MINANE

Spring

Location of Infiltration Gallery & Treatment Plant
X: 174400
Y: 056850

Planning Application
No 506/5897

River Valley

Area under construction

WWTP Site Outlined in Green

SW01MINV
Primary Discharge Point
X: 174081
Y: 056519

SW02MINV
Secondary Discharge Point
X: 174490
Y: 056690

Spruce Grove

Septic Tank with Percolation Area

Minane Bridge

Church

School

10Kv

UND

CS

CR

0.84 0.76 7.43 0.91 0.46 7.0 9.4 3.03 3.7 8.91 16.4 0.40 0.34 8.7 12.6 0.26 1.27 2.82 2.5 6.6 0.51 0.31 0.28 13.3 0.80 2.81 3.8 0.72 0.36 0.24 0.90 2.97 1.49

Notes:

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Cork County Council
South Cork Division

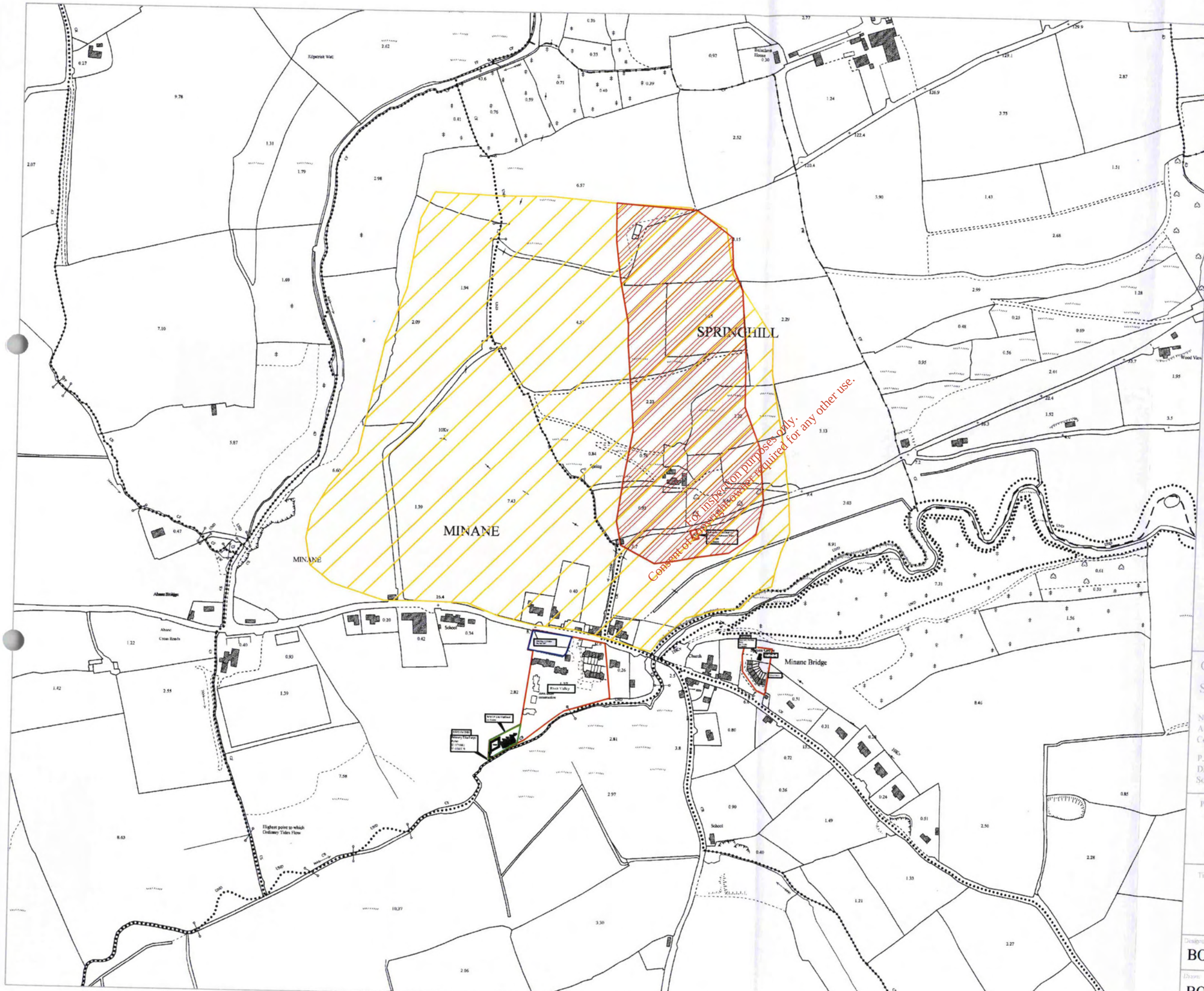
N. O'Keeffe, B.Eng., C.Eng., Eur.Ing., F.I.E.I., M.I.C.E.,
Acting County Engineer
County Hall, Cork.

P. Power
Director of Services
South Cork.

Project:
EPA LICENCE APPLICATION
Minane Bridge

Title:
Section G1
Infiltration Gallery

| Designed: | Checked: | Scale: | Drawing No. |
|---|---|---|---|
| BOL | BQ | 1:2000 | Map 11 |
| Drawn: | Approved: | Date: | |
| BOL | BQ | 11/03/11 | |

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Source Protection Zones as per 'Minane Bridge Water Supply - Groundwater Source Protection Zones' Kelly D & Wright G, Geological Survey of Ireland, 2002.

