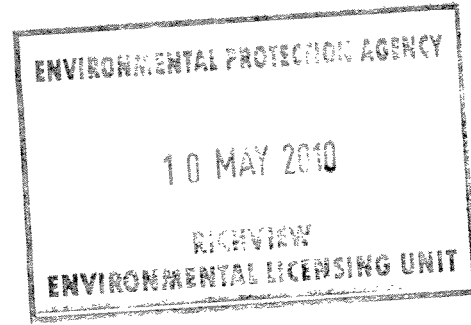
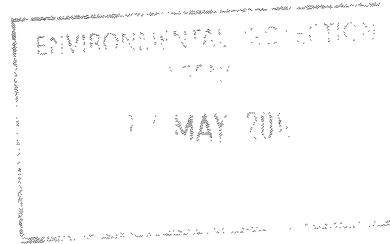




# Monaghan

COUNTY COUNCIL  
COMHAIRLE CONTAE  
MHUINEACHÁIN



Arts  
047 71114

Community &  
Enterprise  
047 30500

10<sup>th</sup> April 2010

County Library  
047 51143

County Museum  
047 82928

Environment  
047 30593

Administration,  
Environmental Licensing Programme,  
Office of Climate, Licensing & Resource Use,  
Environmental Protection Agency,  
Headquarters,  
PO Box 3000,  
Johnston Castle Estate,  
Co. Wexford.

Finance  
047 30589

**Re: Notice in Accordance with Regulation 25(c) (ii) of the Waste Water Discharge (Authorisation) Regulations 2007**

Fire/Building Control  
047 30521

Higher Education  
Grants  
047 30550

A Chara,

Further to your correspondence of the 7<sup>th</sup> April 2010, please find enclosed the following documentation and accompanying CD-ROMs relating to our application for nine Waste Water Discharge Certificates of Authorisations (A0020-01, A0029-01, A0031-01, A0032-01, A0033-01, A0034 -01, A0035-01, A0036-01 and A0037-01):

Housing Estate  
Management  
047 30529

- Appropriate Assessment for each agglomeration - Original + 1 copy
- Amended Non-Technical Summary for each agglomeration - Original + 1 copy
- CD-ROM of each Appropriate Assessment & Amended Non-Technical Summary

Housing Loans/Grants  
047 30527

I trust you will find everything in order, however should you require any further information, please do not hesitate to contact me.

Human Resource  
Management  
047 30586

Mise le Meas,

Motor Tax  
047 81175

Mark Johnston

Planning  
047 30532

Senior Executive Engineer.

Register of Electors  
047 30547

Roads  
047 30597

Water Services  
047 30504



Monaghan County Council

**Threemilehouse Waste Water  
Discharge Certificate of  
Authorisation (A0020-01)**

**Appropriate Assessment for the purposes of  
the Waste Water Discharge (Authorisation)  
Regulations, 2007 (S.I. No 684 of 2007)**

Date: May 2010



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**Monaghan County Council**  
**Threemilehouse Waste Water Certificate of Authorisation Application**  
**Appropriate Assessment**  
**Register No: A0020-01**



**Figures**

Figure 1 - Flow Diagram for Screening Water Services Infrastructure Projects

Figure 2 - Designated Sites and Threemilehouse WWTW

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# 1 Introduction

## 1.1 Background

As required under the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No 684 of 2007), Monaghan County Council submitted nine Certificates of Authorisation applications to the EPA on 22<sup>nd</sup> December 2009. The WwTW's concerned are Threemilehouse, Tydavnet, Clontibret, Knockatallon, Oram, Carrickroe, Drum, Magheraclone and Tyholland.

This report has been produced to support the Waste Water Certificate of Authorisation application for the Threemilehouse agglomerations (EPA Application Register Numbers A0020-01) and to form a response to the EPA correspondence of 7<sup>th</sup> April 2010 (in line with Regulation 25 c (ii) of the Waste Water Discharge (Authorisation) Regulations 2007) which requested Monaghan County Council to:

*"Assess the likelihood of significant effects of the waste water discharges from the above agglomerations on the relevant European sites 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 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".*

## 1.2 Appropriate Assessment Legislation

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora - the "Habitats Directive" - provide legal protection for habitats and species of European importance. The Directives requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conversation status and provides the legislation to protect habitats and species of community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000 sites.

Natura 2000 sites are Special Areas of Conservation (SAC) designated under the Habitats Directive and Special Protection Areas (SPA) designated under the Conservation of Wild Birds Directive (79/409/EEC).

**Monaghan County Council**  
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**Appropriate Assessment**  
**Register No: A0020-01**



Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects affecting Natura 2000 sites.

Article 6(3) establishes the requirement for Appropriate Assessment:

*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. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, 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 and, if appropriate, after having obtained the opinion of the general public.*

Article 6(4) of the Directive deals with alternative solutions, the test of "imperative reasons of overriding public interest" (IROPI) and compensatory measures:

*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, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

### 1.3 Waste Water Discharge (Authorisation) Regulations, 2007

All discharges to the aquatic environment from sewerage systems owned, managed and operated by water service authorities will require a waste water discharge licence or certificate of authorisation from the EPA. The authorities are required to apply to the Agency for a licence or certificate of authorisation by set dates depending on the population equivalent of the area served by the sewer network.

The authorisation process provides for the Agency to place stringent conditions on the operation of such discharges to ensure that potential effects on the receiving water bodies are strictly limited and controlled. In overall terms the aim is to achieve good surface water and ground water status in addition to complying with standards and objectives established for associated protected areas by 2015 at the latest.



1.4 Methodology

1.4.1 Initial Screening of Projects

In order to identify potential ecological constraints, all water services projects (in this case the Threemilehouse Waste Water Treatment Plants and associated discharges), should be subjected to initial screening in accordance with the initial screening checklist in the *Circular L8/08 Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments (September 2008)* (see **Table 1** below). This process will confirm if the project is required to be screened for impacts (as per Appendix 1 Circular L8/08 DoEHLG Sept 2008).

