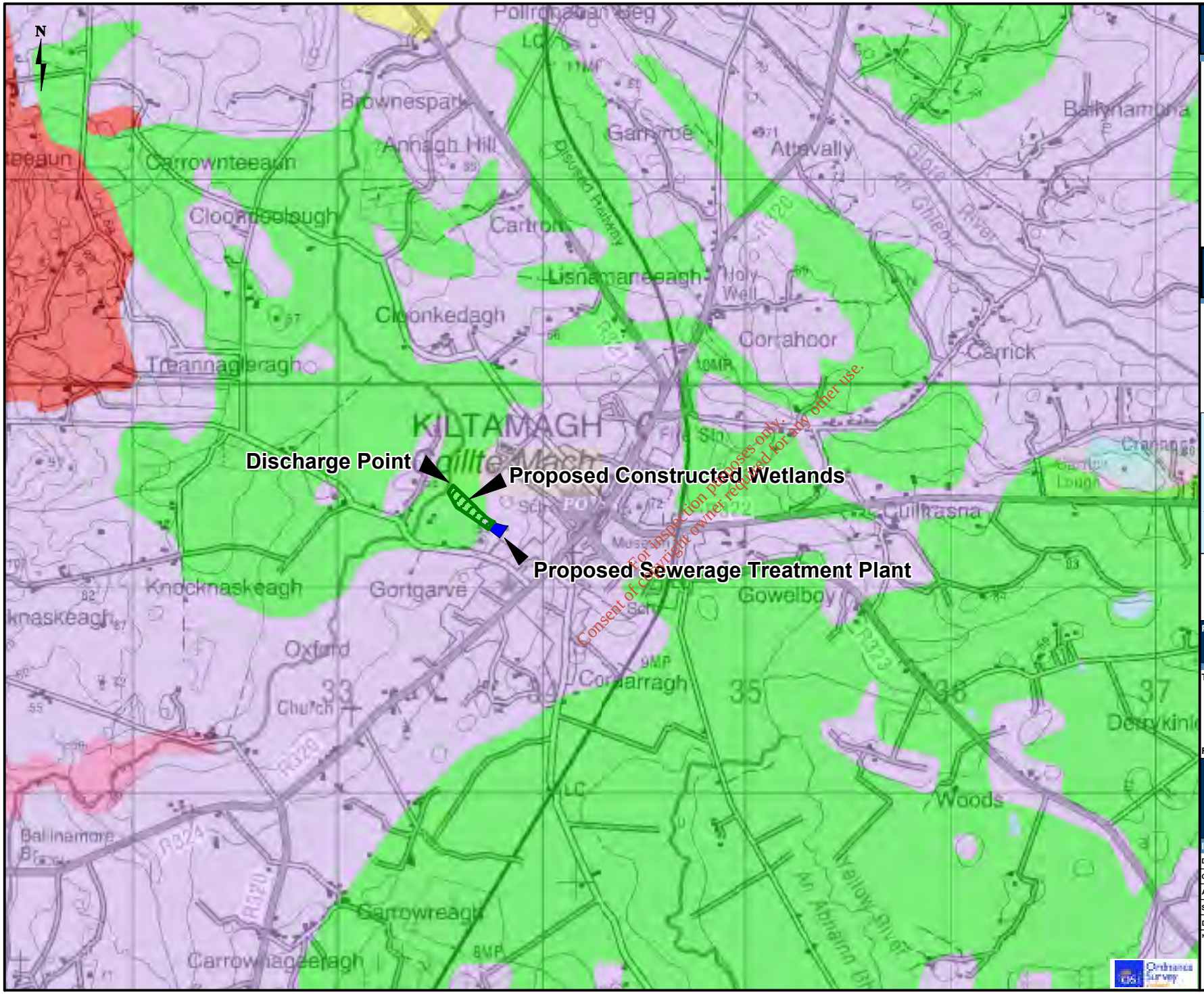
There are some regions in the area however, where the vulnerability is unknown (**Figure 3.4**). This is derived from the vulnerability mapping guidelines (as devised by the GSI) presented in **Table 3.6**. It should be noted that this information is not based on site specific data and is therefore not a definitive groundwater vulnerability map.

The water table at the site has been determined through detailed site investigation and boreholes. Ground water levels at the site were recorded at 0.39m and 2.01m below ground level.

Areas of high water table increase the groundwater vulnerability.

Table 3.6 Vulnerability mapping guidelines

Vulnerability Rating	Hydrogeological Conditions				
	Subsoil Permeability (Type) and Thickness)			Unsaturated Zone	Karst Features
	High permeability (sand/gravel)	Moderate permeability (e.g. sandy subsoil)	Low permeability (e.g. clayey subsoil, clay, peat)	(Sand/gravel aquifers only)	(<30m radius)
Extreme (E)	0 – 3.0m	0 – 3.0m	0 – 3.0m	0 - 3.0m	-
High (H)	>3.0m	3.0 – 10.0m	3.0 – 5.0m	>3.0m	N/A
Moderate (M)	N/A	>10.0m	5.0 – 10.0m	N/A	N/A
Low (L)	N/A	N/A	>10.0m	N/A	N/A

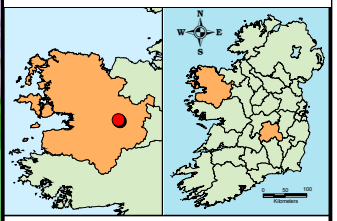


Vulnerability Legend

- Unknown
- Probably Moderate
- Probably Extreme
- Extreme

Proposed Sewerage Scheme Legend

- Constructed Wetlands
- Treatment Plant



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Title
Groundwater Vulnerability Map

Figure 3.4

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3.5 NATURE CONSERVATION DESIGNATION SITES

The site synopses produced by NPWS are a source of information used when investigating important habitats or species likely to be found within areas that have been officially designated because of their conservation importance.

The River Moy Special Area of Conservation (SAC) (Site Code: 002298) is a Natura 2000 site[2] and is designated under the Habitats Directive 92/43/EEC. It is a very important freshwater system and the site comprises almost the entire freshwater element of the River Moy and associated tributaries including Lough Conn and Cullin. The system drains a catchment area of 805 km^2.

The National Parks and Wildlife Service (NPWS) site synopsis for the site mentions a number of habitats (including alluvial wet woodlands and raised bog, and old oak woodlands, degraded raised bog and Rhyncosporion) which are also listed in Annex 1 of the E.U. Habitats Directive. Two of these habitats, alluvial wet woodlands and raised bog, are also listed as priority habitats. A number of plant species of conservation concern are also noted including: Narrow-leaved Helleborine (*Cephalanthera longifolia*), Heath Cudweed (*Omalotheca sylvatica*), Great Burnet (*Sanguisorba officinalis*), and Irish Lady's-tresses (*Spiranthes romanzoffiana*), all of which are protected under the Flora Protection Order, 1999. Two Red Data Book plant species also occur within the site - Intermediate Wintergreen (*Pyrola media*) and Lesser Twayblade (*Listera cordata*).

Important fish species of note within the site include Atlantic Salmon (*Salmo salar*), Arctic Char (*Salvelinus alpinus*), Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*) and White-clawed Crayfish (*Austropotamobius pallipes*). Important mammal species listed within the site include: Otter (*Lutra lutra*), Irish Hare (*Lepus timidus hibernicus*), Pine Marten (*Martes martes*), Badger (*Meles meles*) and Daubenton's Bat (*Myotis daubentonii*).

Agriculture, particularly grazing is the main land use along the Moy. The NPWS site synopsis note that the spreading of slurry and fertilisers poses a threat to the water quality of the River and the presence of forestry poses a threat through sedimentation and acidification.

The NPWS also makes mention of bird species of conservation importance (either because of their rarity, or because the concentrations of particular species found within the site are of

[2] The Natura 2000 Network is a network of important ecological sites across the European Union. It is comprised of Special Protection Areas (SPAs) and Special Areas of Conservations (SACs).

importance) that are mentioned in the synopsis for the SAC. These species are found in Loughs Conn and Cullin which form part of the River Moy SAC but are also designated as a Special Protection Area (SPA – Site Code SPA004054) and proposed Natural Heritage Area (pNHA – Site Code pNHA000519). These species include the following: Wintering Greenland White fronted Goose (*Anser albifrons flavirostris*), Whooper Swan (*Cygnus cygnus*), Pochard (*Aythya farina*), Goldeneye (*Bucephala clangula*), Common Scoter (*Melanitta nigra*), Tufted Duck (*Aythya fuligula*), Goldeneye (*Bucephala clangula*), Coot (*Fulica atra*), Wigeon (*Anas penelope*), Mallard (*Anas platyrhynchos*), Lapwing (*Vanellus vanellus*), Curlew (*Numenius arquata*) and Golden Plover (*Pluvialis apricaria*). Loughs Conn and Cullin are two of the most important breeding sites for Common Scoter in Ireland.

The NPWS site synopsis for the River Moy SAC is included in full as **Appendix B** to this report. **Figure 3.5** shows the proximity of the site to the proposed wetlands and treatment plant. The wetlands site is directly adjacent to but does not encroach upon the River Moy SAC.

The primary objective of the SAC is to maintain or enhance the favourable conservation status of the habitats and species for which the SAC has been designated.

3.6 QUALIFYING FEATURES OF THE RIVER MOY SAC

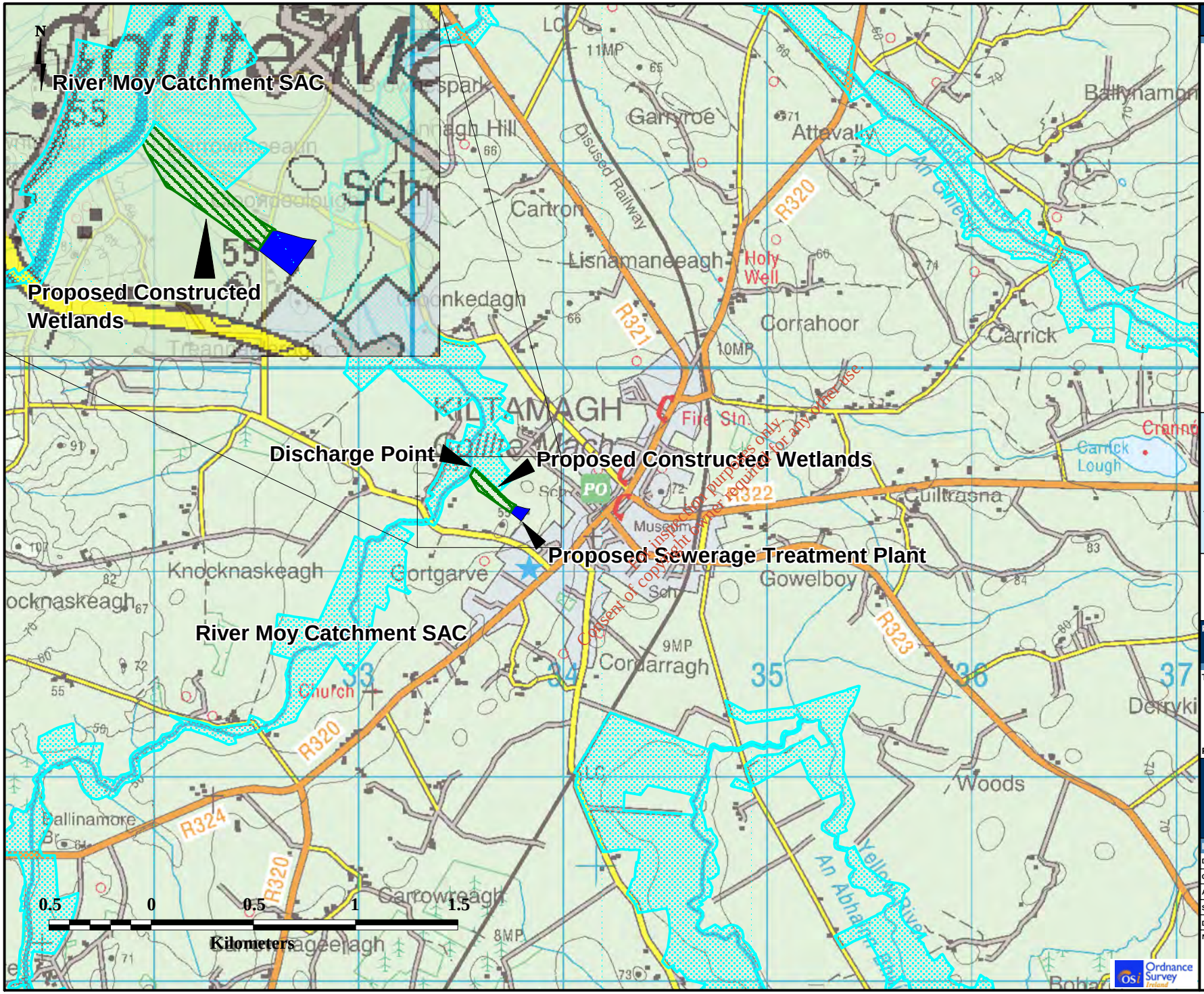
The Qualifying Features of a designated site include the Habitats listed in Annex I and the Species listed in Annex II of the Habitats Directive for which an SAC must be designated by member states. The qualifying features of the River Moy SAC are listed in **Table 3.7** and **Table 3.8.**

Table 3.7 Qualifying Habitats of the River Moy SAC (Site Code 002298)

Habitat Type (Annex I of the Habitats Directive)	Habitat Code
Active Raised Bog	7110
Degraded raised bogs still capable of natural regeneration	7120
Depressions on peat substrates of the Rhynchosporion	7150
Old sessile oak woods with Ilex and Blechnum in British Isles	91A0
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae, Salicion albae)*	91E0

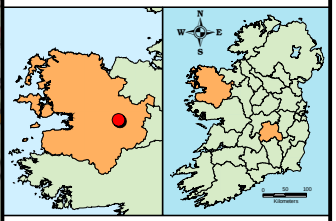
Table 3.8 Qualifying Species of the River Moy SAC (Site Code 002298)

Species Type	Species Code
Atlantic Salmon (*Salmo salar)*	1106
Sea Lamprey (*Petromyzon marinus*)	1095
Brook Lamprey (*Lampetra planeri*)	1096
Otter (*Lutra lutra*)	1355
White-clawed Crayfish (*Austropotamobius pallipes*)	1092



Legend

- River Moy Special Area of Conservation (SAC)
- Constructed Wetlands
- Treatment Plant



Mayo County Council

Project
Kiltimagh Sewerage Scheme

Title
Proximity of the Proposed Kiltimagh Sewerage Scheme to the River Moy SAC

Figure 3.5

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3.7 THREATS AND IMPACTS TO QUALIFYING FEATURES

Table 3.9 and **Table 3.10** set out the main threats and impacts to the qualifying features of the River Moy SAC.

Table 3.9 Threats and impacts on Annex I Habitats of the River Moy SAC

Habitat Type (Annex I of the Habitats Directive)	Main Threats and Impacts
Active Raised Bog	Peat Cutting, Grazing, Burning.
Degraded raised bogs still capable of natural regeneration	Peat cutting; drainage and burning; afforestation; invasive species; grazing; dumping; fertilisation; restructuring agricultural land; communication routes; cultivation; mowing/cutting; modification of inland water structures; sand and gravel extraction.
Depressions on peat substrates of the Rhynchosporion	Maintaining the extent, species richness and biodiversity of the entire site.
Old sessile oak woods with Ilex and Blechnum in British Isles	Internal effects include inappropriate grazing levels and invasive species, whereas external threats include clearance for agriculture or felling for timber
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae, Salicion albae)*	Internal effects include inappropriate grazing levels and invasive species, whereas external threats include clearance for agriculture or felling for timber

Table 3.10 Threats and impacts on Annex II Species of the River Moy SAC

Species Type	Main Threats and Impacts
Atlantic Salmon (*Salmo salar)*	Fish passages, water pollution (including discharges), commercial fishing, invasive species, forestry and farming.
Sea Lamprey (*Petromyzon marinus*)	Fish passages, water pollution (including discharges), commercial fishing, invasive species, forestry and farming.
Brook Lamprey (*Lampetra planeri*)	Fish passages, water pollution (including discharges), commercial fishing, invasive species, forestry and farming.
Otter (*Lutra lutra*)	Use of pesticides, fertilization, hunting, trapping, poisoning, water pollution, infilling of ditches, dykes, ponds, pools, marshes or pits, management of aquatic and bank vegetation for drainage purposes, removal of sediments, canalization or modifying structures of inland water course.
White-clawed Crayfish (*Austropotamobius pallipes*)	Water pollution, invasive species, forestry and farming.