**Table 1: Initial Screening for Waste Water Services Infrastructure Projects**

<b>Initial Screening (as per DoEHLG Circular L8/08 September 2008)</b>
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, or immediately downstream of a nature conservation site with water dependant qualifying habitats/ species?
4. Is the development a groundwater discharge or abstraction in the ground water catchment or within 5km of a nature conservation site with water-dependant qualifying habitats/species?
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 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?



#### 1.4.2 Appropriate Assessment Screening (Stage 1)

Where initial screening reveals that the project is required to be screened for impacts, an Appropriate Assessment Screening must be carried out in accordance with the Appendix 1 Flow Diagram of the DoEHLG Circular 08/08 (see **Figure 1** below).

The flow diagram in the DoEHLG Circular 08/08 will be used to screen for impacts. If the conclusion of the screening outlined in this Natura 2000 Screening Protocol is "Assess Impacts", then Stage 2 of the Appropriate Assessment process will be carried out to assess the potential adverse impact of the discharge on conservation objectives of any relevant Natura 2000 site, in line with the requirements of Article 6 of the Habitats Directive.

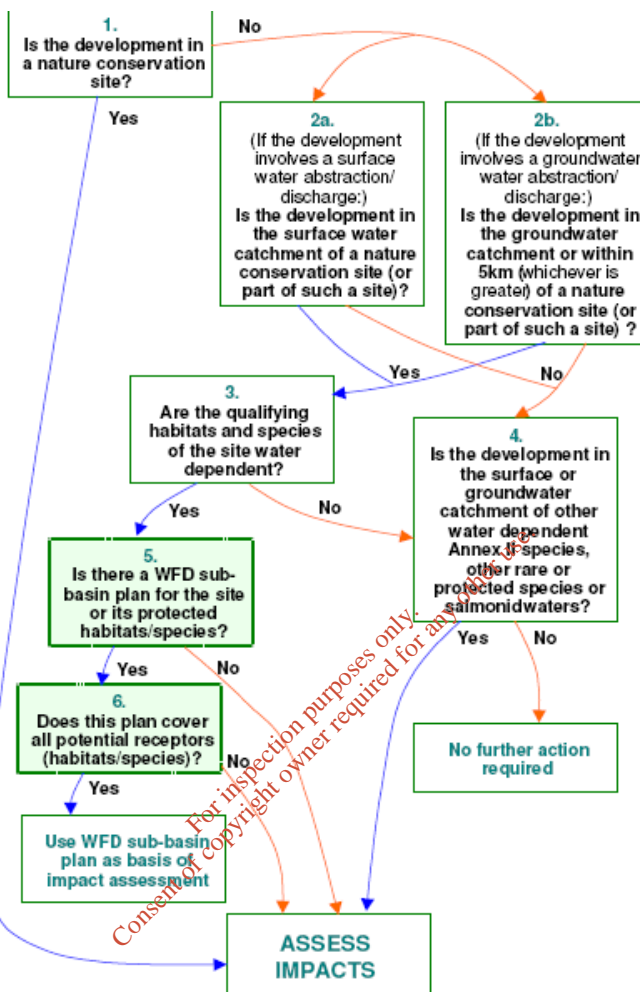
This screening methodology is designed to assist those planning and designing water services solutions when determining whether Appropriate Assessment for Natura 2000/European sites or habitats & species listed in the annexes of the EU Birds and Habitats Directives is necessary or not. It also should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

This appropriate assessment is prepared in accordance with EPA guidance notes and Department of environment Heritage and Local Government Circular Letter L8/08 with data from the NPWS web Site and the SERBD, in combination with Monaghan County Council data.

#### 1.4.3 Appropriate Assessment (Stage 2)

In Stage 2 of this Appropriate Assessment process, the impact of the discharges from the Threemilehouse WwTW on the integrity of the European Designated Site(s) will be considered with respect to the Conservation Objectives of the site. This involves acquiring adequate information on the project, in this case the WWTWs, predicting the likely effects (direct, indirect, short and long term, isolated, interactive and cumulative) and their impacts on the conservation objectives and status of the European Designated Site. Finally, mitigation measures will need to be identified and assessed against the adverse effects the project is likely to cause.





**Figure 1. Flow Diagram for Screening Water Services Infrastructure Projects (Source: DoEHLG Circular L08/08 Sept 2008)**



## 2 Pre Screening

As per the DoEHLG Circular 08/08, pre-screening is required to determine whether water services projects (in this case, Threemilehouse WWTW Effluent Discharge) must be screened for impacts. If the answer is "yes" to any of the pre-screening questions, Stage 1 Appropriate Assessment Screening, must be carried out. If the conclusion of the screening outlined in the Natura 2000 Screening Protocol is to "Assess Impacts", then an Appropriate Assessment must be prepared.

The requirement to screen for impacts will be determined in the sub sections below.

### 2.1 Threemilehouse Agglomeration

#### 2.1.1 Background

The waste water works serving the Threemilehouse village and the immediate environs comprises a network of gravity sewers, a pumping station, associated rising main and a Waste Water Treatment Works.

The waste water treatment plant, which provides treatment for a design load of 250 PE, comprises settlement, followed by a rotating biological contactor and clarification by reed beds. It currently provides treatment for an estimated PE of 133.

The primary discharge of the waste water works is to the Threemilehouse River (at National Grid Reference 262216E, 330133N) in the townland of Drumguill, Co. Monaghan (see **Figure 2** overleaf). The associated Waste Water Treatment Plant is located at 262203E 330148N also in the townland of Drumguill, Co. Monaghan.

The Threemilehouse River flows into the Conawary River which is a tributary of the River Blackwater. The receiving water is not identified as a "sensitive" waterway under the Urban Waste Water Treatment Regulations S.I. 254 2001. The same stretch of river is also not classified as a "salmonid river" under S.I. 293 of 1988. The river is located within the Neagh Bann IRBD. The River Blackwater is however designated Nutrient Sensitive from the confluence of the River Shambles to Newmills Bridge.

Further information on the Threemilehouse Waste Water agglomeration is contained in Monaghan County Council's Waste Water Certificate of Authorisation application (Ref: A0020-01).

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**Threemilehouse Waste Water Certificate of Authorisation Application**  
**Appropriate Assessment**  
**Register No: A0020-01**



2.1.2 Threemilehouse Pre-Screening

**Table 2: The Requirement to Screen the Threemilehouse WWTW for Impacts**

Threemilehouse WwTW	Answer
1. Is the development in or on the boundary of a nature conservation site NHA/SAC/SPA?	No
2. Will nationally protected species be directly impacted? Wildlife Acts (1976 and 2000), Flora Protection order (S.I. 94 of 1999)?	No
3. Is the development a surface water discharge or abstraction in the surface water catchment or immediately downstream of a nature conservation site with water dependant qualifying habitats/ species?	Yes
4. Is the development a groundwater discharge or abstraction in the ground water catchment or within 5km of a nature conservation site with water-dependant qualifying habitats/species?	No
5. Is the development in the surface water or groundwater catchment of salmonid waters?	No
6. Is the treatment plant in an active or former floodplain or flood zone of a river, lake, etc.?	No
7. Is the development a surface discharge or abstraction to or from marine waters and within 3km of a marine nature conservation site?	No
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?	No

The Threemilehouse WWTW is not in or on the boundary of an NHA, SAC or SPA. The discharge is not immediately downstream or upstream of a nature conservation site with water dependent habitats or species. The nearest conservation site is Ulster Canal Aghalisk NHA (Site Code 001611) which is approximately 3.2km downstream of the discharge point (see **Figure 3** below). This site is designated for several uncommon species of flora.

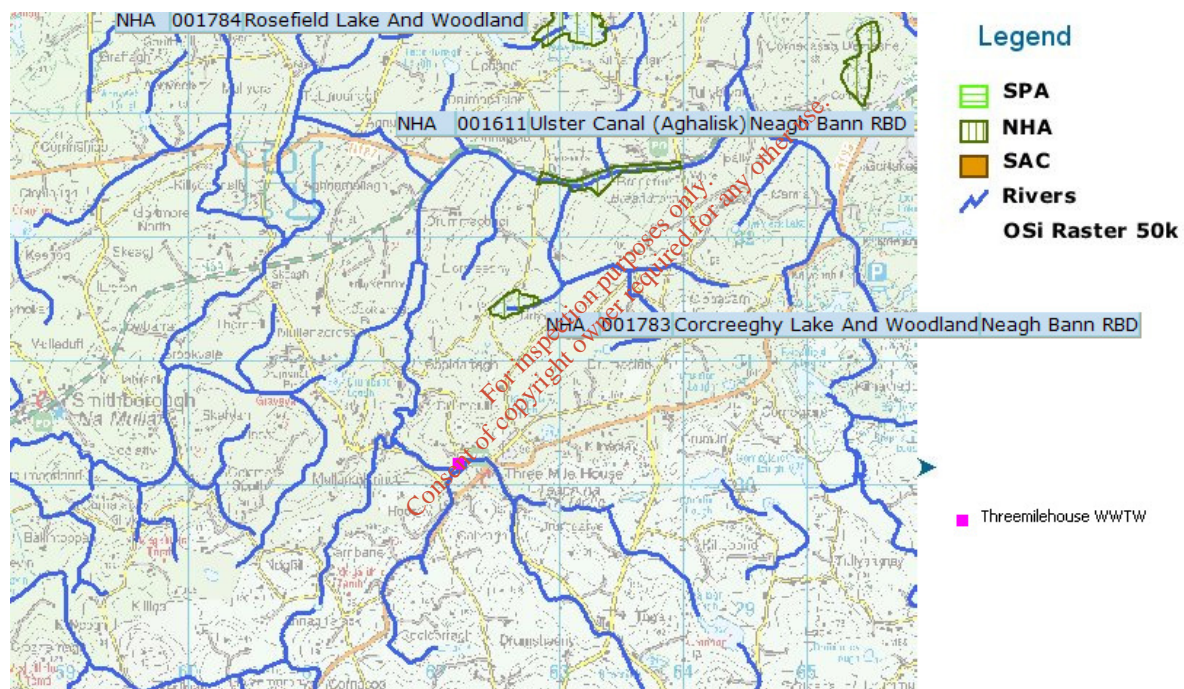
The **Ulster Canal NHA** is largely a dry channel although it is noted ecologically because of the influence of the Conawary River which runs parallel to extensive sections of the canal. This river supports rare plant species including the Flowering Rush (*Butomus umbrellatus*). The dry canal bed supports Iris (*Iris pseudacorus*) and Meadowsweet (*Filipendula ulmaria*). Woodland associated with the canal includes Ash (*Fraxinus spp*) and Beech (*Fagus spp*). The Ulster Canal NHA is approximately 3.2km downstream of the discharge point.

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Threemilehouse Waste Water Certificate of Authorisation Application  
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The **Corcreeghy Lake and Woodland NHA** which is approximately 1.2 km downstream (as the crow flies) is a relatively undisturbed area featuring marsh margins at the lough shore and further from the shoreline there is extensive areas of wet woodland featuring Willow (*Salix* spp) and Alder (*Alnus* spp). The rare marsh fern (*Thelypteris palustris*) is thriving in this location. This lake is so designated as a fine example of intact transition from open water to wet woodland together with the rare species contained within.

The **Rosefield Lake and Woodland NHA** represents a small Lakeland site containing reedbeds and surrounded by Alder woodland. This NHA is approximately 4km north east of the discharge point.



**Figure 2. Nearest Designated Site to Threemilehouse WWTW (Source: EPA ENVision)**

As the answer to one of the questions is 'yes', the Screening Stage 1 of the Appropriate Assessment process (see Appendix 1 Flow Diagram) must be completed for this project.