3.8 CONSERVATION OBJECTIVES OF THE SITE

The integrity of a Natura 2000 site (referred to in Article 6.3 of the EU Habitats Directive) is determined based on the conservation status of the qualifying features of the SAC as set out above. Once each site has been designated, it is required that a management plan should be put in place for the site which sets out the objectives for the site in order to maintain the favourable conservation status of these qualifying features and prevent in as far as possible threats and impacts on these habitats and species.

In the absence of a NPWS management plan for the site to date, the following general conservation objectives are set out for the River Moy SAC:

Objective 1: To maintain and where possible enhance the Annex I habitats for which the SAC has been designated under the Habitats Directive, namely: Alluvial forests, Active Raised Bog, Degraded raised bogs, Depressions on peat substrates of the Rhynchosporion and Old sessile oak woods.

Objective 2: To maintain the Annex II species for which the SAC has been designated under the Habitats Directive, namely: the Atlantic Salmon, the Sea Lamprey, the Brook Lamprey, the Otter and the White-clawed Crayfish.

Objective 3: To initiate and maintain effective liaison between NPWS, relevant authorities, landowners and any other interested parties regarding conservation of the site.

Strategies to Achieve Objectives

- Maintain and monitor a favourable water quality status,
- Regulate and monitor where possible the activities as set out in **Tables 3.9 and 3.10,**
- Initiate and maintain communication and consultation between all relevant stakeholders of the River Moy SAC.

4 OTHER PLANS AND PROJECTS IN THE AREA

As part of the screening for an appropriate assessment, in addition to the proposed sewerage scheme which is part of the Water Services Investment and Rural Water Programmes, other relevant projects and plans in the region must also be considered at this stage. This step aims to identify at this early stage any possible significant in-combination or cumulative effects/impacts of the proposed development with other such plans and projects on the Natura 2000 site. **Table 4.1** summarises these Plans and Projects.

Table 4.1 Other plans and projects

PLANS AND PROJECTS	KEY POLICIES/ISSUES/OBJECTIVES DIRECTLY RELATED TO THE RIVER MOY SAC
LAND USE AND SPATIAL PLANS	
Mayo County Development Plan 2008-2014	**Key Issue** Protection and improvement of water quality in compliance with the EU Water Framework Directive (WFD) and support of the Western River Basin District Project (WRBD). **Main Aims** Promote and support economic development and the provision of industry and enterprise in Westport and the Key Towns **Objectives** **O/TI-WS 1** It is an objective of the Council to carry out the water and sewerage schemes identified in Appendix II: Tables 2.1 & 2.2. **O/ TI-WS 3** It is an objective of the Council to continue to implement the *County Mayo Strategic Rural Water Plan.* **O/ EH-WQ 1** It is an objective of the Council to prepare a Ground Water Protection Plan for the County in conjunction with the Geological Survey of Ireland. **Policies** **P/EH-NH 1** It is the policy of the Council to protect, enhance and conserve: a) Candidate Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas and proposed National Heritage Areas.... b) Natural habitats and plant and animal species identified under the Habitats Directive, Birds Directive, Wildlife Act and the Flora Protection Order..... **P/EH- NH 4** It is a policy of the Council to implement *Article 6(3) of the EU Habitats Directive,* and to subject any plan or project likely to impact Natura 2000 or European Sites (SACs, SPAs), whether directly (in situ), indirectly (ex-situ) or in combination with other plans or projects, to an appropriate assessment in order to inform decision making.
Kiltimagh Local Area Plan (LAP)	The LAP has not yet been published. However it is anticipated that the aims, objectives and policies set out in the LAP will reflect in greater detail those of the County Development Plan. Issues discussed at Council meetings included The Natural Environment and Water, Sewerage and Drainage.

CONSERVATION AND MANAGEMENT PLANS FOR THE RIVER MOY SAC	
NPWS Conservation Management Plan	A conservation Management Plan for the River Moy SAC has not yet been published by the NPWS.
Western RBD Management Plan	The draft Western RBD Management Plan issued in December, 2008 sets out a number of objectives and measures for all water bodies in the western catchment. The River Pollagh objectives and measures are as follows: **Objectives**: Restore the River Pollagh to Good Status by 2015 **Measures**: Implement 8 basic legislative requirements and 11 specific measures (detailed in Table 3.1 of this report).
OTHER WATER SERVICES STRATEGIC PLANS	
County Mayo Strategic Rural Water Plan	Proposal to address the poor water quality problems in the privately sourced group Water schemes through the construction of a significant number of treatment plants for privately sourced group water schemes
POLLUTION REDUCTION PLANS	
IPPC Programme	There are no IPPC Licence holders discharging to the River Pollagh
Local Authority Discharge	Discharge Licence Application for Kiltimagh (Ref D0217-01) submitted to EPA on 26th February 2009. Outcome and implications yet to be decided.
Groundwater Pollution Reduction Programmes	A Ground Water Protection Plan for the County in conjunction with the Geological Survey of Ireland has not yet been prepared.
Surface Water Pollution Reduction Programmes	See Western RBD Draft Management Plan.
MAJOR ACCIDENT EMERGENCY PLANS	
Seveso II Sites	There are no Seveso II Sites in the vicinity of the proposed Kiltimagh Sewerage Scheme.
FOREST MANAGEMENT PLANS	
Indicative Forestry Statement	Department of Agriculture, Fisheries and Food, Dec 2008 Sets out Environmental Protection and Consultation Process when Proposing Afforestation Schemes.
Draft Indicative Forest Strategy for Mayo- Mayo County Council 2003	Strategic Actions Relating to Water Quality - Ensure that all forestry development is carried out in accordance with the Forestry and Water Quality Guidelines to protect domestic water supplies and to protect salmonid fisheries. - Support and encourage the planting, restructuring and provision of open space in riparian zones in new and existing forests.
FISHERIES PLANS	
The North Western Regional Fisheries Board- Strategic Plan 2007-2011	**Water Quality Strategies** - Work with all relevant agencies and interest groups to identify sources of nutrients impacting on the main lakes, - Use the catchment management process to maximum effect to redress eutrophication and other water quality problems, - Disseminate information to the public in regard to impacts on water quality, - Seek to influence public opinion on the issue of water quality, - Monitor all proposals for development which may impinge on water quality,

	- Use the powers that are available to the Board to prosecute offenders where necessary, - Endeavour to influence Government and EU policies in regard to protection of water quality and activities which impact on it, and - Monitor water quality trends on an on-going basis on selected rivers and streams.
OTHER PLANS AND PROJECTS	
Flood Risk Management Plans	Not yet available
Local Planning Applications	A search of the Mayo County Council Planning website did not show any significant plans or projects currently awaiting planning permission.

5 APPROPRIATE ASSESSMENT SCREENING

An Appropriate Assessment is comprised of four stages as outlined in the European Commission Guidance document (2001). **Figure 5.1** sets out the main steps in completing an appropriate assessment and the area shaded in grey relates to the step completed as part of this report.

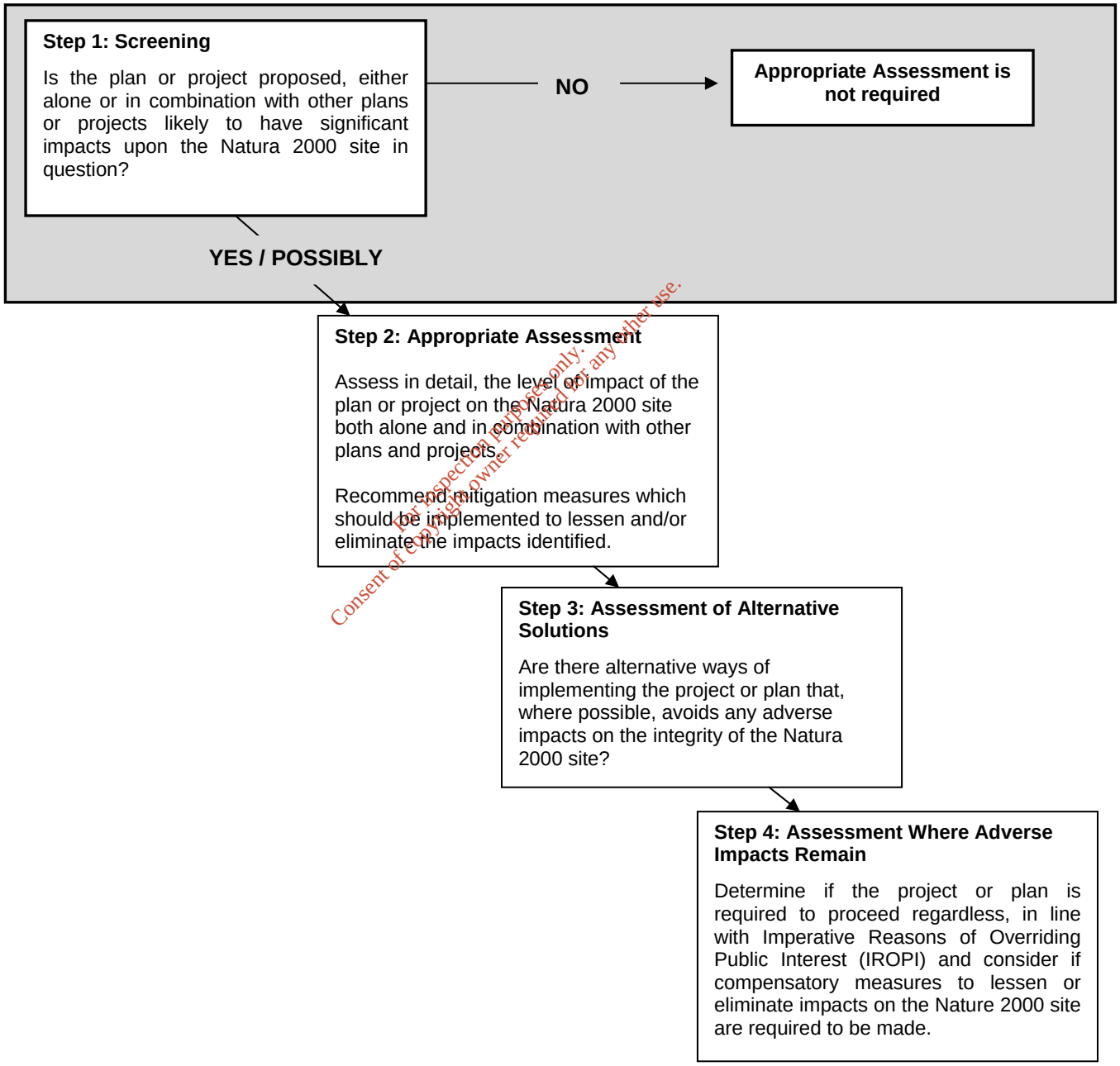


Figure 5.1 Outline Steps for an Appropriate Assessment

Having established details of the proposed project and details of the Natura 2000 site in question an assessment or screening for possible impacts can be generated (**Step 1 of Figure 5.1**). This step will determine the requirement for an Appropriate Assessment. In completing this screening three separate screening methodologies have been applied to the scenario in order to determine the requirement for an Appropriate Assessment.

The following guidance was used in Step 1 of the Assessment;

- Department of Environment Heritage and Local Government Circular letter L8/08. Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments. 2nd September 2008,

- Assessment of plans and projects significantly affecting Natura 2000 sites- Methodology guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, (European Commission, 2001), and

- Mayo County Development Plan 2008-2014.

5.1 SCREENING PROTOCOL IN LINE WITH DEHLG CIRCULAR LETTER L8/08

Below is a flow diagram for screening water services infrastructure projects. This diagram is taken from Appendix I of the Water Services Schemes, Natural Heritage Checklist (Circular L8/08, DEHLG).

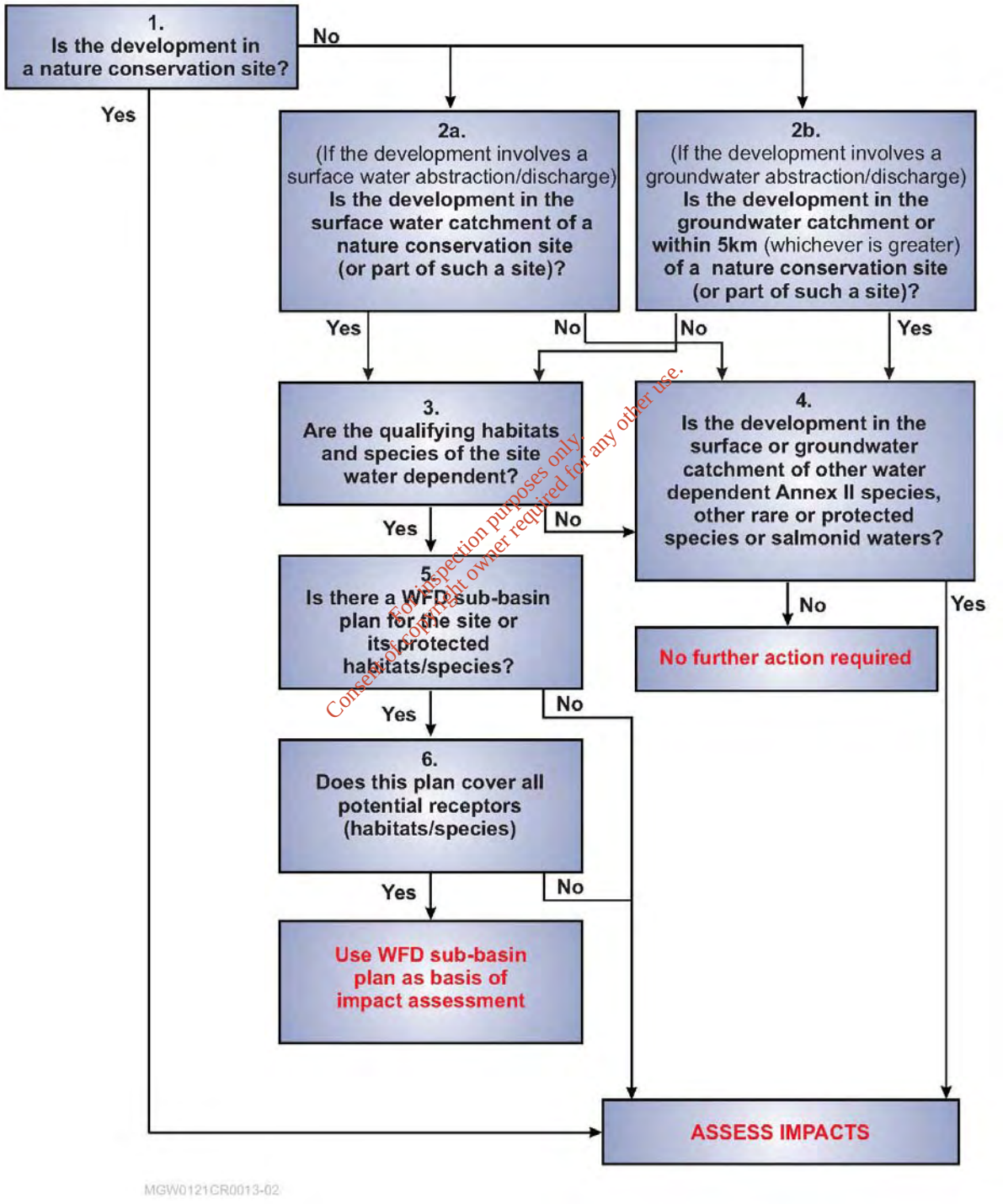


Figure 5.2 Flow Diagram for Screening Water Services Infrastructure Projects: Kiltimagh Sewerage Scheme.

The answers to the questions in the flow chart are as follows;

Question 1 - Answer = No: The proposed Kiltimagh Waste Water Treatment and Wetlands will not be constructed in the lands designated under the River Moy SAC.

Question 2a - Answer = Yes: Storm water and treated effluent will be discharged to the River Moy SAC through an existing outfall.

Question 3 - Answer = Yes: The Qualifying Habitats and Species of the River Moy SAC which are water dependant as follows; Habitats: Alluvial forests, Species: Atlantic Salmon, Sea Lamprey, Brook Lamprey, Otter and White-clawed Crayfish.

Question 5 - Answer = No: There is currently no Water Framework Directive (WFD) sub-basin plan for the River Moy SAC or for any of its qualifying habitats or species.

Overall Conclusion: Assess Impacts

The conclusion of the screening protocol from Question 1 is to **"ASSESS IMPACTS"**. Therefore, this scoping report will be referred to the DAU for consultation.

5.2 SCREENING MATRIX FOR APPROPRIATE ASSESSMENT IN LINE WITH EU COMMISSION GUIDANCE

Having established the extent of the proposed project and the details of the Natura 2000, River Moy SAC, a screening assessment for possible impacts can be generated. This section follows the format of the Screening Matrix provided in Annex 2 of the following document;

"Assessment of plans and projects significantly affecting Natura 2000 sites- Methodology guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission, 2001".

The findings of the screening matrix are summarised in **Table 5.1** below.