### 3 Stage 1-Screening

#### 3.1 Introduction

As noted in Section 1.3.2, where initial screening reveals that a project is required to be screened for impacts, an Appropriate Assessment Screening must be carried out in accordance with the Appendix 1 Flow Diagram of the DoEHLG Circular 08/08.

Following the completion of the pre-screening exercise in Section 2, it was determined that an Appropriate Assessment Screening was required for the Threemilehouse Waste Water Treatment Works. This Screening exercise will be completed to assess the likelihood of significant effects (if any) resulting, from the waste water discharge from the Threemilehouse agglomeration, on the **Ulster Canal NHA, Corcreeghy Lake and Woodland NHA** and the **Rosefield Lake and Woodland NHA** (see **Figure 2**).

#### 3.2 Threemilehouse Screening

##### 3.2.1 Management of the Site

The Threemilehouse agglomeration and its discharge are neither directly connected nor necessary to the management of the Ulster Canal NHA, Corcreeghy Lake and Woodland NHA and the Rosefield Lake and Woodland NHA.

##### 3.2.2 Description of the Project

A brief description of the WwTW and associated discharge is given in this section. Further information is contained within the Waste Water Discharge Certificate of Authorisation application File Ref A0020-01.

The waste water works serving the Threemilehouse village and the immediate environs comprises a network of gravity sewers, a pumping station, associated rising main and a Waste Water Treatment Works with a design capacity of 250 PE. The current approximate loading to the plant is 133 PE

The primary discharge of the waste water works is to the Threemilehouse River (at National Grid Reference 262216E, 330133N) in the townland of Drumguill, Co. Monaghan. The associated Waste Water Treatment Plant is located at 262203E 330148N also in the townland of Drumguill, Co. Monaghan.

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**Appropriate Assessment**  
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The waste water treatment plant, which provides treatment for a design load of 250 PE, comprises settlement, followed by a rotating biological contactor and clarification by reed beds. Sludge from the Threemilehouse Waste Water Treatment plant is tankered to Monaghan Town WWTP for treatment.

The treated effluent has an average BOD concentration of 11.8 mg/l and average suspended solids concentration of 5.6 mg/l and COD concentration of 53.6mg/l. Average concentrations of nutrients are as follows; orthophosphate 2.165 mg/l (P), average Total Phosphorus 4.6 mg/l (P) and Total Nitrogen 30.9 mg/l (N).

Analysis of the samples taken from the receiving waters upstream and downstream of the discharge point, and of the final effluent from the existing Threemilehouse Waste Water Treatment Plant, shows levels of dangerous substances that are below the limits specified in the Dangerous Substances Regulations.

The nearest biological monitoring stations are Conawary (Lower) (Station Number 1100) which is downstream of the discharge point and Conawary (Upper) (Station Number 0700) which is located upstream of the discharge point.

The baseline Q value at the Conawary (Lower) station was 3. The current MRP value is 40ug/l and the current Q Value (2003-2005) is 3. The standard to be achieved by 2007 was 3-4 or 50ug/l. This standard was achieved. Although the MRP standard was achieved, it must be noted that there has been suspected agricultural pollution in the Lower Conawary in the past.

The baseline Q value at the Conawary (Upper) station was 4. The current MRP value is 60ug/l and the current Q Value (2007) is 3. The standard to be achieved by 2007 was 4 or 30ug/l. Neither standards were achieved. The suspected cause for this was agricultural pollution (EPA Water Quality in Ireland 2004-2006).

The receiving water is not identified as a "sensitive" waterway under the Urban Waste Water Treatment Regulations S.I. 254 of 2001. The same stretch of river is also not classified as a "salmonid river" under S.I. 293 of 1988 or in a salmonid river catchment. The river is located within the Neagh Bann IRBD. The River Blackwater is however designated Nutrient Sensitive from the confluence of the River Shambles to Newmills Bridge.





### 3.2.3 Threemilehouse Waste Water Treatment Plant

The waste water treatment plant, which provides treatment for a design load of 250 PE, comprises settlement, followed by a rotating biological contactor and clarification by reed beds. Sludge from the Threemilehouse Waste Water Treatment plant is tankered to Monaghan Town WWTP for treatment.

#### **Inlet Works**

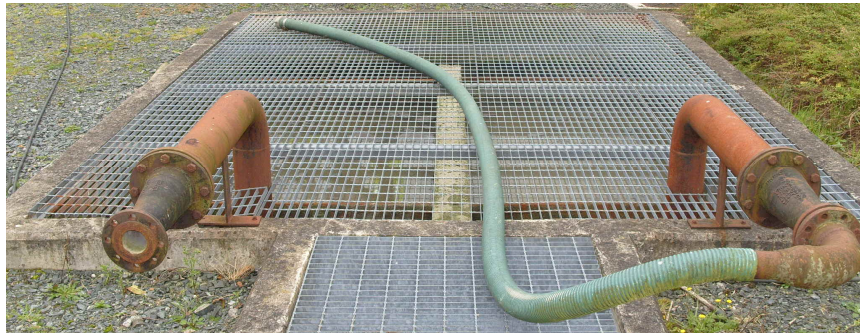
Flow through the works is by gravity and is screened. The inlet works comprises of screen (15mm bar screen, manually cleaned by rake – see photo 1 below) and a flume. Level measurement is available but not operational.



**Photograph 1 Inlet Works**

#### **Treatment**

Flow passes by gravity from the inlet works and is split between two parallel primary settling tanks. Floated sludge is trapped by an underflow baffle, preventing it from entering the zone of the v-notched weir.



**Photograph 2 Settling Tanks**

Following primary settlement, flow passes to a rotating biological contactor (RBC). The RBC is rotated slowly by a small electric motor and is arranged so that a proportion of the media is submerged in the effluent at any time. As the RBC rotates, the media is subjected alternately to wastewater and air, encouraging an aerobic, biologically active film of biomass to establish on the media sheets, oxidising the pollutants in the sewage.



**Photograph 3 Rotating Biological Contactor**

The flow passes from the RBC to a humus tank. Flows enters the humus tank through a diffuser drum ensuring the flow is directed evenly toward the v-notched weir.





**Photograph 4 Humus Tank**

Effluent passes over the v-notched weir, is collected in a channel and piped to a reed bed for final clarification. A pumped sludge return is provided to the inlet of the primary settling tank.

### **Sludge**

The settling tanks are de-sludged by tanker every 2 months. The sludge is transported to Monaghan Town WWTP for further treatment.

### **3.2.4 In Combination Impacts**

This AA screening process only relates to Threemilehouse WWTW discharge. The discharge has the potential to only have an effect on the aquatic environment, hence it can be inferred that in combination effects need only apply to other plans and projects that have an impact on the aquatic environment. There are no industrial and municipal discharges in the vicinity or upstream or downstream of the discharge location. Historic data however, has indicated agricultural run-off pollution incidences both at the Upper and Lower Conawary station. This agricultural run-off is likely to contain elevated levels of nutrients, namely nitrogen and phosphorus, suspended solids and residues of pesticides and herbicides.

Hence there is the potential for combination impacts (agricultural discharge and WWTW discharge) on the Ulster Canal NHA.



### 3.3 Step 3 Characteristics of the Site

#### 3.3.1 General Description

The **Ulster Canal NHA** is largely a dry channel although it is noted ecologically because of the influence of the Conawary River which runs parallel to extensive sections of the canal. This river supports rare plant species including the Flowering Rush (*Butomus umbrellatus*). The dry canal bed supports Iris (*Iris pseudacorus*) and Meadowsweet (*Filipendula ulmaria*). Woodland associated with the canal includes Ash (*Fraxinus spp*) and Beech (*Fagus spp*).

The **Corcreeghy Lake and Woodland NHA** is approximately 1.2 km downstream (as the crow flies) is a relatively undisturbed area featuring marsh margins at the lough shore and further from the shoreline there is extensive areas of wet woodland featuring Willow (*Salix spp*) and Alder (*Alnus spp*). The rare marsh fern (*Thelypteris palustris*) is thriving in this location. This lake is so designated as a fine example of intact transition from open water to wet woodland together with the rare species contained within.

The **Rosefield Lake and Woodland NHA** represents a small Lakeland site containing reedbeds and surrounded by Alder woodland. This NHA is approximately 4km north east of the discharge point.

#### 3.3.2 NHA Qualifying Interest

##### **Ulster Canal NHA**

The Ulster Canal NHA is largely noted ecologically because of the influence of the Conawary River which runs parallel to extensive sections of the canal. This river supports rare plant species including the Flowering Rush (*Butomus umbrellatus*).

The Conservation Objective of this site is to maintain the qualifying interests for this NHA at favourable conservation status.

The qualifying interests (rare species of flora) for which the NHA are designated are water dependent. Due to the NHA's distance from the discharge point, there is the potential for adverse impacts on the qualifying interests; hence Stage 2 of the Appropriate Assessment process will be carried out to assess the potential adverse impact of the discharge on conservation objectives of this site.



### **Corcreeghy Lake and Woodland NHA**

The Corcreeghy Lake and Woodland is designated as it is a fine example of intact transition from open water to wet woodland together with the rare species contained within.

The Conservation Objective of this site is to maintain the qualifying interests for this NHA at favourable conservation status.

Some of the qualifying interests for which the NHA is designated are water dependent, however the designated site is not located immediately upstream or downstream of the discharge location or in the discharge's receiving water catchment. No significant effects on the NHA's integrity and qualifying interests are likely, therefore no further Assessment is required.

### **Rosefield Lake and Woodland NHA**

The Rosefield Lake and Woodland is designated as it is a fine example of transition lakeshore to alder woodland.

The Conservation Objective of this site is to maintain the qualifying interests for this NHA at favourable conservation status.

The qualifying interests for which the NHA is designated are water dependent, however the designated site is not located immediately upstream or downstream of the discharge location or in the discharge's receiving water catchment. No significant effects on the NHA's integrity and qualifying interests are likely, therefore no further Assessment is required.

## **3.4 Step 4 Assessment of Significance**

As per Circular L8/08 Water Services Investment and Rural Water Programmes - Protection of Natural Heritage and National Monuments issued by the DoEHLG, this section displays the outcome of the Appendix 1 Flow Diagram which was used to screen for impacts. It should be noted that the red line indicates the project-specific outcomes.