Table 5.1 Stage 1 - Screening Matrix for Kiltimagh Sewerage Scheme

Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.
- Proximity of the proposed constructed wetland to the River Moy SAC. - Potential run-off to the Pollagh River (part of River Moy SAC) from the construction phase of the wetlands (increased sediment, alteration of local hydrology) giving potential to alter existing water quality. - Potential for flood waters to discharge un-attenuated stormwater and treated effluent to the Pollagh River from the constructed wetlands at the operational stage. - No other projects or plans identified in the region will be likely to cause cumulative impacts.
Describe any likely direct, indirect or secondary impacts of the project on the Natura 2000 site by virtue of:
- **Size and Scale** Given the overall size of the River Moy SAC (catchment area of approximately 805 km^2) relative to the size of the proposed upgrade works, including the constructed wetland, the proposed development will not have a significant impact (direct, indirect or secondary in nature) on the site in this regard. - **Land-Take** The proposed upgrade works is not proposed within the River Moy SAC and as a result will not have a significant impact (direct, indirect or secondary in nature) on the site in this regard. - **Distance from Natura 2000 site or key features of the site** The upgrade works, specifically the proposed wetlands will border the River Moy SAC and during construction there will be potential for temporary run-off to the Pollagh River (part of River Moy SAC) altering existing water quality resulting in possible temporary direct and indirect significant impacts on the site.

- **Resource Requirements**
  There will be no requirement for water or any other resources to be taken from the River Moy SAC during construction, operation or maintenance of the upgraded works. As a result there will not be a significant impact (direct, indirect or secondary in nature) on the site in this regard.

- **Emissions**
  During construction of the wetlands there is a possibility that run-off will discharge to the River Pollagh. This could alter the existing water quality resulting in possible temporary direct and indirect significant impacts on the site.

  During the operational phase there will be discharge of attenuated storm water and treated effluent to the River Pollagh. It is anticipated that the discharge from the constructed wetland will be of a quality that will not impact negatively on the current water quality of the River Pollagh and will when compared to the existing situation have a positive direct impact on the River Moy SAC.

- **Excavation Requirements**
  There will be a requirement to excavate material for the construction of the wetlands and the upgrade of the treatment plant and sewer network. However, the excavation of material will be kept to a minimum, particularly in the construction of the wetland. The excavation of material during construction will not have a significant impact (direct, indirect or secondary in nature) on the site in this regard.

- **Transportation Requirements**
  There will be no requirement for transport during construction, operation and maintenance to impinge on the River Moy SAC **as all works will take place outside the boundary of the site.** As a result not have a significant impact (direct, indirect or secondary in nature) on the site in this regard.

- **Duration of construction, operation, decommissioning**
  See relevant sections above.

Describe any likely changes to the site arising as a result of the following:

- **Reduction of Habitat**
  There will be no changes in this respect.

- **Disturbance to Key Species**
  Not all of the key species (Annex II) which qualify the River Moy SAC occur along this stretch of the River Pollagh. However, given that all of the Annex II species are water dependant, any uncontrolled discharges or release of sediments during construction of the wetlands could temporarily affect these habitats and species where present. This would result in direct, indirect and secondary significant impacts on the River Moy SAC.

  The operational stage will improve the quality of the water in the River Pollagh (treatment and discharge of effluent and attenuated stormwater) resulting in long-term positive direct, indirect and secondary significant impacts for key species.

- **Habitat or Species Fragmentation**
  There will be no changes in this respect.

- **Reduction in species density**
  There will be no changes in this respect

- **Changes in key indicators of conservation value**
  The water quality of the River Pollagh can be considered a key indicator of conservation value. Discharges or release of sediments during construction of the wetlands could temporarily cause direct, indirect and secondary negative impacts on the quality of water in this River.

  In the long-term the proposed upgrade will improve the water quality of the River Pollagh and as a result will have a positive significant impact on the River Moy SAC.

- **Climate change**
  There will be no changes in this respect.

Describe any likely impacts on the Natura 2000 site as a whole in terms of:

- **Interference with key relationships that define the structure and function of the site**

  It is not considered likely that there will be any long term impacts on the key relationships that define the structure or function of the site.

  The chief risk is a temporary reduction in water quality or an alteration in the flow regime in the River Pollagh during construction and commissioning of the wetlands.

Provide Indicators of significance as a result of the identification of effects set out above in terms of:

- **Loss**
  No loss is expected.

- **Fragmentation**
  No fragmentation is expected.

- **Disruption**
  No disruption is expected.

- **Disturbance**
  No disturbance is expected.

- **Change to key elements of the site**
  The Q-biotic index level in the River Pollagh will be used as an indicator of significance to monitor water quality.

Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.

The water quality of the River Pollagh could temporarily deteriorate during the construction of the wetlands if specific mitigation measures are not implemented. **This could result in a temporary negative impact on the River Moy SAC.**

In the long-term, once the proposed upgrade is commissioned, the discharge of storm water and treated effluent is expected to be of a high quality and improve on the current quality of water in this stretch of the River Pollagh, **creating a significant positive impact on the River Moy SAC.**

The other plans and projects identified for the purpose of this screening are detailed in Section 5. It is not anticipated that any of these projects will, in-combination with the proposed Kiltimagh Sewerage Scheme have a significant negative impact on the River Moy SAC.

As a temporary negative impact on the River Moy SAC resulting from the construction of the wetlands is possible, an Appropriate Assessment to Step 2 is required in line with Article 6(3) of the European Habitats Directive (92/43/EEC). Refer to Section 6 for the proposed scope of an Appropriate Assessment.

5.3 SCREENING IN LINE WITH MAYO COUNTY DEVELOPMENT PLAN 2008-2014

The Mayo County Development Plan 2008-2014 states the following under **Development Management Guideline 4.14.1 - Designated Ecological Sites**:

'Planning applications where part or all of the subject site lies within a zone that extends from the boundary of any designated (or candidate) ecological site to the next field boundary or to a distance of 50 metres, whichever is closer, must be accompanied by an eco-hydrological assessment. This must comply with Section 18 of the European Communities (Natural Habitats) Regulations 1997 and identify and evaluate the direct and indirect effects, which the development would be likely to have upon the designated site, ecological connectivity and drainage. The eco-hydrological assessment will be forwarded to the National Parks and Wildlife Service for their comments prior to the making of a decision by the Planning Authority.'

If this guideline was applied to the proposed Kiltimagh Sewerage Scheme an eco-hydrological assessment would be required. The guideline also specifies that the assessment must comply with Section 18 of the European Communities (Natural Habitats) Regulations 1997. This Section of the Regulations makes the requirement for the following, "…….*an appropriate assessment of the implications for the site in view of the sites conservation objectives*…."

To meet this objective an appropriate assessment incorporating an eco-hydrological assessment will be required in order to assess the implications of the proposed Kiltimagh Sewerage Scheme on the River Moy SAC.

6 PROPOSED SCOPE OF AN APPROPRIATE ASSESSMENT

Due to the overall extent of the River Moy SAC and the relatively small area within this designation that constitutes the River Pollagh there is a requirement to **assess further the qualifying features of the designation at a local level** (i.e. determine the presence or absence of qualifying habitats and species).

Detailed mitigation measures at the construction stage will be required to be presented (e.g. methods of proposed work, on site pollution control measures and proposed monitoring during construction). Measures proposed for the management of the wetlands at the operational stage should also be detailed and should include proposed monitoring of the water quality of the River Pollagh.

In addition to this, an **eco-hydrological assessment** should form part of this assessment in order to fully comply with Mayo County Development Plan 2008-2014 (Development Management Guideline 4.14.1).

Therefore, the Appropriate Assessment will include the following elements:

1) Baseline Assessment of Natura 2000 Site

- The conservation objectives for the River Moy SAC will be examined and it will be outlined how the favourable conservation status of Annex I and Annex II habitats and species will be maintained.
- Habitats within the study area will be described and evaluated by means of an ecological field survey. The habitats on site will be mapped and classified in accordance with The Heritage Councils '*A Guide to Habitats in Ireland*' (Fossitt, 2000). This classification is a standard scheme for identifying, describing and classifying wildlife habitats in Ireland. The classification is hierarchical and operates at three levels, outlining the correlation between its habitat categories and the phytosociological units (plant communities) of botanical classifications. Consideration for habitats listed in Annex I of the Habitats Directive (92/43/EEC) will also be described. The ecological interest of the site will be assessed based on whether it is of *international, national, regional or local importance* as this has a direct bearing on its magnitude and significance. All impacts will be related to species or habitats protected by statute or Biodiversity Action Plans, priority species or habitats that are considered at national level.

- Particular attention will be given to the possibility of the presence of habitats which are listed as priority habitats on Annex 1 of the EU Habitats Directive. Two priority habitats are mentioned in the site synopsis of the River Moy SAC – alluvial wet woodlands and raised bog.
- Flora in the study area will be assessed, including any rare or protected plants. Rare species of plants mentioned in the site synopsis for the River Moy SAC include Narrow-leaved Helleborine (*Cephalanthera longifolia*), Intermediate Wintergreen (*Pyrola media*), Lesser Twayblade (*Listera cordata*), Heath Cudweed (*Omalotheca sylvatica*), Great Burnet (*Sanguisorba officinalis*) and Irish Lady's-tresses (*Spiranthes romanzoffiana*).
- An assessment of species that use the River and its surrounding areas that are part of the SAC, including any rare or annexed species (Habitats Directive) especially Salmon (*Salmo salar*); Brook Lamprey (*Lampetra planeri*), Sea Lamprey (*Petromyzon marinus*), White-clawed Crayfish (*Austropotamobius pallipes*), Arctic Charr (*Salvelinus alpinus*) and Otter (*Lutra lutra*) will be undertaken.

2) Assessment of Other Elements that interact with Ecology

- The hydrological regime will be assessed particularly in relation to flows in the river. Water quality data available for the River Pollagh will be reviewed and assessed against water quality requirements for the White-clawed Crayfish (*Austropotamobius pallipes*) and other rare and annexed species including Salmon (*Salmo salar*) and Brook Lamprey (*Lampetra planeri*).
- A geological and hydrogeological assessment of the study area will be undertaken.

3) Assessment of Archaeological and Architectural Heritage

- An assessment on the impact of archaeological and architectural heritage in the study area will be carried out.

4) Assessment of the Proposed Scheme

- A description of the proposed sewerage scheme will be prepared with details proposed for construction and operational stages.
- Improvements proposed to the existing sewerage scheme.
- Consideration of alternatives.
- The adequacy of the constructed wetland for the attenuation and polishing of surface water runoff and treated sewage effluent.
- The impacts of construction and potential seasonal issues.

5) Assessment of Impacts on the Natura 2000 Site

- The proposed development will be assessed on its own and in combination with other plans and projects in the area, including the wider upstream catchment of the River Pollagh and the River Moy so as to identify the potential cumulative impacts on the River Moy SAC. Both construction and operations stages will be assessed for each project identified.

6) Mitigation & Control Measures

- Detailed mitigation measures to avoid, reduce or compensate for negative impacts on the environment will be identified and agreed with statutory bodies.

7 SUMMARY

Table 7.1 Summary of screening for an appropriate assessment under Article 6(3) of the European Habitats Directive for Kiltimagh Sewerage Scheme.

Project Details	Existing Environment	River Moy SAC	Other Plans & Projects	Screening in line with DEHLG Circular letter L8/08.	Screening in line with Methodology Guidance, EU Commission	Screening in line with Mayo County Development Plan 2008-2014	Conclusion
- Upgrading of the existing combined sewer network to separate foul and storm water management systems - Extension of the networks - Provision for up to 5 no. new pump stations, - Development of a constructed wetland - Installation of a modern wastewater treatment facility	**Surface Water- River Pollagh** - Poor status but strongly expected to achieve good status by 2015 provided 19 measures are put in place (legislative and management) - Most recent water Quality Monitoring 2003-2004 Biological: Q4 -Fair Water Quality Status Chemical: no non-compliances **Groundwater** - Good status with expectations of maintaining good status for 2015. - The aquifer is a Regionally Important Karstified aquifer (Rkc). But in the locality of the proposed project it is classed as a Locally Important Aquifer (LI). - Vulnerability rating of the area is "Probably Moderate". **Flooding** "Land flooding in Kiltimagh in vicinity of the GAA pitches from the River Pollagh overflowing its banks, occurred a few years ago and is not a frequent event. Flood ID 4771" October 2005.	**Qualifying Habitats** - Active raised bog - Degraded raised bogs still capable of natural regeneration - Depressions on peat substrates of the Rhynchosporion - Old sessile oak woods with Ilex and Blechnum in British Isles - Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* **Qualifying Species** - Atlantic Salmon (*Salmo salar)* - Sea Lamprey (*Petromyzon marinus*) - Brook Lamprey (*Lampetra planeri*) - Otter (*Lutra lutra*) - White-clawed Crayfish (*Austropotamobius pallipes*) **Site Objectives:** To maintain and where possible enhance Qualifying Habitats and Species	- Mayo County Development Plan 2008-2014 - Kiltimagh Local Area Plan (LAP) - NPWS Conservation Management Plan - Western RBD Management Plan - County Mayo Strategic Rural Water Plan - IPPC Programme - Local Authority Discharge - Groundwater Pollution Reduction Programmes - Surface Water Pollution Reduction Programmes - Seveso II Sites - Indicative Forestry Statement - Draft Indicative Forest Strategy for Mayo- Mayo County Council 2003 - Forthcoming Flood Risk Management Plans - Local Planning Applications	An Appropriate Assessment is required in line with this methodology. Reason: The qualifying species and habitats are water dependant and there is currently no WFD sub-basin plan for the site or its protected habitats/species	An appropriate Assessment is required in line with this methodology. Reason: The water quality of the River Pollagh could temporarily deteriorate during the construction of the wetlands if specific mitigatory measures are not implemented. This would result in a significant negative impact on the River Moy SAC.	Development Management Guideline 4.14.1 - Designated Ecological Sites requires that an appropriate assessment in the form of an eco-hydrological assessment should accompany the Kiltimagh Sewerage Scheme planning application Reason: The subject site lies within a zone that extends from the boundary of a designated site i.e. the proposed wetlands are proposed adjacent to the River Moy SAC.	In accordance with Article 6(3) of the European Habitats Directive (92/43/EEC) an Appropriate Assessment is required to be completed for Kiltimagh Sewerage Scheme.

Appendix A

DEHLG

Circular L8/08

Circular L8/08 2 September 2008

Water Services Investment and Rural Water Programmes –
Protection of Natural Heritage and National Monuments

1. The purpose of this Circular is to provide local authorities with basic guidance on identifying potential issues relating to protection of natural heritage (including sites, habitats and species) and archaeological heritage in order to prevent avoidable delays in the planning and implementation of individual schemes under the Water Services Investment and Rural Water Programmes. Where necessary, local authorities may secure professional ecological or archaeological advice and related costs may be charged to the individual scheme involved.

2. Ireland's natural heritage is afforded legal protection through the network of NATURA 2000 or European sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Natural Heritage Areas (NHAs) and through the protection of species and their habitats, including those listed in Annexes to the Habitats and Birds Directives, in Schedules to the Wildlife Acts, 1976-2000, and in the Flora Protection Order 1999.

3. The Department advocates a general policy of not building treatment plants in active floodplains. It is also inadvisable to build such plants in former floodplains because of possible future needs to re-activate same.

4. Ireland's archaeological heritage is protected through the National Monuments Acts, 1930 – 2004, and through the various Planning and Development Acts. The policy of the Department in relation to the protection of archaeological heritage is set out in *Framework and Principles for the Protection of the Archaeological Heritage* (published by the former Department of Arts, Heritage, Gaeltacht and the Islands in 1999). The Department's policy with regard to excavation is outlined in *Policy and Guidelines on Archaeological Excavation* (D.A.H.G.I., 1999). Both documents may be downloaded from the Departmental Website *www.archaeology.ie.*

5. In order to identify potential ecological or archaeological constraints, all water services projects, including pipework proposals, should be subjected to initial screening in accordance with:
    - the checklist in Appendix 1 for natural heritage, and
    - the checklist in Appendix 2 for archaeological heritage.

   Where initial screening reveals, or cannot exclude with certainty, a likely significant ecological or archaeological impact, an assessment of impacts will need to be undertaken. For natural heritage in general, this will involve an ecological impact assessment. In the case of potential impacts on Natura 2000 or European sites (SACs and SPAs, including any candidate sites), AA (appropriate assessment) is required under Article 6(3) of the Habitats Directive. Consideration should also be given to alternative sites at an early stage.

6. AA will entail preparing a full assessment and statement of the potential direct, indirect and cumulative impacts on any Natura 2000 site and its conservation objectives - it must include measures to avoid or mitigate the impact. In addition to professional ecological expertise, which will be necessary in this context, other expertise may also be required (e.g. hydrological or hydrogeological).