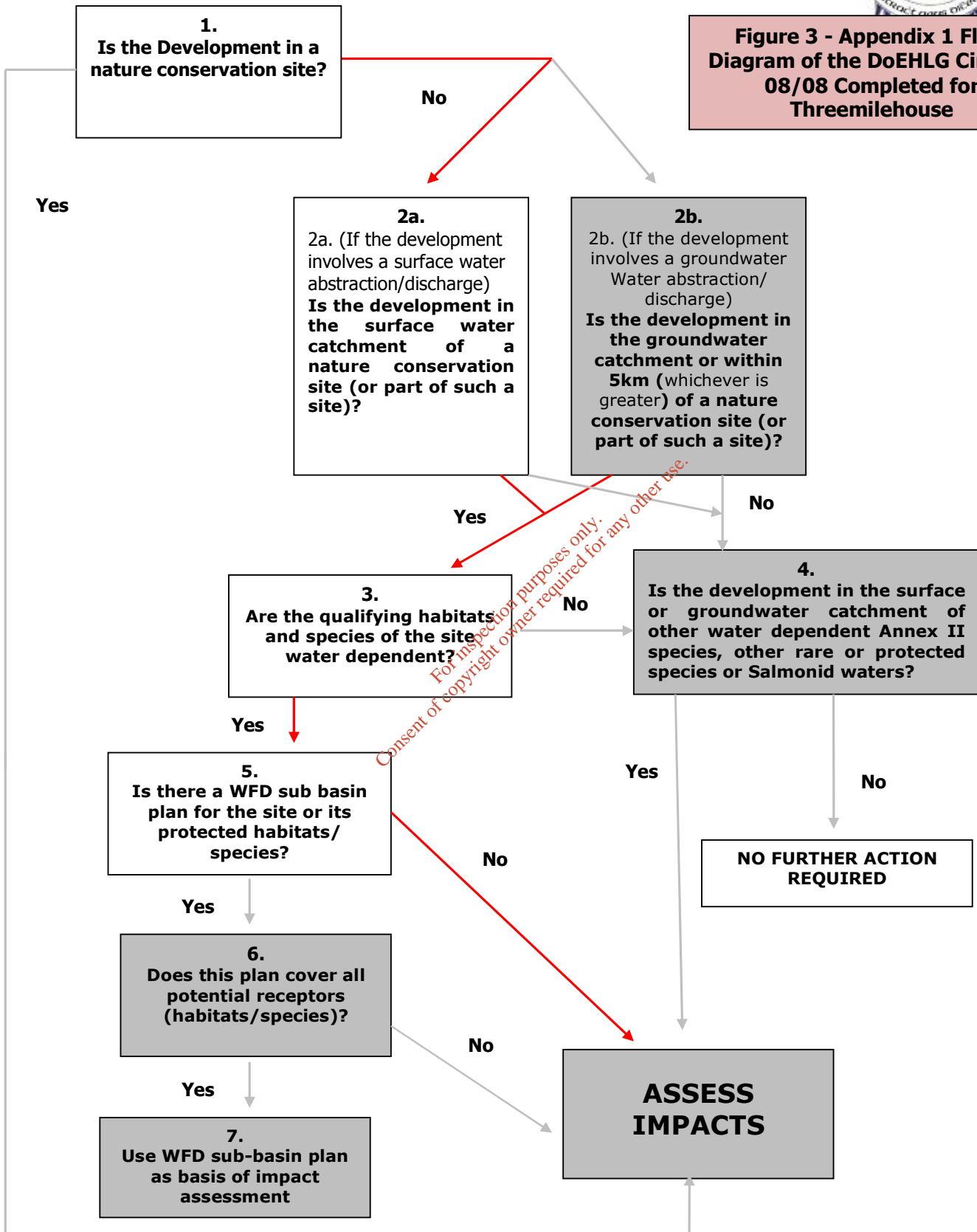
### 3.5 Conclusion

The discharge from the Threemilehouse WWTW will not impact on the conservation objectives or integrity of the Rosefield Lake and Woodland NHA and Corcreeghy Lake and Woodland NHA. Therefore, Stage 2 of the Appropriate Assessment process is not required for these NHA's. However, there is the potential for adverse impacts upon the qualifying interest and integrity of the Ulster Canal NHA. This potential impact will be considered further as part of this assessment.

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**Figure 3 - Appendix 1 Flow Diagram of the DoEHLG Circular 08/08 Completed for Threemilehouse**





## 4 Stage 2 Appropriate Assessment

### 4.1 Introduction

As identified in the Screening Assessment, the effluent discharge from the Threemilehouse WwTW has the potential to impact on the quality of waters supporting the qualifying interest for which the **Ulster Canal NHA** is designated i.e. rare species of flora.

Stage 2 of the Appropriate Assessment process will consider the impact of the discharges from the WwTW on the integrity of the Ulster Canal NHA with respect to the Conservation Objectives of the site. This involves acquiring information on the project (Threemilehouse WWTW Effluent Discharge), predicting the likely effects and their impacts on the conservation objectives and status of the European Site. Finally, mitigation measures will be identified (if deemed required) and assessed against the adverse effects the project is likely to cause.

In summary this section will assess the impact of the Threemilehouse discharge on the conservation objectives and integrity of the Ulster Canal NHA site.

### 4.2 Information on the Characteristics of the Site & Conservation Objectives

The qualifying interests and conservation objective of the Ulster Canal NHA are given in Section 3.3.2 of this report. Between White's Bridge and Carson's Bridge the Conawary River runs parallel to the Ulster Canal, the two stretches being separated only by a few yards of grassy bank. The canal is very dry at this point and is almost entirely colonized by grasses with some Iris beds and Meadowsweet (*Filipendula ulmaria*). The Conawary River is almost choked with *Mimulus guttatus* (Monkey Flower) along much of this stretch. In the more open water areas, the Flowering Rush (*Butomus umbellatus*) a rare species in Ireland and chiefly a northern species, grows in clumps and is locally abundant (Source NPWS). This is an important refuge for this scarce wetland species.

To the south of the waterways is a small area of beech wood with some ash. The sedge, *Carex remota*, is plentiful in the wetter ground here, and Sweet Woodruff (*Galium odoratum*) is also to be found.



The Conservation Objective of the NHA is to maintain the qualifying interests for this NHA at favourable conservation status. In this case the qualifying interests are several uncommon species of flora.

#### 4.3 Identification of Potential Impacts

The Threemilehouse Waste Water discharge has the potential to impact on the receiving water (Conawary River) and thereby have a negative impact on the rare species of flora associated with the designated site (Qualifying Interests). Diffuse pollution *e.g.* agricultural runoff may exacerbate this potential impact (Combination Effect).

Waste Water discharges are a major component of water pollution, contributing to oxygen demand and nutrient loading of the waterbodies, promoting of toxic condition resulting in decline of species diversity and abundance, increasing algal growth and generally leading to a destabilized aquatic ecosystem.

There is an extremely small possibility of extreme/unforeseen events (power failure) causing significant effects on the receiving water. However, by ensuring that the mitigation measures and conditions of the EPA Certificate conditions are enforced and the UWWT effluent standards maintained, it is considered that the risk of such events occurring is at the lowest possible level (negligible risk).