   In the event that the potential effect of such an impact on a Natura 2000 site cannot be avoided or fully mitigated, a further process may apply under Article 6.4 of the Habitats Directive and would include examining all available alternatives, communication with the EU Commission and preparation of compensatory measures. Such measures will inevitably result in significant delay. Early identification and avoidance of potential impacts is, therefore, the best option. Useful guidance is available from the EU Commission's website:
   http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf

   To avoid as far as possible further delays where the impacts of a selected site cannot be avoided or fully mitigated, alternative sites/options need to be examined so there can be confidence the site selected has the least environmental impacts. A cost and design analysis of the alternative sites and their environmental impacts should be undertaken.

7. In the case of archaeology, assessment will entail preparing a full statement of the potential impact on known and previously unrecorded archaeological material. Firstly recommendations should be made on how to avoid impacts on the archaeological

resource. If it is not possible to re-align or redesign to avoid impacting on archaeological material, proposed mitigation measures, including geophysical analysis, test excavation, preservation-by record, post-excavation and publication of the results of excavation, should be detailed. Professional archaeological expertise would be necessary in this context.

Known monuments can be identified from the record of monument and places for each county and from the website *www.archaeology.ie*. National monuments that are in State ownership or guardianship, and monuments subject to preservation orders or temporary preservation orders, should be identified and zones of visual amenity defined for them. It should be noted that indirect and direct impact on national monuments in State or local authority care, or subject to a preservation order, will require the consent of the Minister for the Environment, Heritage and Local Government under section 14 of the National Monuments Act, 1930, as amended by Section 5 of the National Monuments (Amendment) Act, 2004.

Areas of previously unrecorded archaeological potential, i.e. within or adjacent to constraint areas for known monuments, wetland locations, areas with a distinctive topography indicative of high archaeological potential, should be identified.

The primary aim of all recommendations for mitigation should be to minimise further archaeological excavation while preserving archaeological material.

8. Following initial assessment in accordance with Appendix 1 or 2, as appropriate, any proposal likely to have an impact on protected habitats or species or on a national monument should immediately be notified to:

   Development Applications Unit
   Department of the Environment, Heritage and Local Government
   Dún Scéine
   Harcourt Lane
   Dublin 2

   and copied to the Department's Water Services Section.

   DAU will endeavour to make a co-ordinated response to the Planning Authority within a period five weeks from date of receipt of the proposal.

9. More detailed procedural guidance is being prepared and will be notified to local authorities as soon as possible. In the meantime, enquiries in relation to this Circular may be addressed, as appropriate, to:

   - Tom Walsh, Water Services Section, Tel 01-8882168, e-mail *tom.walsh@environ.ie*

   or

   - Dr Elizabeth Sides, NPWS Conservation Systems & Marine Tel 01-8883288, e-mail *elizabeth.sides@environ.ie*

Terry Allen
Principal Officer
Water Services Section
Bl. 1 Fl. 2
Irish Life Centre
Lr. Abbey St.
Dublin 1

To: Directors of Services (Water Services)

APPENDIX 1

Water Services Schemes - Natural Heritage Checklist for Local Authorities

This screening methodology is designed to assist those planning and designing water services solutions when determining whether AA for Natura 2000/European sites or habitats & species listed in the annexes of the EU Birds and Habitats Directives is necessary or not. It should also be applied to NHAs

Water Services infrastructure projects relate to the provision, operation and management of drinking water and wastewater services. These projects hold a high health and safety value for the public as well as being of benefit for biodiversity - it is therefore essential that such projects are screened at the earliest stage to avoid situations where nature conservation and human health and safety are pitched as competing interests.

This screening methodology will be reviewed regularly to ensure it remains consistent with the programmes of measures and River Basin Management Plans (RBMPs) currently being developed under the Water Framework Directive (WFD).

What projects must be screened?
For new projects and significant changes to any existing operations, if the answer is 'yes' to any of the following, the project (i.e. construction, operation and maintenance) must be screened for its impacts:

1. Is the development in or on the boundary of a nature conservation site NHA/SAC/SPA?
2. Will nationally protected species be directly impacted? Wildlife Acts (1976 and 2000), Flora Protection order (S.I. 94 of 1999)?
3. Is the development a surface water discharge or abstraction in the surface water catchment[1] or immediately downstream of a nature conservation site with water dependant qualifying habitats/ species[2]?
4. Is the development a groundwater discharge or abstraction in the ground water catchment[1] or within 5 km of a nature conservation site with water-dependant qualifying habitats/species[2]?
5. Is the development in the surface water or groundwater catchment of salmonid waters?
6. Is the treatment plant in an active or former floodplain or flood zone of a river, lake, etc?
7. Is the development a surface discharge or abstraction to or from marine waters[3] and within 3km of a marine nature conservation site?
8. Will the project in combination with other projects (existing and proposed) or changes to such projects affect the hydrology or water levels of sites of nature conservation interest or the habitats of protected species?

NB **Please use the Diagram below to work through the screening requirements.**

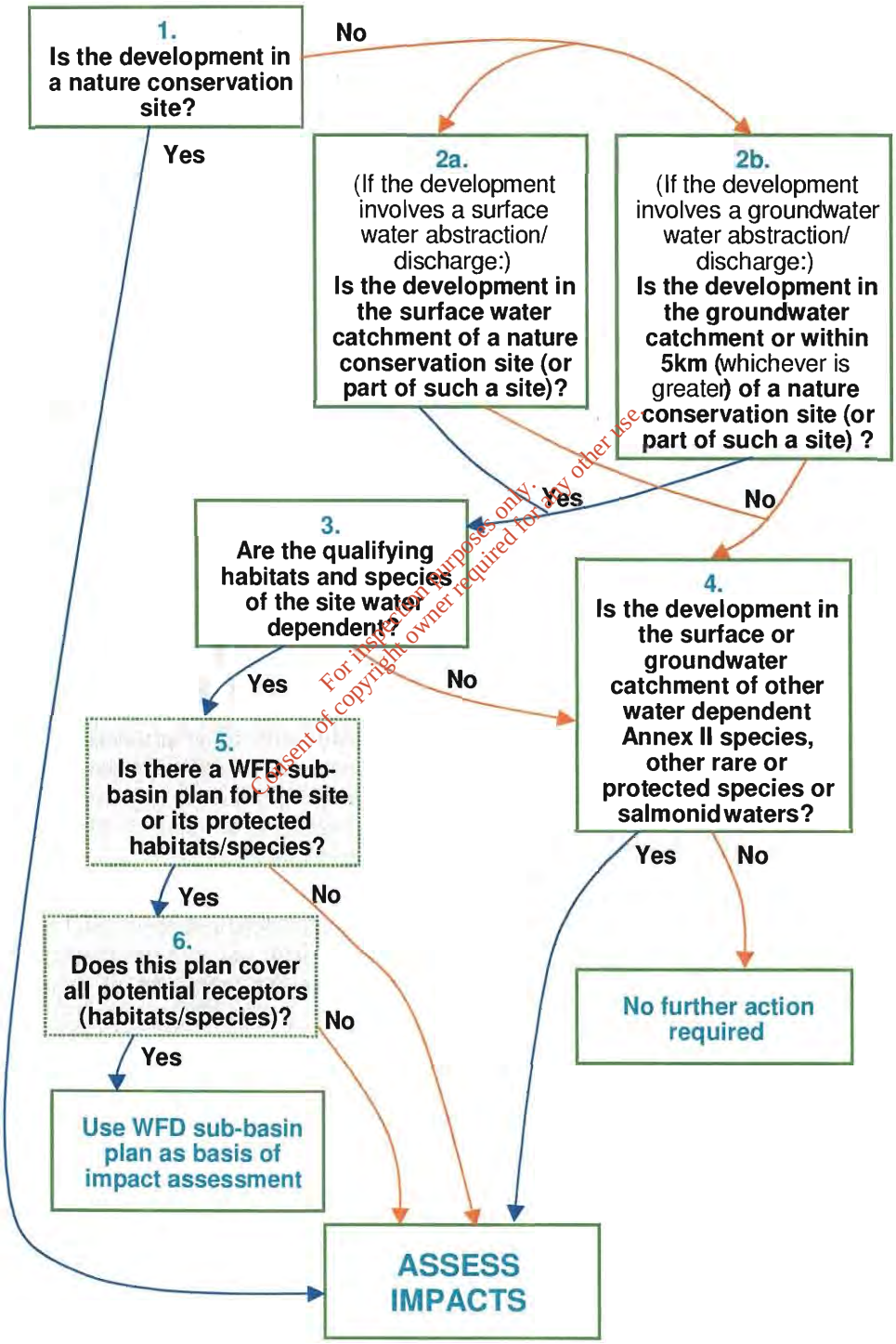
Note [1]. If there is a WFD sub basin plan for the sites or its protected habitats and the plan covers all potential receptors, i.e. habitats and species, this plan can be used as the basis for screening and impact assessment.

Note [2]. Estuaries are considered part of a catchment.

Note [3]. Any marine area including estuaries

Below is a flow diagram for screening water services infrastructure projects, followed by explanatory notes on the diagram and other points of information. If the conclusion of the screening outlined in this **Natura 2000 Screening Protocol** is to **"ASSESS IMPACTS"**, then the plan or project must be referred to the Department of the Environment, Heritage and Local Government's Development Applications Unit.

NB **Catchments of habitats and species of conservation value are addressed here as it is only through examining catchment-wide pressures that hydrological, water pollution and cumulative impacts can be properly assessed.**



Notes on flow diagram (Numbers correspond to question numbers in the Figure 1):

1. This question relates to direct impacts only and, therefore, all habitats and species of nature conservation value must be considered. If the development is within a Natura 2000 site, there is potential for direct loss of habitats and/or species of conservation value within the footprint of the development. The footprint includes all temporary and permanent access roads, trenching etc. The standard guidelines for the referral of all development applications that are adjacent to SACs to NPWS (i.e. within 500m), should also be followed here.

2. This and subsequent questions relate to indirect impacts, which are transmitted through water and, therefore, only have the potential to impact upon water dependent species. All projects in the catchments of conservation sites (i.e. both within and upstream of the site) have the potential to impact on the site and to contribute to the cumulative impacts on the site. The 5km stipulation is placed in Question 2b as it was used in the groundwater risk assessments for groundwater dependent conservation sites. Groundwater catchments are the zones of a groundwater body that contribute water to a receptor such as a conservation site. These catchments can be altered, however, through very large abstractions in certain aquifer types. Because these groundwater divides can change, the extra protection of 5km was included.

3. Habitats Directive Annex I habitats and Annex II species have been divided into water dependent (see tables 1 and 2 below) and non-water dependent for the purposes of the WFD. The list of water dependent birds will be finalised shortly. Within most conservation sites, particularly the large SAC-complexes, some areas will contain water dependent habitats/species and others will not. This means that the SAC boundary cannot be taken as indicative of the location of the relevant habitat or species. As a result, the local authority will require the specific locations of the habitats and species in order to screen these projects. These data will need to be collected through surveys where the information is not available from NPWS or other sources. NPWS do not generally have the locations of habitats and species on a single GIS, or other readily available formats. Useful information will be available through NPWS monitoring programmes and databases, such as the rare flora database, as well as through NPWS management plans. NPWS has a public mapviewer tool in place at *http://www.npws.ie/en/MapsData* and is planning the development of a GIS that will be accessible to local authorities.

4. The data for Annex II species in the wider countryside and other protected/rare species (outside designated sites) is less complete and requires further field surveys and data collection. Furthermore, as these species could extend even further downstream than the nature conservation sites, the downstream area that would need to be assessed for potential impacts could be significantly extended by this question.

5. No WFD sub-basin plans have yet been developed. However, 27 *Margaritifera* sub-basin plans wil be drafted before the end of 2008. Further such catchment plans will be developed for other species and habitats in SACs. These will set specific nature conservation and water quality/quantity targets for the sites and will prescribe the management measures than need to be undertaken within their catchments.

6. These sub-basin plans are likely to be species/habitat specific so that, even when such plans exist, all potential receptors may not be assessed and further assessments may be required for water services projects. Where sub-basin plans exist, it is likely that these can be used in combination with further impact assessments.

Many water services projects are likely to require assessment. This is particularly the case because of the occurrence of Annex II species (EU Habitats Directive 1992) in the wider countryside, other rare/protected species (Wildlife Acts) and salmonid waters.

APPENDIX 2

Water Services Schemes – Archaeological Heritage Checklist for Local Authorities

Any scheme that extends within or impinges upon the confines of the "black line" drawn around a monument on the Record of Monuments and Places map

Any scheme that is likely to have an adverse impact on the setting and amenity of a monument on the Record of Monuments and Places map

Any scheme that may not be in proximity to known monuments but is large in scale

Any scheme that may be unduly close to archaeological complexes

Any scheme that will impact on rivers, lakes, the inter-tidal zone, the foreshore or any underwater area where historic shipwrecks or other other underwater archaeological objects e.g. ships' timbers, may be located

Any scheme that requires an Environmental Impact Statement

Any scheme that may have an adverse impact on the setting and amenity of any national monument in the ownership or guardianship of the Minister for the Environment, Heritage and Local Government or any national monument in the ownership or guardianship of a local authority or any national monument that is subject to a preservation order

Appendix B

NPWS Site Synopsis River Moy SAC

SITE SYNOPSIS

SITE NAME: RIVER MOY

SITE CODE: 002298

This site comprises almost the entire freshwater element of the Moy and its tributaries including both Loughs Conn and Cullin. The system drains a catchment area of 805 sq. km. Most of the site is in Co. Mayo though parts are in west Sligo and north Roscommon. Apart from the Moy itself, other rivers included within the site are the Deel, Bar Deela, Castlehill, Addergoole, Clydagh and Manulla on the west side and the Glenree, Yellow, Strade, Gweestion, Trimogue, Sonnagh, Mullaghanoe, Owengarve, Eighnagh and Owenaher on the east side. The underlying geology is Carboniferous Limestone for the most part though Carboniferous Sandstone is present at the extreme west of the site with Dalradian Quartzites and schists at the south west. Some of the tributaries at the east, the south of Lough Conn and all Lough Cullin are underlain by granite. There are many towns adjacent to but not within the site. These include Ballina, Crossmolina, Foxford, Swinford, Kiltimagh and Charlestown.

The site is a candidate SAC selected for alluvial wet woodlands and raised bog, both priority habitats on Annex I of the E.U. Habitats Directive. The site is also a candidate SAC selected for old oak woodlands, degraded raised bog and Rhynchosporion, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Atlantic Salmon, Otter, Sea and Brook Lamprey and White-clawed Crayfish.

On the slopes and rising ground around the southern shores of Loughs Conn and Cullin, Oak woodlands are seen. Sessile Oak (*Quercus petraea*) is the dominant tree with an understorey of Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*) and Birch (*Betula pubescens*) with some Ash (*Fraxinus excelsior*). Additional species are associated with the lakeshore such as the whitebeam (*Sorbus rupicola*), Aspen (*Populus tremula*), Silver Birch (*B. pendula*) and the shrubs Guelder Rose (*Viburnum opulus*), Buckthorn (*Rhamnus catharticus*) and Spindle Tree (*Euonymus europaeus*). The ground flora is usually composed of Bilberry (*Vaccinium myrtillus*), Wood Rush (*Luzula sylvatica*), Wood Sorrel (*Oxalis acetosella*), Buckler Ferns (*Dryopteris aemula* and *D. dilatata*), Hard Fern (*Blechnum spicant*), Cow-wheat (*Melampyrum* spp.) and Bracken (*Pteridium aquilinum*). The rare Narrow-leaved Helleborine (*Cephalanthera longifolia*), protected under the Flora Protection Order, 1999, occurs in association with the woodlands. Also found in these woodlands is the snail (*Acanthinula lamellata*), associated with old natural woodlands.

On higher ground adjacent to the woodlands is blanket bog with scattered shrubs and trees on the drier areas. The rocky knolls often bear Juniper (*Juniperus communis*) or Gorse (*Ulex europaeus*), with some unusual rare herb species such as Intermediate Wintergreen (*Pyrola media*) and Lesser Twayblade (*Listera cordata*).

Within the site are a number of raised bogs including those at Kilgarriff, Gowlaun, Derrynabrock, Tawnaghbeg and Cloongoonagh. These are examples of raised bogs at

the north-western edge of the spectrum and possesses many of the species typical of such in Ireland, including an abundance of Bog Asphodel (*Narthecium ossifragum*), Carnation Sedge (*Carex panicea*) and the moss *Campylopus atrovirens*. Some of the bogs include significant areas of active raised bog habitat. Well developed pool and hummock systems with quaking mats of bog mosses (*Sphagnum* spp.), Bog Asphodel (*Narthecium ossifragum*) and White Beaked-sedge (*Rhynchospora alba*) are present. Many of the pools contain a diversity of plant species, including Bogbean (*Menyanthes trifoliata*), the bog moss *Sphagnum cuspidatum*, *Campylopus atrovirens*, Common Cottongrass (*Eriophorum angustifolium*), Great Sundew (*Drosera anglica*) and occasional Lesser Bladderwort (*Utricularia minor*). Several of the hummock-forming mosses (*Sphagnum fuscum* and *S. imbricatum*) which occur here are quite rare in this region and add to the scientific interest of the bogs within the overall site.

Depressions on the bogs, pool edges and erosion channels, where the vegetation is dominated by White Beaked-sedge (*Rhynchospora alba*) comprise the habitat Rhynchosporion. Associated species in this habitat at the site include Bog Asphodel, Sundews, Deergrass (*Scirpus cespitosus*) and Carnation Sedge.

Degraded raised bog is present where the hydrology of the uncut bogs, has been affected by peat cutting and other land use activities in the surrounding area such as afforestation and associated drainage and also by the Moy arterial drainage. Species typical of the active raised bog habitat are still present but the relative abundance of them is different. A typical example of the degraded habitat, where drying has occurred at the edge of the high bog, contains an abundance and more uniform cover of Ling Heather (*Calluna vulgaris*), Carnation Sedge, Deergrass and sometimes Bog-myrtle (*Myrica gale*). Occurring in association with the uncut high bog are areas of wet regenerating cutover bog with species such as Common Cottongrass, bog mosses and Sundew, while on the drier areas, the vegetation is mostly dominated by Purple Moor-grass (*Molinia caerulea*). Natural regeneration with peat-forming capability will be possible over time with some restorative measures.

The open water of Loughs Conn and Cullin is moderately hard with relatively low colour and good transparency. The phytpoplankton of the lake is dominated by diatoms and blue-green algae and there is evidence that the latter group is more common now than in former years. This indicates that nutrient inflow is occurring. Arctic Charr (*Salvelinus alpinus*) appear to have disappeared from the lake over the same period of time. The changes in Lough Conn appear to represent an early phase in the eutrification process. Stoneworts still present include *Chara aspera, C. delicatula* and *Nitella* cf. *opaca*. Other plants found in the shallower portions are the pondweeds. Where there is a peat influence Intermediate Bladderwort (*Utricularia intermedia*) is characteristic while Water Lobelia (*Lobelia dortmanna*) often grows in sand. Narrow reedbeds and patches of Yellow Water-lily (*Nuphar lutea*) occur in some of the bays.

Drainage of the Moy in the 60s lowered the level of the lakes, exposing wide areas of stony shoreline and wet grassland, which are liable to flooding in winter. This increased the habitat diversity of the shoreline and created a number of marginal wetlands, including fens and marshes. Plant species of note in the lake-margin include Heath Cudweed (*Omalotheca sylvatica*), Great Burnet (*Sanguisorba officinalis*) and

Irish Lady's-tresses (*Spiranthes romanzoffiana*). These three species are listed on the Irish Red Data list and are protected under the Flora Protection Order 1999.

Other habitats present within the site include wet grassland dominated by Rushes (*Juncus* spp.) grading into species-rich marsh in which sedges are common. Among the other species found in this habitat are Yellow Iris (*Iris pseudacorus*), Water Mint (*Mentha aquatica*), Purple Loosestrife (*Lythrum salicaria*) and Soft Rush (*Juncus effusus*).

Grey Willow (*Salix cinerea*) scrub and pockets of wet woodland dominated by Alder (*Alnus glutinosa*) have become established in places throughout the site. Ash (*Fraxinus excelsior*) and Birch (*Betula pubescens*) are common in the latter and the ground flora is typical of wet woodland with Meadowsweet (*Filipendula ulmaria*), Angelica (*Angelica sylvestris*), Yellow Iris, Horsetail (*Equisetum* spp.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*).

Small pockets of conifer plantation, close to the lakes and along the strip both sides of the rivers, are included in the site.

The Moy system is one of Ireland's premier salmon waters and it also encompasses two of Ireland's best lake trout fisheries in Loughs Conn and Cullin. Although the Atlantic Salmon (*Salmo salar*) is still fished commercially in Ireland, it is considered to be endangered or locally threatened elsewhere in Europe and is listed on Annex II of the Habitats Directive. The Moy is a most productive catchment in salmon terms and this can be attributed to its being a fingered system with a multiplicity of 1st to 5th order tributaries which are large enough to support salmonids < 2 years of age while at the same time being too small to support significant adult trout numbers and are therefore highly productive in salmonid nursery terms.

Salmon run the Moy every month of the year. Both multi-sea-winter fish and grilse are present. The salmon fishing season is 1st February to 30th September. The peak of the spring fishing is in April and the grilse begin running in early May. The average weight of the spring fish is 9 lb and the grilse range from about 3-7 lb. In general spring fish are found more frequently in the rivers at the western extent of the Moy system.

The Arctic Char (*Salvelinus alpinus*), an interesting relict species from the last ice age, which is listed as threatened in the Irish Red Data Book has been recorded from Lough Conn and in only a few other lakes in Ireland. The latest reports suggest that it may now have disappeared from the site.

The site is also important for the presence of three other species listed on Annex II of the E.U. Habitats Directive, namely Sea Lamprey (*Petromyzon marinus*), Otter (*Lutra lutra*) and White-clawed Crayfish (*Austropotamobius pallipes*). The Sea Lamprey is regularly encountered in the lower stretches of the river around Ballina, while the otter and crayfish are widespread throughout the system. In addition, the site also supports many more of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger, Irish Hare and Daubenton's Bat. Common Frog, another Red Data Book species, also occurs within the site.

Loughs Conn and Cullin support important concentrations of wintering waterfowl and both are designated Special Protection Areas. A nationally important population of the Annex I species Greenland White-fronted Geese (average 113 over 6 winters 1994/95 to 1999/00) is centred on Lough Conn. Whooper Swans also occur (numbers range between 25 to 50), along with nationally important populations of Tufted Duck 635, Goldeneye 189 and Coot 464. A range of other species occur on the lakes in regionally important concentrations, notably Wigeon 303, teal 154, Mallard 225, Pochard 182, Lapwing (>1,000) and Curlew 464. Golden Plover also frequent the lakes, with numbers ranging between 700 and 1,000.

Loughs Conn and Cullin are one of the few breeding sites for Common Scoter in Ireland. Breeding has occurred on Lough Conn since about the 1940s when about 20-30 pairs were known. A census in 1983 recorded 29 pairs. Breeding was first proved on Lough Cullin in 1983 when 24 pairs were recorded. In 1995, 24-26 pairs were recorded at Lough Conn and 5 pairs at Lough Cullin. The latest survey in 1999 gives a total of 30 birds for both lakes, comprising only 5 pairs, 18 unpaired males and 2 unpaired females. The reason for the decline is not known but may be due to predation by mink, possible changes in food supply and/or redistribution to other sites. The Common Scoter is a Red listed species.

Agriculture, with particular emphasis on grazing, is the main landuse along the Moy. Much of the grassland is unimproved but improved grassland and silage are also present. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the large lakes. Fishing is a main tourist attraction on the Moy and there are a large number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. The North Western Regional Fishery Board have erected fencing along selected stretches of the river as part of their salmonid enhancement programme. Other aspects of tourism are concentrated around Loughs Conn and Cullin.

Afforestation has occurred in the past around the shores of Loughs Conn and Cullin. The coniferous trees are due for harvesting shortly. It is proposed to replant with native tree species in this area. Forestry is also present along many of the tributaries and in particular along the headwaters of the Deel. Forestry poses a threat in that sedimentation and acidification occurs. Sedimentation can cover the gravel beds resulting in a loss of suitable spawning grounds. The Moy has been arterially dredged in the 60s. Water levels have been reduced since that time. This is particularly evident along the shores of Loughs Conn and Cullin and in the canal-like appearance of some river stretches. Ongoing maintenance dredging is carried out along stretches of the river system where the gradient is low. This is extremely destructive to salmonid habitat in the area.

The site supports populations of several species listed on Annex II of the EU Habitats Directive, and habitats listed on Annex I of this directive, as well as examples of other important habitats. The presence of a fine example of broad-leaved woodland in this part of the country increases the overall habitat diversity and adds to the ecological value of the site as does the presence of the range of nationally rare and Red Data Book plant and animal species.

16.05.2005

Mayo County Council

Kiltimagh Sewerage Scheme

Appropriate Assessment Report

October 2009

MGW0078CR0011

RPS

Kiltimagh Sewerage Scheme

Appropriate Assessment Report

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1 INTRODUCTION

An appropriate assessment screening and scoping report was completed for the proposed Kiltimagh Sewerage Scheme relative to the Natura 2000 site - the River Moy Special Area of Conservation (SAC) in March 2009. This report was subsequently submitted to the Developments Applications Unit (DAU) of the National Parks and Wildlife Service (NPWS) and to the North Western Regional Fisheries Board for their review and comment. The report set out a detailed description of the following:

- The proposed development – Kiltimagh Sewerage Scheme,
- The existing local environment including surface water quality, flooding, soils, geology and hydrogeology,
- Qualifying features of the River Moy Special Area of Conservation (SAC), threats and impacts to the SAC and its conservation objectives,
- Other Plans and Projects in the area relative to the River Moy SAC, and
- A scope of work required to complete an Appropriate Assessment.

The Screening and Scoping Report concluded that an Appropriate Assessment is required in line with Article 6(3) of the European Habitats Directive (92/43/EEC) in order to fully assess the impact the proposed Kiltimagh sewerage scheme might have on the River Moy SAC.

In order to avoid repetition of information this Appropriate Assessment Report should be read in conjunction with the screening and scoping report **(Ref: MGW0078RP0003).**

1.1 METHODOLOGY

The Appropriate Assessment process is comprised of four stages as outlined in the 2001 European Commission publication "*Assessment of plans and projects significantly affecting Natura 2000 sites- Methodology guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. **Figure 1.1** sets out the main steps in completing an appropriate assessment and the area shaded in grey relates to the step completed as part of this report.

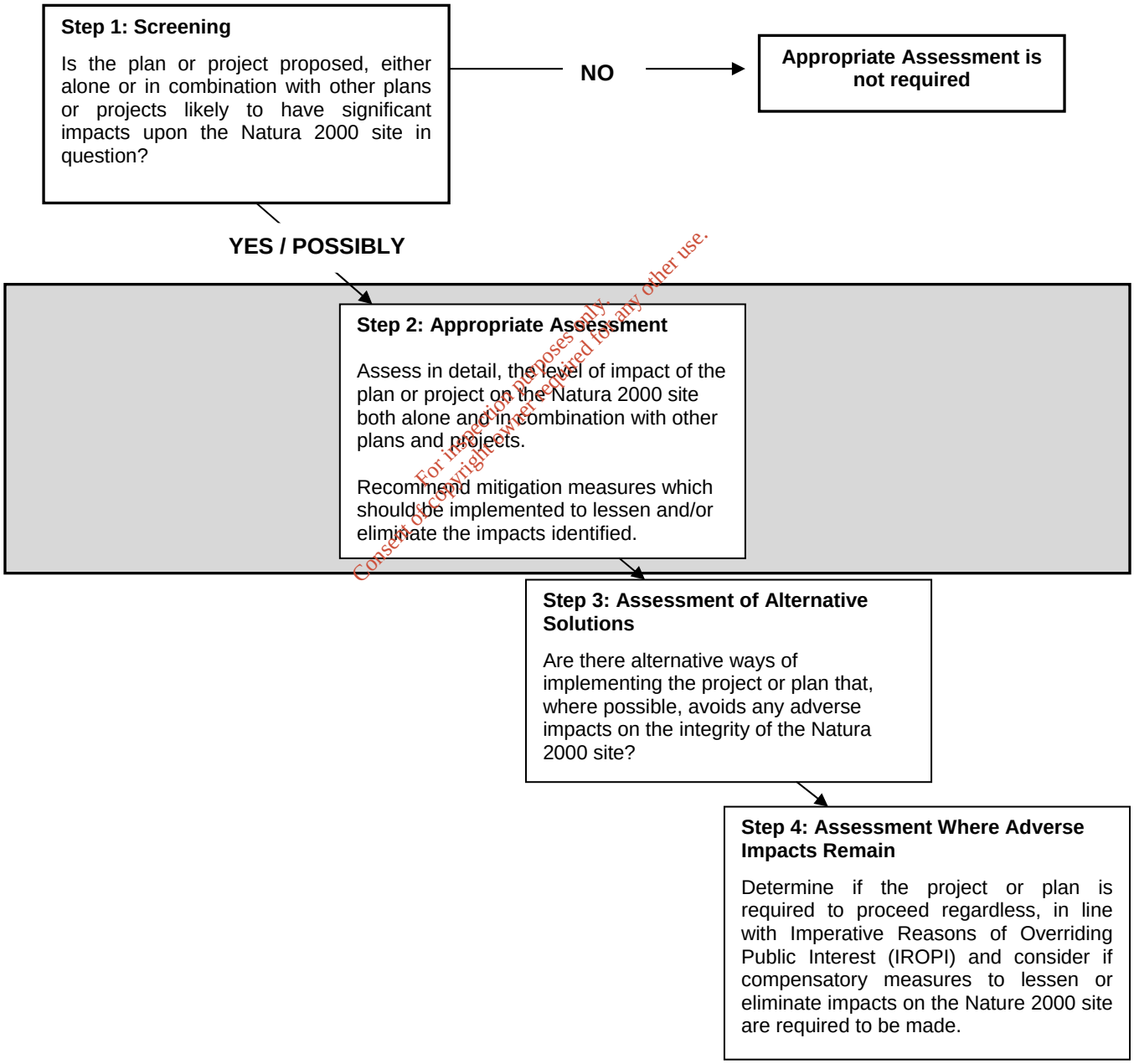


Figure 1.1 Outline Steps for an Appropriate Assessment

The following guidance documents were used in completing this appropriate assessment report;

- Assessment of plans and projects significantly affecting Natura 2000 sites- Methodology guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, (European Commission, 2001), and

- Managing Natura 2000 Sites: the provision of Article 6 of the Habitats Directive 92/43/EEC (European Commission, 2000).

1.2 CONSULTATION

Copies of the Screening and Scoping Report **(MGW0078RP0003)** were issued to the National Parks and Wildlife Service (NPWS), Developments Applications Unit (DAU) and to the North Western Regional Fisheries Board (NWRFB).

Subsequent to this correspondence RPS met with Dr. Noel Kirby (Regional Manager, NPWS), David Harrington (Fisheries Environmental Officer Manager, NWFB) and Declan Cooke (River Moy Manager, NWFB) to agree the scope of works required for the Appropriate Assessment.

It was agreed that the Appropriate Assessment for the Kiltimagh Sewerage Scheme would include an Aquatic Ecology Survey in the vicinity of the existing outfall and that the Assessment would be completed prior to the commencement of construction of the Wastewater Treatment Plant.

1.3 SCOPE

In addition to the specific requirements resulting from the consultation process, Section 6 of the Screening and Scoping Report set out a detailed scope of the elements which are included as part of this appropriate assessment report. These elements include the following;

1) Baseline Assessment of the Natura 2000 Site (River Moy SAC),
2) Assessment of other elements that interact with ecology,
4) Assessment of the proposed scheme,
5) Assessment of impacts on the Natura 2000 Site, and
6) Mitigation & control measures.

2 PROJECT DESCRIPTION

A new sewerage scheme for Kiltimagh has been proposed. The new system involves the upgrading of the existing combined sewer network to separate foul and storm water management systems, extension of the networks, provision for up to 5 no. new pumping stations, development of a constructed wetland and the installation of a modern Wastewater Treatment Plant (WWTP), to replace the existing 'Imhoff Tank'. Attenuated stormwater and treated effluent will be discharged to the River Pollagh which forms part of the River Moy SAC (Site Code: 002298). The proposed upgrade will improve the quality of the effluent discharged to the River Pollagh when compared to the current situation.

It is proposed to construct a wetland approximately 0.8 hectares in area, adjacent to the existing WWTP in order to attenuate;

(a) Storm-water run-off from the majority of the proposed network, and
(b) Final effluent discharged from the upgraded treatment plant.

The wetland has been designed for attenuation of stormwater and treated effluent discharges. The maximum permitted run-off from the wetland has been calculated to ensure that there will be no increase in flows discharged to the river when compared to the existing situation. The wetland will comprise of three cells separated by bunds and will be designed to operate at water levels between 200mm and 500mm. A weir overflow will be incorporated into the wetland system at the inlet pipe in order to cater for extreme storm events. The wetland will be planted with native plant species, typical of the surrounding lands.

The wetland will be constructed such that the flood plain is maintained and the wetland will flood in extreme flood events. The bund construction will robust enough to withstand flood events and subsequent receding of waters. A typical detail of the reinforced bund construction is shown in **Figure 2.1**.