#### 4.4 Quality of Effluent Discharge

The Quality of discharges from the Threemilehouse WwTW is fully detailed as part of the Waste Water Discharge Certificate of Authorisation application. A brief summary is given below.

The Urban Waste Water Treatment Regulations 2001 (S.I. 254 of 2001) place a responsibility on local authorities providing treatment of urban waste water to monitor the discharges to surface and ground waters. The receiving water is not classified as a 'sensitive' water course under the Urban Waste Water Regulations 2001(S.I 254 of 2001). The minimum standards set out in the second schedule of the regulations are shown below:

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Parameters	Concentration	Minimum percentage of reduction <sup>(1)</sup>
BOD	25mg/l	70-90
COD	125mg/l	75
SS	35mg/l	90

(<sup>1</sup>) Reduction in relation to the load of the influent.

**BOD**

All results (2008-2009) showed compliance with Biochemical Oxygen Demand standards of less than 25mg/l apart from on the 28/05/09 when a concentration of 46mg/l was recorded. A total average percentage reduction of 94% was achieved over the above time period.

**COD**

All show compliance with the Urban Waste Water Regulations 2001 (S.I. No.254) concentration of 125mg/l apart from on the 28/05/08 when a COD concentration of 191mg/l was recorded. A total average percentage reduction of 89% was achieved over the above time period.

**SS**

All show compliance with the Urban Waste Water Regulations 2001 (S.I. No.254) concentration of 35mg/l. A total average percentage reduction of 97% was achieved over the above time period.

<b>Influent Concentration</b>				
	<b>BOD (mg/l)</b>	<b>COD (mg/l)</b>	<b>SS (mg/l)</b>	<b>Total P (mg/l) P</b>
Average Concentration	188	445	153.9	17

<b>Effluent Concentration</b>				
	<b>BOD (mg/l)</b>	<b>COD (mg/l)</b>	<b>SS (mg/l)</b>	<b>Total P (mg/l) P</b>
Average Concentration	11.8	53.6	5.6	4.6





With regard to Total P, a total average percentage reduction of 73% was achieved over the above time period Jan 2008 - October 2009.

From the above tables above it can be seen that at present the existing waste water treatment plant is meeting the required standards as set out in the Urban Waste Water Regulations 2001 (S.I 254 of 2001) for the limits set on BOD, COD and suspended solids.

#### 4.5 Existing River Water Quality

The Threemilehouse River flows into the Conawary River which is a Tributary of the River Blackwater. The receiving water is not identified as a "sensitive" waterway under the Urban Waste Water Treatment Regulations S.I. 254 of 2001. The same stretch of river is also not classified as a "salmonid river" under S.I. 293 of 1988. The river is located within the Neagh Bann IRBD. The River Blackwater is however designated Nutrient Sensitive from the confluence of the River Shambles to Newmills Bridge.

The overall River Water Framework Directive status for the Threemilehouse River is 1b, hence the water body is thought to be at risk of failing to meet good status in 2015.

Monaghan Co. Co. monitors the river both upstream and downstream of the discharge from the Waste Water Works. Results indicate relatively good water quality in the river, with an orthophosphate level recorded at 0.047 mg/l P, ammonia level of 0.06 mg/l NH<sub>3</sub>-N, BOD of <2 mg/l, TP of 0.09mg/l, TN of 3.31mg/l N and suspended solids of 6.7 mg/l. Dangerous substances concentrations were below detection level for 11 of the 19 parameters tested in October 2009. No levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

Results from the downstream monitoring site (aSW1(P)d) indicates generally good water quality with an orthophosphate level of 0.049 mg/l P, ammonia 0.09mg/l NH<sub>3</sub>-N, BOD of 2.1 mg/l, TP of 0.11 mg/l, TN of 3.69mg/l N and suspended solids levels of 11.44 mg/l. Dangerous substances concentrations were below detection level for 11 of the 19 parameters tested in October 2009. No levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

The nearest EPA biological monitoring stations are Conawary (Lower) (Station Number 1100) which is downstream of the discharge point and Conawary (Upper) (Station Number 0700) which is located



upstream of the discharge point. The baseline Q value at the Conawary (Lower) station was 3. The current MRP value is 40ug/l and the current Q Value (2003-2005) is 3. The standard to be achieved by 2007 was 3-4 or 50ug/l. This latter standard was achieved.

The baseline Q value at the Conawary (Upper) station was 4 (upstream of the discharge point). The current MRP value is 60ug/l and the current Q Value (2003-2005) is 2. The standard to be achieved by 2007 was 4 or 30ug/l. Neither standard were achieved. The suspected cause for this was agricultural pollution.

#### 4.6 Mitigation Measures

A number of mitigation measures are and will be put in place further to the issuing of the Wastewater Discharge Certificate of Authorisation from the EPA. These will ensure that significant effects on the Ulster Canal NHA will not occur. The key mitigation measure will be the continued treatment of sewage effluent to acceptable standards. This will ensure the maximum water quality output to the receiving water body and will avoid adverse effects on the Ulster Canal NHA. All conditions outlined in the Certificate of Authorisation will be implemented which will reduce the impact risk to negligible.

The above, in combination with the implementation of the Nitrates Directives and also the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2006 and farmers maintaining appropriate buffer zones from all watercourses as stipulated in the 2006 Regulations when applying fertilisers, slurry and other chemicals to land, will further improve the overall quality of the receiving water (chemical and biological) and assist in the primary challenge that Ireland faces over the next decade to achieve 'good water status' for all waters by 2015 as set out in the Water Framework Directive (WFD).

#### 4.7 Conclusion

This Appropriate Assessment concludes that the presence of the Threemilehouse WWTW may result in some potential impacts to the Ulster Canal NHA and its qualifying interest; however this risk can be eliminated through complying with the relevant standards and an ongoing monitoring and sampling programme, which are already in the operation of the WWTP.

In conclusion, once appropriate mitigation measures are implemented, the discharge is not predicted to have a significant negative impact on the integrity or conservation objectives of the Ulster Canal NHA.