The wetland will be planted with native plant species, typical of the surrounding lands. Consultation with the National Parks and Wildlife Service will be carried out in relation to details of the planting scheme for the constructed wetland.

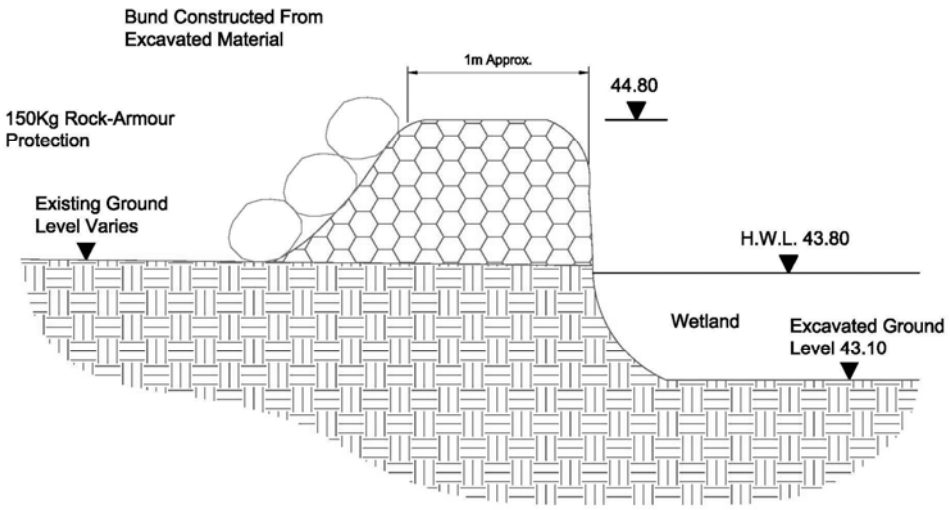


Figure 2.1 Wetland Reinforced Bund

While the majority of the storm water will be discharged through the wetlands, two smaller surface water systems will discharge to streams that discharge to tributaries of the River Pollagh and the Yellow River. The discharge of stormwater to these streams will be via petrol interceptors at stormwater outfall points OF2 and OF3 (see **Figure 2.2 of Scoping Report)**.

3 EXISTING ENVIRONMENT

3.1 DESIGNATED SITES

The proposed development is located adjacent to the River Moy SAC. The importance of a site designated under the Habitats Directive is defined by its qualifying feature or interest. Qualifying interests for any Natura 2000 site are listed on a *pro forma*, called the Natura 2000 standard data form and forms the basis of the rationale behind designation, and informs the Conservation Management Plan for targeted management and monitoring of key species and habitats. Qualifying interests for the River Moy SAC are given in **Tables 3.1** and **3.2,** along with the specific sensitivities/main threats relevant to each feature. The environmental sensitivities for the proposed development site have been derived from the baseline assessments of conservation status carried out by National Parks and Wildlife Service (NPWS) as part of the report to the EU commission on *The Status of EU Protected Habitats and Species in Ireland*, submitted in 2007.

Table 3.1 Qualifying Interests (Habitats) for River Moy SAC Site No. 002298

Natura 2000 code	Annex I Habitats	Environmental Sensitivity/ Main Threats
91E0	Alluvial wet woodlands	• Surface and ground water dependent • Highly sensitive to hydrological changes • Changes in management
7110	Raised Bog	• Peat Cutting • Grazing • Burning
91A0	Old oak woodlands	• Changes in management • Changes in nutrient or base status
7120	Degraded Raised Bog	• Surface water dependent • Highly sensitive to hydrological changes • Medium sensitivity to pollution • Spread of invasive species
7150	Rhynchosporion	• Surface and marine water dependent • Medium sensitivity to hydrological change • Changes to salinity and tidal regime • Medium sensitivity to pollution • Coastal development

Table 3.2 Qualifying Interests (Species) for River Moy SAC Site No. 002298

Qualifying Feature Annex II Species	Environmental Sensitivity /Main Threats
Sea Lamprey, Brook Lamprey	• Surface water dependent • Highly sensitive to hydrological change • Water pollution (including discharges) • Fish passage • Invasive species
Crayfish	• Surface water dependent • Highly sensitive to hydrological change • Water pollution • Invasive species
Atlantic Salmon,	• Surface and marine water dependent • Highly sensitive to hydrological change • Water pollution (including discharges) • Fish passage • Invasive species
Otter	• Surface and marine water dependent • Moderately sensitive to hydrological change • Pesticides, poisoning, hunting • Modifying watercourses

3.2 HABITATS IN THE EXISTING ENVIRONMENT

3.2.1 Terrestrial Habitats

Habitats present within the WWTP and proposed Wetland site were classified according to the guidelines set out in *'A Guide to Habitats in Ireland*' (Fossitt, 2000), which classifies habitats based on the vegetation present and management history. The habitats present within the proposed development site are shown on a habitat map, **Figure 3.1.**

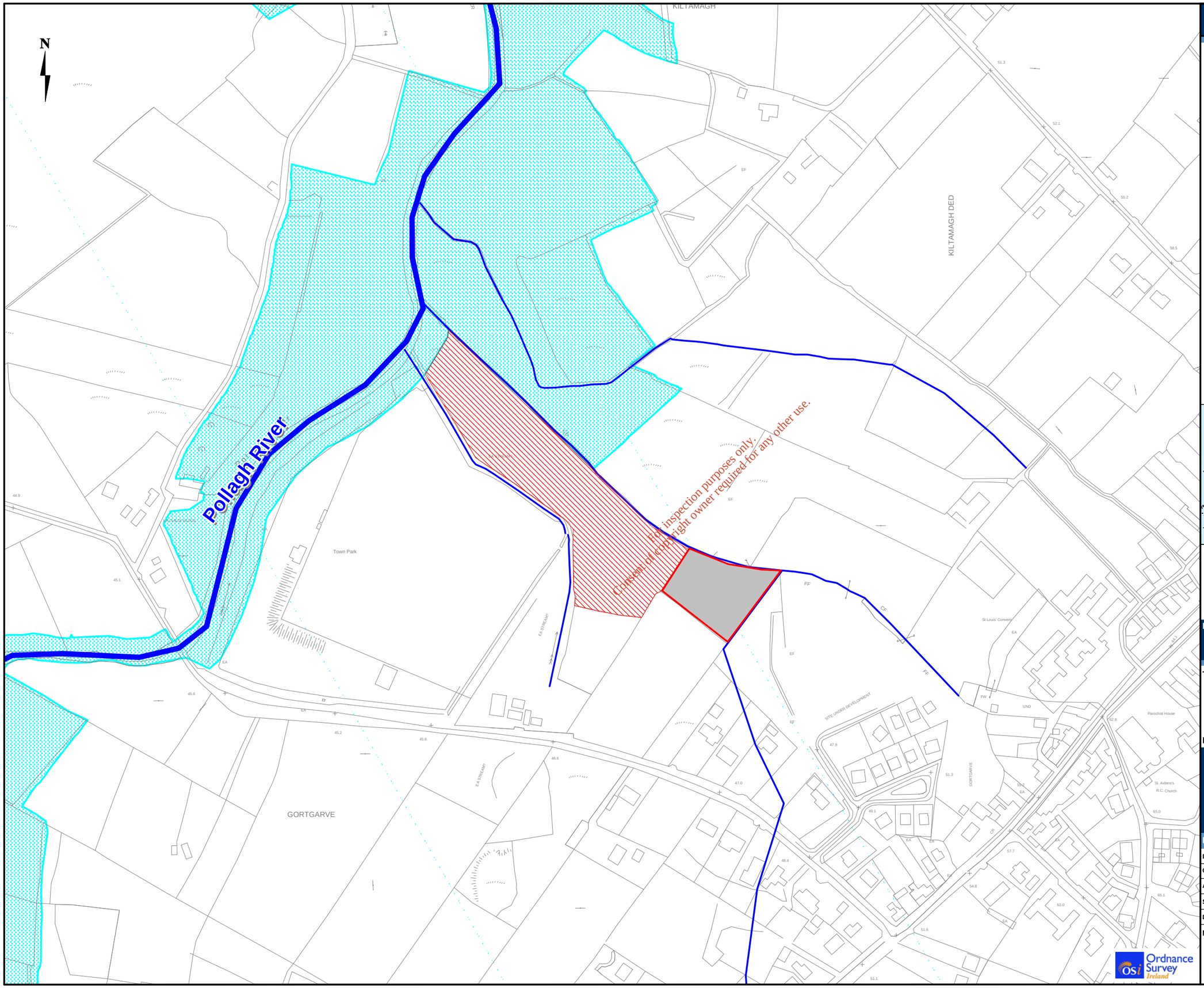
The following habitats were recorded; they are followed by their corresponding habitat reference code (in brackets):

Aquatic Habitats

- Drainage Ditches FW4

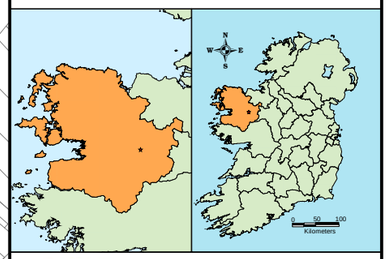
Terrestrial Habitats

- Wet Grassland (GS4)
- Buildings and Artificial Surfaces (BL3)



Legend

- Sewerage Treatment Plant/ Buildings and Artificial Surfaces BL3
- Wet Grassland GS4
- Drainage Ditches FW4
- River Moy SAC



Mayo County Council

Project

Kiltimagh Sewerage Scheme

Title

Habitat Map

Figure **3.1**

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Date:	March 2009		

Notes

1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
2. All levels are referred to Ordnance Datum, Malin Head.
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Drainage Ditches (FW4)

Drainage ditches border both sides of the proposed wetland. The effluent from the existing facility is discharged to the drain to the north. This drain is over 1m in depth and choked with vegetation in parts. Sub aquatic vegetation is limited and the banks support species such as Bramble (*Rubus fruticosus*), Gorse (*Ulex europaeus*), Willowherb (*Epilobium* spp.), Nettle (*Urtica dioica*), Bindweed (*Calystegia sepium*), Cleavers (*Galium aparine*) and Meadowsweet (*Filipendula ulmaria*). The drain to the south of the proposed wetland is approximately 1m in depth, slow moving and stagnant in places. The species found within this drain are detailed in **Table 3.3**.

Image 3.1: Vegetation on banks of Drainage Ditches

Table 3.3 Species List for Drainage Ditches (FW4)

Species (common name)	Species (*Latin* name)
Fools Watercress	*Apium nodiflorum*
Bindweed	*Calystegia sepium*
Glaucous Sedge	*Carex Flacca*
Bottle Sedge	*Carex rostrata*
Willowherb	*Epilobium spp.*
Water Horsetail	*Equisetum fluviatile*
Meadowsweet	*Filipendula ulmaria*
Cleavers	*Galium aparine*
Yellow Flag	*Iris pseudacorus*
Soft Rush	*Juncus effusus*
Water Mint	*Mentha aquatica*
Common Reed	*Phragmites australis*
Bramble	*Rubus fruticosus*
Reedmace	*Typha latifolia*
Gorse	*Ulex europaeus*
Nettle	*Urtica dioica*
Common Valerain	*Valeriana officinalis*

Wet Grassland (GS4)

The land identified for the proposed constructed wetlands are classified as Wet Grassland GS4. This habitat has been subject to agricultural improvement in the past and therefore species diversity is limited. The site is characterised by an abundance of rushes and wet grassland species such as Lesser Spearwort (*Ranunculus flammula)* and Lady's Smock (*Cardamine pratensis*). This habitat type is quite common in the surrounding landscape and is considered to be of moderate ecological importance in a local context. A list of the species found within the habitat is provided in **Table 3.4**.

Image 3.2: Wet Grassland

Table 3.4 Species List for Wet Grassland (GS4)

Species (common name)	Species (*Latin* name)
Common Bent	*Agrostis capillaris*
Meadow Foxtail	*Alopecurus pratensis*
Sweet Vernal	*Anthoxanthum odoratum*
Daisy	*Bellis perennis*
Lady's Smock	*Cardamine pratensis*
Common Mouse-ear	*Cerastium fontanum*
Tufted Hair Grass	*Deschampsia cespitosa*
Yorkshire Fog	*Holcus lanatus*
Soft Rush	*Juncus effusus*
Compact Rush	*Juncus conglomeratus*
Ragged Robin	*Lychnis flos-cuculi*
Field Wood-rush	*Luzula campestris*
Tufted Forget-me-not	*Myosotis laxa*
Redshank	*Persicaria maculosa*
Timothy	*Phleum pratanse*
Meadow Buttercup	*Ranunculus acris*
Lesser Spearwort	*Ranunculus flammula*
Creeping Buttercup	*Ranunculus repens*
Broad-leaved Dock	*Rumex obtusifolia*
Lesser Stitchwort	*Stellaria graminea*

Buildings and Artificial Surfaces (BL3)

The existing facility lies entirely within the existing Mayo County Council site. The majority of the site is classified as Buildings and Artificial Surfaces (BL3), which is of little or no ecological value.

Image 3.3: Pump House and Tanks

3.2.2 Significance of Terrestrial Habitats

The proposed WWTP site is located entirely within the existing facility site boundary which is composed mainly of Buildings and Artificial Surfaces (BL3), which is of little or no ecological value.

The proposed wetland will be located in the wet grassland habitat. This habitat is of moderate conservation value; however the constructed wetland will enhance the ecological value of the site. It is anticipated that the constructed wetlands will colonise with locally occurring wetland species. To accelerate this process wetland species will be harvested from the local area outside the boundary cSAC.

Polluting substances such as soil, fuels, lubricants, waste concrete, etc. arising on site from earth works and construction activities, may enter the River Pollagh via the Drainage Ditches FW4. Potential impacts and mitigation measures are discussed in **Section 5**.

3.3 AQUATIC HABITATS

As part of the Appropriate Assessment of the proposed development, a freshwater ecological habitat survey was carried out. The survey concentrated on the proposed discharge location (which is the same as the existing discharge location) and for a distance of 1km downstream of this location. This survey assessed:

- The present fishery value, water quality, habitat value and general ecological condition of the Pollagh River in the vicinity of the proposed development in order to provide baseline data against which future changes can be assessed;
- The status of the Habitats Directive Annex I habitats and Annex II species in the potentially affected section of the Pollagh River; and
- The general status of the potentially affected Pollagh River from an ecological and fisheries perspective in the context of downstream catchments.

3.3.1 Significance of Aquatic Habitats

The River Pollagh is a tributary of the River Gweestin which has been designated as a salmonid water in accordance with Council Directive 78/659 EEC (the quality of fresh waters needing protection or improvement in order to support fish life). A section of the Gweestin River is also listed under Protected Areas – Drinking Waters in the Western River Basin District (WRBD).

The potentially affected section of the Pollagh River is classified with international importance. This classification is based on the status of the river forming part of the River Moy SAC, and on the definite presence of at least two Annex II species approx. 1 mile upstream of the proposed development at Ballinamore Bridge, i.e. salmon and white clawed crayfish.

In consultation with the North Western Regional Fisheries Board (David Harrington *pers. Com.*) and the River Moy Catchment Officer (Declan Cook *pers. Com.*), the potentially affected section of the Pollagh River is unlikely to be of importance for salmon, however, it is considered to be a locally important trout fishery. Furthermore, there is the potential presence of additional Annex II species, lamprey, in the vicinity of the proposed development, as suitable juvenile lamprey habitat was present. Each of these Annex II species, previously mentioned, is specifically protected within the River Moy SAC.

Table 3.5 provides a summary of the existing environment at and downstream of the discharge point as shown in **Figure 3.2**.

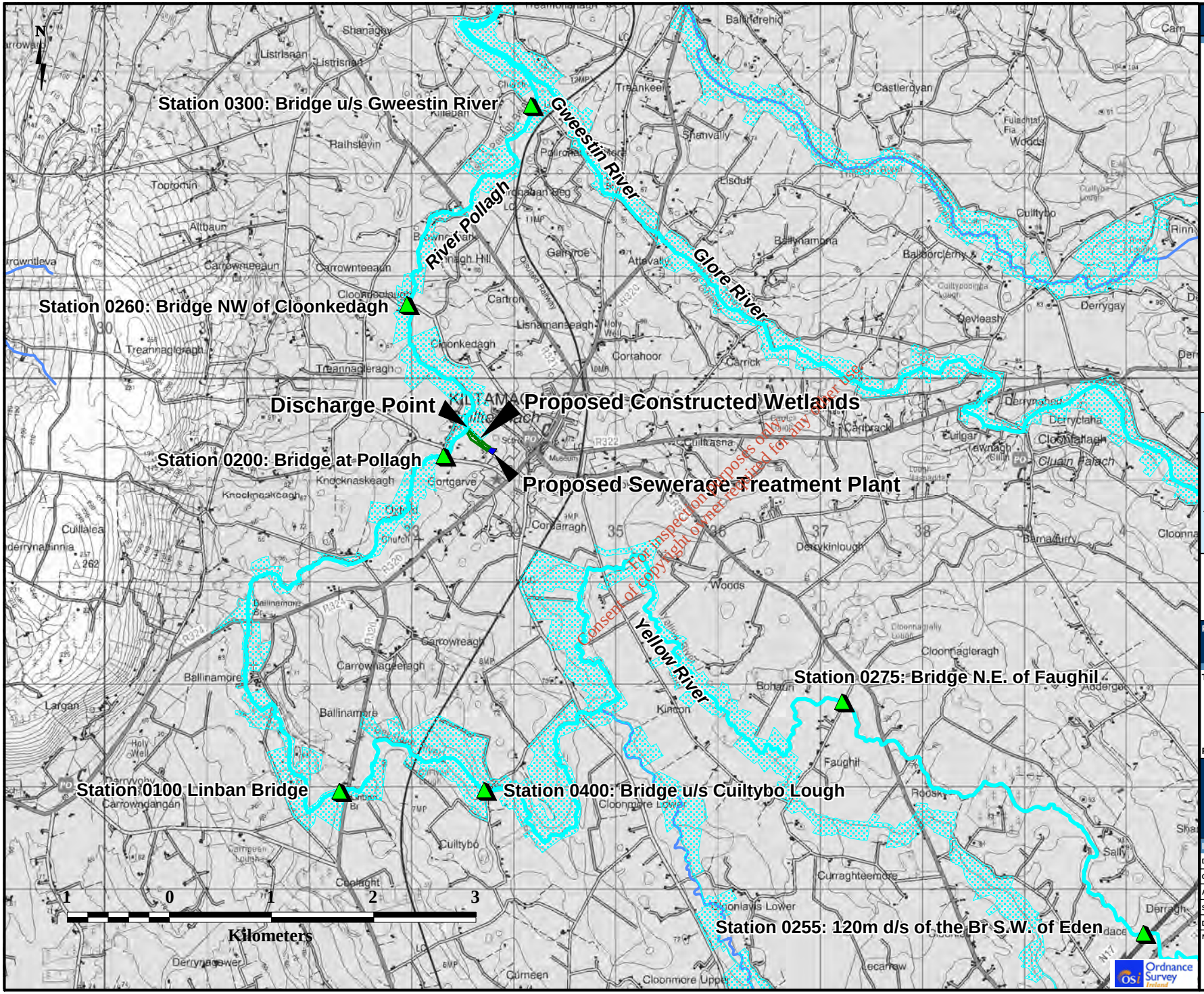
Table 3.5 Summary of Existing Environment at and Downstream of Discharge Point

At Discharge Point	**Designation**	**River Pollagh (River Moy SAC)**
	Protected or Annex II Species	Salmon unlikely; Crayfish & Lamprey likely
	Fishery Value	Important mixed fishery for salmonids, eels and coarse fish
	Ecological Importance Rating	Internationally Important
	Salmonid Adult Habitat	Fair
	Salmonid Nursery Habitat	None-Poor
	Salmonid Spawning Habitat	None
	Crayfish Habitat	Fair-Good
	Lamprey Nursery Habitat	Fair
	Lamprey Spawning Habitat	None
In 1km section downstream of impact location	**Designation**	**River Pollagh (River Moy SAC)**
	Protected or Annex II Species	Salmon unlikely; Crayfish & Lamprey likely
	Fishery Value	Important mixed fishery for salmonids, eels and coarse fish
	Ecological Importance Rating	Internationally Important
	Salmonid Adult Habitat	Fair
	Salmonid Nursery Habitat	None-Poor
	Salmonid Spawning Habitat	None
	Crayfish Habitat	Fair-Good
	Lamprey Nursery Habitat	Fair
	Lamprey Spawning Habitat	None

3.3.2 Water Quality

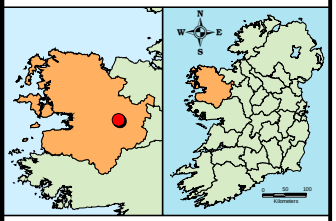
The stretch of the River Pollagh to which the current treatment plant discharges and to which it is proposed to discharge in the future is monitored by the EPA. The EPA assess river water quality at specific monitoring stations for both biological (Q- rating) and physio-chemical criteria. The location of relevant EPA Monitoring Stations on the River Pollagh are shown in **Figure 3.2**. The proposed discharge point for the constructed wetland is located between Station No. 0200 (upstream of proposal discharge point) and Station No. 0260 (downstream of proposed discharge point).

The most recent EPA biological monitoring carried out at these stations in 2005 indicated a Q- rating of 3 (moderately polluted) at station 260 (downstream of proposed discharge point)



Legend

- River
- River Moy SAC
- EPA Monitoring Station
- Constructed Wetlands
- Treatment Plant



Mayo County Council

Project
Kiltimagh Sewerage Scheme

Title

Location of EPA Water Quality Monitoring Stations

Figure 3.2

RPS
Lyr Building,
IDA Business & Technology Park,
Mervue, Galway,
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Issue Details			
Drawn by:	MCS	Project No.	MGW0078
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Notes
1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
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and a Q – rating of 4 (unpolluted with good status) at station 200 (upstream of proposal discharge point).

The River Pollagh forms part of the River Moy SAC designation and is part of the Western River Basin District (WRBD). A monitoring programme for the WRBD is being developed and a Draft Management Plan was published for public consultation in December 2008.

The Water Maps database which was produced in support of the RBD Draft Management Plans has identified the River Pollagh in terms of its current water quality status, risk category and objectives and measures to improve water quality status. **Table 3.6** summaries this information.

Table 3.6 River Pollagh Water Quality Status in the RBD Water Maps database

Element	Rating for the River Pollagh	
Water Quality Status	Q-Value (Biological Index Rating) – Poor Overall Ecological Status - Poor	
Risk Category	Overall: 2b – strongly expected to achieve good status by 2015 1a – At Risk of not achieving good status – Specific to Wastewater Treatment Plants	
Objectives	OBO – Overall Objective – Restore to Good Status by 2015 OB1 – Protected Area – Restore to Good Status by 2015	
Measures to Achieve Objectives	Basic/Legislative Measures - Urban Waste Water Treatment Directive - Water Framework Directive - Integrated Pollution Prevention Controll Directive - Nitrates Directive - Plant Protection Products Directive - Sewage Sludge Directive - Environmental Impact Assessment Directive - Major Accidents and Emergencies (Seveso) Directive - Drinking Waters Directive - Habitats Directive	Specific Measures - Cost recovery for water use - Promotion of efficient and sustainable water use - Protection of drinking water sources - Control of abstraction and impoundments - Control of point source discharges - Control of diffuse source discharges - Control of priority substances - Control of physical modifications to surface waters

Overall the river has been identified as having poor status both in terms of its Q-value (biological index) and in terms of its general ecological status. Other rivers in the region, including tributaries of the River Pollagh are rated as having moderate to good ecological status. An overall risk rating has also been given to the river and is based on the expectation that the river will achieve good status by the 2015 taking into account the existing risks identified (diffuse and point source pollution). An overall risk rating of 2b – strongly expected to achieve good status by 2015 – has been afforded to the River Pollagh. It should be noted

that the detailed report generated as part of this database identified that in terms of point source pollution, WWTP did pose a risk. Hence, the construction of a new WWTP at Kiltimagh will be critical to achieving good quality status.

The overall objective therefore for the River Pollagh is to achieve good status by 2015. Implementation of a range of legislative and other measures have been recommended in order to achieve this. These are detailed in **Table 3.6**.

4 APPROPRIATE ASSESSMENT

The Appropriate Assessment follows the format of Annex 2 of the European Commission 2001 publication **"***Assessment of plans and projects significantly affecting Natura 2000 sites- Methodology guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*".

4.1 POTENTIAL EFFECTS FROM THE PROPOSED DEVELOPMENT

4.1.1 General

An Appropriate Assessment typically requires the identification of the type and magnitude of potential impacts; direct and indirect; short and long term; construction, operational and decommissioning effects; and isolated, interactive and cumulative effects. In this instance the assessment requires the identification of the construction and operation related impacts on the SAC.

The potential significant impacts of the construction and operation of the proposed development will be:

- Pollution of watercourses with suspended solids due to runoff of soil from construction phase;
- Pollution of watercourses with other substances such as fuels, lubricants, waste concrete, waste water from site toilet and wash facilities, etc.;
- During the operational phase there will be discharge of attenuated storm water and treated effluent to the River Pollagh. It is anticipated that the discharge from the constructed wetland will be of a quality that will not impact negatively on the current water quality of the River Pollagh and will when compared to the existing situation have a positive direct impact on the River Pollagh and the River Moy SAC.

4.1.2 Construction Impacts

4.1.2.1 Pollution with suspended solids

Potential impacts from suspended sediment due to runoff of soil from construction areas can have severe negative impacts on invertebrate and plant life and on all life stages of fish. In addition the following can affect the ecology of the rivers/ streams:

- Suspended sediment can settle on spawning areas, infill the intragravel voids and smother the eggs and alevins (newly hatched fish) in the gravel,
- Bed Load (coarse material transported along the bottom of the stream) and settled sediments can infill pools and riffles, reducing the availability and quality of rearing habitat for fish,
- Suspended sediment can reduce water clarity and visibility in the stream, impairing the ability of fish to find food items,
- Settled sediments can smother and displace aquatic organisms such as macroinvertebrates, reducing the amount of food items available to fish, and
- Increased levels of sediment can displace fish out of prime habitat into less suitable areas (Chilibeck et al 1992). Suspended solids can abrade or clog the gills of salmonid fish. It takes a high concentration of solid wastes to clog a fish gill and cause asphyxiation, but only a little to cause abrasions and thus permit the possibility of infections (Solbe 1988).

4.1.2.2 Changes in hydrology

Major changes in hydrology reflected in significant changes in peak and minimum flows would have significant effects on in-stream flora and fauna, both directly and indirectly through the effects of increased erosion. The maximum permitted run-off from the wetland has been calculated to ensure that there will be no increase in flows discharged to the river when compared to the existing situation. The wetland will comprise of three cells separated by bunds and will be designed to operate at water levels between 200mm and 500mm. It is anticipated that the construction of the wetland will only have a slight impact on the surface water flows and once completed shall have no impact on the hydrology of this system.

4.1.2.3 Pollution with other substances associated with the construction process

The potential exists for a range of serious pollutants to enter watercourses during the WWTP upgrade construction. For example any of the following will have deleterious effects on fish, plants and invertebrates if allowed to enter watercourses.

- Raw or uncured concrete and grouts,
- Wash down water from exposed aggregate surfaces, cast-in-place concrete and from concrete trucks,
- Fuels, lubricants and hydraulic fluids for equipment used on the development site,
- Bitumen and silanes used for waterproofing concrete surfaces, and
- Wastewater from on site toilet and wash facilities.

4.1.3 Operational Impacts

4.1.3.1 Improved water quality

The current damaging activities and main threats to the Pollagh River and the River Moy SAC are from the inputs of high nutrient loads to this riverine system, which has resulted in its degraded water quality. The input of excess nutrients is from both diffuse and point sources; the spreading of slurry and fertiliser in the catchment, together with sewage effluent which has not been properly treated.

The water quality of the Pollagh River remains vulnerable and is currently classified as moderately polluted with poor status. However, good water quality is necessary to maintain the populations of the Annex II species for which the site is designated. This good water quality is dependent on controlling both the fertilisation of the grasslands and requires that sewage be properly treated before discharge.

The proposed Kiltimagh Sewerage Scheme will significantly reduce the nutrient loads entering the Pollagh River and the River Moy SAC and therefore is likely to improve the water quality of this system. This improvement of water quality is necessary to sustain the populations of Annex II species for which the site has been designated.

Stormwater from the two smaller systems will discharge to smaller streams that form tributaries of the River Pollagh and the Yellow River. The discharge of stormwater to these streams will be via petrol interceptors at two stormwater outfall points OF2 and OF3, thus improving the water quality at these locations.

4.2 IMPACT PREDICTION

These impacts have been described in detail in the previous sections and are summarised in **Table 4.1**.

Note that the table describes impacts in the absence of mitigation. Mitigation measures that avoid, reduce/minimise or remediate the significance of the potential impact are outlined in **Section 5**.

Table 4.1 Summary of Impacts on the Qualifying Features of the River Moy SAC

Qualifying Feature Annex I Habitats & Annex II Species	Sensitivity	Direct (isolated, interactive, cumulative, short-term, long-term)	Indirect (isolated, interactive, cumulative, short-term, long-term)
Alluvial wet woodlands	Changes in management Changes in surface and ground water	No direct effects predicted.	Potential changes may occur to the hydrological regime during the construction phase (See **Section 4.3.2.2**). These changes will be minimal and will not have a significant negative impact on this habitat.
Raised Bog	Peat cutting Grazing Burning	No direct effects predicted.	Potential changes may occur to the hydrological regime during the construction phase (See **Section 4.3.2.2**) These changes will be minimal and will not have a significant negative impact on this habitat.
Old oak woodlands	Changes in management Changes in nutrient or base status	No direct effects predicted.	No indirect effects predicted.
Degraded Raised Bog	Changes in management Changes in surface and ground water Invasive species	No direct effects predicted.	Potential changes may occur to the hydrological regime during the construction phase (See **Section 4.3.2.2**) These changes will be minimal and will not have a significant negative impact on this habitat.
Rhynchosporion	Changes in management Changes in nutrient or base status Changes to air quality	No direct effects predicted.	Potential changes may occur to the hydrological regime during the construction phase (See **Section 4.3.2.2)** These changes will be minimal and will not have a significant negative impact on this habitat.
Sea Lamprey, Brook Lamprey	Surface water dependent Highly sensitive to hydrological change	Direct effects may occur during the construction and operation phases (See **Section 4.3.2** and **Section 4.3.3**)	Indirect effects may occur during the construction and operation phases (See **Section 4.3.2** and **Section 4.3.3**)
Crayfish	Surface water dependent Highly sensitive to hydrological change	Direct effects may occur during the construction and operation phases (See **Section 4.3.2** and **Section 4.3.3**).	Indirect effects may occur during the construction and operation phases (See **Section 4.3.2** and **Section 4.3.3**).
Atlantic Salmon,	• Surface and marine water dependent • Highly sensitive to hydrological change	Direct effects may occur during the construction and operation phase (See **Section 4.3.2** and **Section 4.3.3**).	Indirect effects may occur during the construction and operation phase (See **Section 4.3.2** and **Section 4.3.3**)
Otter	• Surface and marine water dependent • Moderately sensitive to hydrological change	No direct effects predicted.	No indirect effects predicted.

4.3 EFFECTS ON INTEGRITY OF NATURA 2000 SITE

In determining the potential nature of effects on the Natura 2000 site, this assessment has focused on the qualifying features of the site and their sensitivities. The potential to impact on each qualifying feature has been assessed and the results of this assessment summarised in **Table 4.2**.

Once the impacts that the Proposed Development will present have been established, it is necessary to assess whether or not these impacts will adversely affect the integrity of the sites as defined by the conservation objectives. Conservation objectives relevant to Natura 2000 sites are outlined in the following section and a summary of the effects of the predicted impacts of the project upon the integrity of the site is outlined in **Table 4.2**.

4.3.1 Conservation Objectives of the Natura 2000 Site

European and national legislation places a collective obligation on Ireland and its citizens to maintain at favourable conservation status areas designated as Natura 2000 sites. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

According to the EU Habitats Directive favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, is stable or increasing;
- the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- the conservation status of its typical species is favourable as defined below.

The favourable conservation status of a species is achieved when:

- population data on the species concerned indicate that it is maintaining itself;
- the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future; and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

General conservation objectives for SAC's from existing management plans that are applicable to the River Moy SAC include the following:

- To maintain, and where possible, enhance the Annex I habitats for which the SAC has been selected at favourable conservation status;
- To maintain the Annex II species for which the SAC has been selected at favourable conservation status;
- To maintain, and where possible enhance, the extent, biodiversity and species richness of the site;
- To maintain other habitats at favourable conservation status; and
- To establish effective liaison and co-operation with landowners, legal users and relevant Authorities.