# **THREEMILEHOUSE WASTE WATER TREATMENT WORKS**

## **WASTE WATER DISCHARGE CERTIFICATE OF AUTHORISATION**

### **Revised Non Technical Summary**

**Monaghan County Council  
County Offices  
The Glen  
Co. Monaghan**

**May 2010**



## **Threemilehouse - Revised Non Technical Summary**

Monaghan County Council is making an application to the Environmental Protection Agency (EPA) for a Waste Water Discharge Certificate of Authorisation for the Threemilehouse Waste Water Treatment Plant (WWTP) and 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 less than 500 PE) is 22nd December 2009. The WWTP at Threemilehouse falls under this category, having an agglomeration with a design PE of 250 and a current estimated PE of 133.

The waste water works serving the Threemilehouse village and the immediate environs comprises a network of gravity sewers, a pumping station, associated rising main and a Waste Water Treatment Works.

The waste water treatment plant, comprises settlement, followed by a rotating biological contactor and clarification by reed beds. Sludge from the Threemilehouse Waste Water Treatment plant is tankered to Monaghan Town WWTP for treatment. The plant is supervised/manned for approximately two hours Monday to Friday, giving a total of approximately ten hours a week.

The primary discharge of the waste water works is to the Threemilehouse River (at National Grid Reference 262216E, 330133N) in the townland of Drumguill, Co. Monaghan. The associated Waste Water Treatment Plant is located at 262203E 330148N also in the townland of Drumguill, Co. Monaghan.

The Threemilehouse River flows into the Conawary River which is a Tributary of the River Blackwater. The receiving water is not identified as a "sensitive" waterway under the Urban Waste Water Treatment Regulations S.I. 254 2001. The same stretch of river is also not classified as a "salmonid river" under S.I. 293 of 1988. The river is located within the Neagh Bann IRBD. The River Blackwater is however designated Nutrient Sensitive from the confluence of the River Shambles to Newmills Bridge.

The overall River Water Framework Directive status for the Threemilehouse River is 1b, hence the water body is thought to be at risk of failing to meet good status in 2015.

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The Threemilehouse WWTW is not in or on the boundary of an NHA, SAC or SPA. The discharge is not immediately downstream or upstream of a nature conservation site with water dependent habitats or species. The nearest conservation site is Ulster Canal Aghalisk NHA (Site Code 001611) which is approximately 3.2km downstream of the discharge point. The Corcreeghy Lake and Woodland NHA is approximately 1.2 km south as the crow flies and the Rosefield Lake and Woodland NHA is approximately 4km north east of the discharge point.

Taking cognisance of the DoEHLG Circular L8/08 "Water Services Investment and Rural Water Programmes - Protection of Natural Heritage and National Monuments", a pre-screening and Appropriate Assessment Screening was carried out to determine the likely impacts on the Ulster Canal Aghalisk NHA, Corcreeghy Lake and Woodland NHA and the Rosefield Lake and Woodland NHA of the Threemilehouse waste water discharge and to consider whether these effects are likely to be significant.

It was concluded at the AA Screening Stage that the discharge from the Threemilehouse WWTW will not have any significant adverse impacts on the conservation objectives or integrity of the Corcreeghy Lake and Woodland NHA and the Rosefield Lake and Woodland NHA and therefore, Stage 2 of the Appropriate Assessment process was not required with regard to these NHA's. However, there was the potential for adverse impacts upon the qualifying interest and integrity of the Ulster Canal NHA. Hence Stage 2 of the Appropriate Assessment process was completed to consider the impact of the discharge from the WwTW on the integrity of the Ulster Canal NHA with respect to the Conservation Objectives of the site. It was concluded that, once appropriate mitigation measures are implemented, the discharge from the Threemilehouse WWTW is not predicted to have a significant negative impact on the integrity or conservation objectives of the Ulster Canal NHA.

The treated effluent has an average BOD concentration of 11.8 mg/l and average suspended solids concentration of 5.6 mg/l and COD concentration of 53.6mg/l. Average concentrations of nutrients are as follows; orthophosphate 2.165 mg/l (P), average Total Phosphorus 4.6 mg/l (P) and Total Nitrogen 30.9 mg/l (N). At present the existing waste water treatment plant is fully meeting the required standards as set out in the Urban Waste Water Regulations 2001(S.I 254 of 2001) for the limits set on BOD, COD and suspended solids and levels of dangerous substances are below the limits specified in the Dangerous Substances Regulations.

Monaghan Co. Co. monitors the river both upstream and downstream of the discharge from the Waste Water Works. Results indicate relatively good water quality in the river, with an

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orthophosphate level recorded at 0.047 mg/l P, ammonia level of 0.06 mg/l NH<sub>3</sub>-N, BOD of <2 mg/l, TP of 0.09mg/l, TN of 3.31mg/l N and suspended solids of 6.7 mg/l. Dangerous substances concentrations were below detection level for 11 of the 19 parameters tested in October 2009. No levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

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The nearest EPA biological monitoring stations are Conawary (Lower) (Station Number 1100) which is downstream of the discharge point and Conawary (Upper) (Station Number 0700) which is located upstream of the discharge point. The baseline Q value at the Conawary (Lower) station was 3. The current MRP value is 40ug/l and the current Q Value (2003-2005) is 3. The standard to be achieved by 2007 was 3-4 or 50ug/l. This latter standard was achieved.

The baseline Q value at the Conawary (Upper) station was 4 (upstream of the discharge point). The current MRP value is 60ug/l and the current Q Value (2003-2005) is 2. The standard to be achieved by 2007 was 4 or 30ug/l. Neither standard were achieved. The suspected cause for this was agricultural pollution.

Due to lack of flow data on the receiving water, the assimilative capacity was unable to be calculated. However, water quality monitoring results (EPA and Monaghan County Council Data) would indicate that the discharges from the works are not having a significant detrimental impact on the receiving environment.