Table 4.2 Integrity of Site Checklist

Does the project have the potential to:	Yes or No	Comment
Reduce the area of key habitats?	No	No impacts have been identified that would adversely affect any habitats for which the Natura 2000 site has been designated.
Reduce the population of key species?	Yes	There is potential for the loss of crayfish and juvenile lamprey during the construction period only. Required mitigation measures are outlined in **Section 5**.
Change the balance between key species?	Yes	There is potential for the loss of crayfish and juvenile lamprey during the construction period only. Required mitigation measures are outlined in **Section 5**.
Reduce diversity of the site?	Yes	There is potential for the loss of crayfish and juvenile lamprey during the construction period only. Required mitigation measures are outlined in **Section 5**.
Result in disturbance that could affect population size or density or the balance between key species?	Yes	There is potential for the loss of crayfish and juvenile lamprey during the construction period only. Required mitigation measures are outlined in **Section 5**.
Result in fragmentation?	No	No impacts have been identified that would result in fragmentation of species or habitats for which the Natura 2000 site has been designated.
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?	No	No key features of the Natura 2000 sites will be lost as a result of construction or operation of the Proposed Development.
Cause delays in progress towards achieving the conservation objectives of the site?	No	The potential for loss and/or disturbance of key species will be minimal and will not cause delays in achieving the conservation objectives of the site. Required mitigation measure are outlined in **Section 5.**
Interrupt progress towards achieving the conservation objectives of the site?	No	The potential for loss and/or disturbance of key species will be minimal and will not cause delays in achieving the conservation objectives of the site. Required mitigation measures are outlined in **Section 5.**
Disrupt those factors that help to maintain the favourable conditions of the site?	Yes	Potential impacts may occur to water quality of the river and through pollution of watercourses during the construction phase. This could impact on protected habitats and species downstream of the proposed development. Required mitigation measures are outlined in **Section 5.** Positive impacts will occur during the operational phase through the reduction of nutrient inputs. This could impact on protected habitats and species downstream of the proposed development as water quality is highly likely to improve.
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?	No	There is potential for the loss of crayfish, juvenile and lamprey during the construction period only. Required mitigation measures are outlined in **Section 5**.
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	No	Localised changes may occur to the hydrological regime for the duration of the construction phase. These changes will be minimal and will not affect the integrity of the sites.

Does the project have the potential to:	Yes or No	Comment
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	No	No impacts to ecosystem dynamics and functioning.
Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	No	No impacts to predicted or expected natural changes.

Taken from *"Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*"

5 MITIGATION MEASURES

5.1 GENERAL

Where a likely significant adverse effect has been identified during an Appropriate Assessment or cannot conclusively be ruled out, it may be possible to proceed with a proposal where mitigation measures can be implemented to address the adverse effect. Measures have been included in the design of the proposed development to ensure that the adverse impacts identified will be mitigated.

5.2 MITIGATION OF THE POTENTIAL IMPACT DURING CONSTRUCTION

5.2.1 Reduction and Prevention of Suspended Solids Pollution

As the River Pollagh is part of a SAC, measures will be put in place to ensure that no significant impact on the SAC is caused by suspended solids. Discharges to watercourses shall therefore not exceed 25mg/l of total suspended solids. The key factors in erosion and sediment control for land based works are to intercept and manage runoff. This limits the potential for soils to be eroded and enter streams in runoff. Runoff and surface erosion control is more effective and less expensive than sediment control with sediment control ponds only. The following general guidelines for erosion and sediment control are largely based on Goldman *et al* (1986). They will be adhered to where possible during construction of the Proposed Development;

i. Schedule development close to sensitive watercourses to minimise risk of potential erosion by, where possible, planning construction activities during drier months, halting construction during periods of heavy precipitation and run-off to minimise soil disturbance, and restrict vehicular and equipment access or provide working surfaces/pads.
ii. Retain existing vegetation where possible and physically mark clearing boundaries on the construction site.
iii. Re-vegetate denuded areas, particularly cut and fill slopes and disturbed slopes as soon as possible. Use mulches or other organic stabilisers to minimise erosion until vegetation is established on sensitive soils.
iv. Cover temporary fills or stockpiles which are likely to erode into nearby watercourses with polyethylene sheeting.

v. Divert runoff away from denuded areas.

vi. Minimise the length and steepness of slopes where possible.

vii. Minimise runoff velocities and erosive energy by maximising the lengths of flow paths for precipitation runoff, constructing interceptor ditches and channels with low gradients to minimise secondary erosion and transport, and lining unavoidably steep interceptors or conveyance ditches with filter fabric, rock or polyethylene lining to prevent channel erosion.

viii. Retain eroded sediments on site with erosion and sediment control structures such as sediment traps, silt fences and sediment control ponds.

ix. Access roads shall be constructed or topped with a suitable coarse granular material/nonwoven geotextile, and if possible organic topsoil shall be stripped prior to access road construction.

x. Sediment control ponds shall be designed for a minimum retention time of 15 hours.

xi. It is important that at the planning stage provision is made for a sufficient land area to accommodate the necessary sediment control measures.

In addition, works will be isolated and separated from the cSAC through the use of physical barriers (fencing, bunds, etc). A method statement should be agreed in advance with the North Western Regional Fisheries Board and the National Parks & Wildlife Service to ensure that significant contamination of the Pollagh is prevented.

Works with a risk of significant suspended solids contamination of the River Pollagh should not be carried out between the end of September and the end of April unless otherwise agreed with the North Western Regional Fisheries Board.

5.2.2 Mitigation of Hydrological Impacts

The wetland construction will be scheduled during drier months when the water levels are naturally at their lowest and therefore the potential temporary impact on the hydrological regime and levels will be minimal.

5.2.3 Reduction or Elimination of Pollution with other Substances Associated with the Construction Process

Where the construction site is close to a watercourse, the following guidelines based on Chilibeck *et al* (1992), NRA (2005) and SRFB (2007) shall be followed:

i. Raw or uncured waste concrete should be disposed of by removal from the site or by burial on the site in a location and in a manner that shall not impact on the watercourse.

ii. Wash down water from exposed aggregate surfaces, cast-in-place concrete and from concrete trucks should be trapped on-site to allow sediment to settle out and reach neutral pH before clarified water is released to the stream or drain system or allowed to percolate into the ground.

iii. Fuels, lubricants and hydraulic fluids for equipment used on the construction site shall be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to current best practice (Enterprise Ireland BPGCS005).

iv. Fuelling and lubrication of equipment shall not be carried out on sites close to water courses.

v. Any spillage of fuels, lubricants or hydraulic oils shall be immediately contained and the contaminated soil removed from the site and properly disposed of.

vi. Oil booms and oil soakage pads shall be kept on site to deal with any accidental spillage.

vii. Waste oils and hydraulic fluids shall be collected in leak-proof containers and removed from the site for disposal or re-cycling.

viii. Prior to any instream work ensure that all construction equipment is mechanically sound to avoid leaks of oil, fuel, hydraulic fluids and grease.

ix. All pumps using fuel or containing oil shall be locally and securely bunded when situated within 25m of waters or when sited such that taking account of gradient and ground conditions there is the possibility of discharge to waters.

x. Foul drainage from site offices etc. shall be removed to a suitable treatment facility or discharged to a septic tank system constructed in accordance with EPA guidelines.

6 CONCLUSIONS

An Appropriate Assessment of the proposed Kiltimagh Sewerage Scheme has been carried out. Once best practise is followed in the construction of the proposed development, and the recommended mitigation measures are taken into consideration, it is considered that this development will not have a significant negative impact upon the River Pollagh and therefore the River Moy SAC and its habitats and species.

The proposed development is likely to impact positively on water quality through the reduction in nutrient inputs, reduction in the frequency of storm overflows and once the treatment plant is operational, will provide improved protection for the receiving water and the cSAC. The potential for discharge of partially treated effluent will be reduced and the standard of treatment achieved will be significantly higher than the current plant which is incapable of meeting the EU Urban Waste Water Directive treatment standards.

The constructed wetlands will provide additional protection to the receiving waters and further nutrient reductions will occur in the wetlands. The wetlands will be a new and attractive habitat adjacent to the cSAC.

WASTE ASSIMILATIVE CAPACITY (WAC) CALCULATIONS

Dilution Rate:

No. Dilutions = Flow in receiving water (m^3/d) / WWTP discharge volume (m^3/d) =

10368 / 365 = **28.4 (Dilution Rate for EXISTING WWTP)**

10368 / 750 = **13.8 (Dilution Rate for PROPOSED WWTP)**

WAC Calculation:

WAC (kg/d) = (Cmax-Cback) * F95 (m^3/s) * 86.4

Where Cmax = max permissible concentration in receiving water (based on achieving 'good status' under the EC Environmental Objectives (Surface Waters) Regulations 2009).

Cback = background (upstream) concentration (mg/l)

F95 = 95% flow in receiving river (m^3/s)

WAC for BOD = (2.6-1) * 0.4 * 86.4 = **55.3 kg/day BOD**

(Using 'Good Status' for Cmax and results of aSW1u sample for Cback)

WAC for Suspended Solids = (25-2) * 0.4 * 86.4 = **794.9 kg/d SS**

(Using Salmonid Regulations for Cmax and results for aSW1u sample for Cback)

WAC for Ortho-phosphorus = (0.075-0.021)*0.4 * 86.4 = **1.87 kg/d Ortho-phosphorus**

(Using 'Good Status' for Cmax and results for aSW1u sample for Cback)

WAC for Ammonia = (0.14-0.04) * 0.4 * 86.4 = **3.5 kg/d Ammonia**

(Using 'Good Status' for Cmax and results for aSW1u sample for Cback)

Alternatively WAC for Ammonia = (0.636-0.04) * 0.4 * 86.4 = **20.6 kg/d Ammonia**

(Using Salmonid Regs for Cmax and results for aSW1u sample for Cback)

Loadings from EXISTING & PROPOSED WWTPs:

Loading (kg/d) = {discharge concentration (mg/l) x discharge flow (m^3/d)} / 1000

Where **discharge concentrations** are based on:

- Existing (WWTP) – the maximum concentrations provided in Table D.1(i)(b) of the discharge license application and
- Proposed (WWTP) - the Average Standards to be achieved in proposed WWTP (source Appropriate Assessment).

Where **discharge flows** are based on dry weather flow (dwf) and are as follows:

- Existing WWTP discharge flow = 365 m^3/d (source Table D.1(i)(a) (0.00422 m^3/s*60*60*24)).
- Proposed WWTP discharge flow = 750 m^3/d (source Appropriate Assessment)

BOD Loadings

Existing WWTP BOD loading = (19 * 365)/1000 = 6.9 kg/day BOD (within assimilative capacity)

Proposed WWTP BOD loading = (20 * 750)/1000 = 15 kg/day BOD (within assimilative capacity)

SS Loadings

Existing WWTP SS loading = (46 * 365)/1000 = 16.8 kg/day SS (within assimilative capacity)

Proposed WWTP SS loading = (30 * 750)/1000 = 22.5 kg/day SS (within assimilative capacity)

Total Nitrogen as N Loadings

Existing WWTP TN loading = (22.6 * 365)/1000 = 8.25 kg/day TN (within assimilative capacity)

Proposed WWTP TN loading = (15 * 750)/1000 = 11.25 kg/day TN (within assimilative capacity)

Total Phosphorus (as P) Loadings

Existing WWTP TP loading = (1.695 * 365)/1000 = 0.6 kg/day TP (within assimilative capacity)

Proposed WWTP TP loading = (1 * 750)/1000 = 0.8 kg/day TP (within assimilative capacity)

Nitrate as N Loading

Existing WWTP N loading = (0.1 * 365)/1000 = 0.04 kg/day N (within assimilative capacity)

Proposed WWTP N loading = (? * 750)/1000 = ? kg/day N (within assimilative capacity)

Nitrite Loading

Existing WWTP N loading = (0.005 * 365)/1000 = 0.002 kg/day N (within assimilative capacity)

Proposed WWTP N loading = (? * 750)/1000 = ? kg/day N (within assimilative capacity)

Total Ammonia Loading

Existing WWTP N loading = (11.838 * 365)/1000 = 4.3 kg/day N (NOT within assimilative capacity)

Proposed WWTP N loading = (? * 750)/1000 = ? kg/day N (within assimilative capacity)

OrthoP Loading

Existing WWTP P loading = (0.64 * 365)/1000 = 0.2 kg/day P (within assimilative capacity)

Proposed WWTP P loading = (? * 750)/1000 = ? kg/day P (within assimilative capacity)

MAYO COUNTY COUNCIL

KILTIMAGH

WASTE WATER DISCHARGE LICENCE APPLICATION

ATTACHMENT G.1

Compliance with Council Directives **Revised August 2010**

G.1 Compliance with Council Directives

Kiltimagh wastewater treatment plant (WwTP) (currently under construction) and agglomeration were planned and designed in such a way that the emissions from the agglomeration would comply with / not result in the contravention of all relevant Council Directives.

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

Water Framework Directive 2000/60/EC

This Directive is transposed into Irish law by the European Communities (Water Policy) Regulations, 2003-2008.

A draft plan for the Western River Basin District was adopted by Mayo County Council in April 2010. Mayo County Council will pay regard to this plan in its management of Kiltimagh WwTP.

Birds Directive 79/409/EEC

This Directive is transposed into Irish law by the European Communities (Conservation of Wild Birds) Regulations, 1999-2006.

There are no SPA's in proximity to the Kiltimagh WwTP and agglomeration.

Groundwater Directive 80/68/EEC & 2006/118/EC

This Directive is transposed into Irish law by the Protection of Groundwater Regulations, 1999 (S.I. No. 41 of 1999).

There are no direct groundwater discharges from the Kiltimagh WwTP and agglomeration.

Dangerous Substances Directive 2006/11/EC

This Directive is transposed into Irish law by the Water Quality (Dangerous Substances) Regulations, 2001 (S.I. No. 12 of 2001).

Pesticides and Solvents Substances standards and Metal and other Substances standards, listed in the Standards Schedule of the Regulations apply to substances in a water body. The discharge from Kiltimagh WwTP was monitored for all these substances as part of the wastewater discharge licence application and results, in Table 1 below, indicate that levels are below those acceptable in a water body.

Name					**Kiltimagh**	**Kiltimagh**
Location					**DOWNSTREAM**	**UPSTREAM**
SampleLabCode						
SampleDate					**10/11/2008**	**10/11/2008**
	Unit	**Standard**				
Atrazine	ug/l		1		<0.04	<0.04
Dichloromethane	ug/l		10		<1	<1
Simazine	ug/l		1		<0.04	<0.04
Toluene	ug/l		10		<1	<1
Tributyltin (tidal)	ug/l		0.001		<0.02	<0.02
Xylenes	ug/l		10		<1	<1
$CaCO_3$	mg/l	<10*	<=100	>100		
Arsenic	ug/l		25	25	=0.5	<0.5
Chromium	ug/l		5	30	<0.5	<0.5
Copper	ug/l		5	30	=1	=1
Cyanide	ug/l		10	10	<10	<10
Fluoride	ug/l		500	500	=100	=100
Lead	ug/l		5	10	<0.5	<0.5
Nickel	ug/l		8	50	=2	=2
Zinc	ug/l	8	50	100	<5	<5
Total Hardness	mg/l				151.6	151.4

* zinc only

Table 1. Dangerous Substances compliance details

Drinking Water Directive 80/778/EEC

This Directive is transposed into Irish law by the European Communities (Drinking Water) (No.2) Regulations, 2007 (S.I. No. 278 of 2007).

There are no downstream drinking water abstraction points from the Kiltimagh WwTP and agglomeration.

Bathing Water Directive 76/160/EEC

This Directive is transposed into Irish law by the Bathing Water Quality Regulations, 2008 (S.I. No. 79 of 2008)

There are no designated Bathing Waters in proximity to the Kiltimagh WwTP and agglomeration.

Shellfish Directive 79/923/EEC

This Directive is transposed into Irish law by the European Communities (Quality of Shellfish Waters) Regulations, 2006 (S.I. No. 268 of 2006).

There are no designated shellfish waters in proximity to the Kiltimagh WwTP and agglomeration.

Environmental Liabilities Directive 2004/35/EEC

This Directive is transposed into Irish law by the European Communities (Environmental Liability) Regulations 2008 (S.I. No. 547 of 2008).

The new Kiltimagh WwTP (due to be commissioned Jan 2011), will ensure that the emissions from the agglomeration would not result in the contravention of these Regulations.

Urban Waste Water Directive 91/271/EEC

This Directive is transposed into Irish law by the Urban Waste Water Treatment Regulations, 2001 (S.I. No. 254 of 2001).

Kiltimagh WwTP discharges directly to the Pollagh River. This river is not listed as sensitive in accordance with the Third Schedule of the Regulations.

Mayo County Council sampled the existing Kiltimagh WwTP twelve times per year using an external laboratory. The results from this sampling over the last year are in general non-compliance with the Regulations. However the new WwTP currently under construction with a proposed commissioning date of January 2011 should ensure that the discharge from the WwTP is in compliance with the above Regulations.

Other provisions of the Regulations in relation to collection systems and treatment are adhered to.

Habitat's Directive 92/43/EEC

This Directive is transposed into Irish law by the European Communities (Natural Habitats) Regulations, 1997-2005.

To comply with the above directive an appropriate assessment screening document and a subsequent full Appropriate Assessment was carried out. See attachment F.1.