Orange Outline - Zone of Contribution
Red Outline - Inner Protection Zone

Cork County Council
South Cork Division

N. O'Keeffe, B.Eng., C.Eng., Eur.Ing., F.I.E.I., M.I.C.E.,
Acting County Engineer
County Hall, Cork.

P. Power
Director of Services
South Cork.

Project:
EPA LICENCE APPLICATION
Minane Bridge

Title:
Section G1
Zones of Contribution

| Designed: | Checked: | Scale: | Drawing No: |
|---|---|---|---|
| BOL | BQ | 1:5000 | Map 12 |
| Drawn: | Approved: | Date: | |
| BOL | BQ | 11/03/11 | |

# River Valley W.W.T.P. – Snag List

| | |
|---|---|
| 1 | The site on which the plant is located is overgrown and the waste material lying around the plant which should be removed. The site should be tidied up to provide safe access for the curator. A hardcore surface is required for vehicle parking. All vegetation within the perimeter of the treatment plant and close to circulation paths etc. for maintenance staff should be removed or cut back as it interferes with save movement of staff operating the plant. Paths should be provided where necessary. |
| 2 | Locks and keys should be provided for entrance gate and doors to control rooms to the Council's satisfaction. The same type of lock should be used throughout the facility so that it can be operated with a single key. (Note: total 6 no locks required.) |
| 3 | Some of the pipes within the waste water treatment plant are held in place with timber supports. All pipelines should be secured using galvanised steel supports and fittings as necessary. |
| 4 | The plywood covers (weighed down with cavity blocks) used as lids on the chambers of the treatment plant should be replaced with approved galvanised steel covers in accordance with the manufacturer's requirements. Galvanised steel covers are required for safety reasons and to minimise emission of odours. |
| 5 | A U.V. treatment unit should be installed upstream of the constructed wetland. |
| 6 | The inspection chamber near the discharge point should be rebuilt as directed on site. |
| 7 | The effluent outflow pipe should be fitted with a diffuser on the outlet, in order to maximise the mixing of effluent with the receiving river water. The effluent outflow pipe shall be fitted with a flow-meter and composite samplers at the discharge point following secondary treatment and before discharge to the wetlands or at a location agreed with the Licensing Authority. The flow meter shall be of the continuous recording and integrating type and composite sampler shall be flow proportionate. The sampler shall be capable of taking samples at a frequency to be agreed with the Licensing Authority making up to a composite sample once every 24 hours. This sampling and monitoring system shall be fully operational and in use at all times during which effluent is being discharged. |
| 8 | All pump sumps and other treatment plant chambers from which spillages might occur shall be fitted with 'high liquid level' alarms. The alarm condition shall be indicated by a signal on site and also, by a dial out modem, to the person responsible for the site.<br><br>Control panels shall incorporate hours run meters for each individual unit. Containment areas around pump sumps shall be put in place and any spillages diverted to the effluent treatment plant. An alternative energy power supply shall be installed to augment the main power source in the event of a power failure on site unless alternative arrangements are agreed with the Licensing Authority. |
| 9 | A standby storage facility for untreated effluent shall be installed to accommodate untreated wastewater in the event of a malfunction, or, breakdown of the effluent treatment. Details of this facility shall be agreed with the Licensing Authority. |

## Attachment G.1. Capital Investment Programme

# Cork County

*Water Services Investment Programme 2007 - 2009*

| Schemes at Construction | W/S | Est. Cost |
|---|---|---|
| **Cork North** | | |
| Mitchelstown Sewerage Scheme (Nutrient Removal) | S | 221,000 |
| **Cork South** | | |
| Ballyvourney/ Ballymakeery Sewerage Scheme | S | 3,049,000 |
| Cobh/ Midleton/ Carrigtwohill Water Supply Scheme | W | 10,135,000 |
| Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G) | S | 4,850,000 |
| Cork Water Strategy Study (G) | W | 941,000 |
| Kinsale Sewerage Scheme | S | 20,000,000 |
| Midleton Sewerage Scheme (Infiltration Reduction) (G) | S | 2,078,000 |
| | | 41,274,000 |
| **Schemes to start 2007** | | |
| **Cork North** | | |
| North Cork Grouped D80 Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin) | S | 5,150,000 |
| **Cork West** | | |
| Skibbereen Sewerage Scheme | S | 20,000,000 |
| | | 25,150,000 |
| **Schemes to start 2008** | | |
| **Cork North** | | |
| Mallow/ Ballyhea Regional Water Supply Scheme (H) | W | 8,652,000 |
| Mallow Sewerage Scheme (H) | S | 5,404,000 |
| **Cork South** | | |
| Ballincollig Sewerage Scheme (Nutrient Removal) (G) | S | [illegible] |
| Ballingeary Sewerage Scheme | S | 1,296,000 |
| Bandon Sewerage Scheme Stage 2 | S | 14,729,000 |
| City Environs (CASP) Strategic Study (G) | S | 153,000 |
| Cloghroe Sewerage Scheme (Upgrade) | S | 653,000 |
| Coachford Water Supply Scheme | W | 1,318,000 |
| Garrettstown Sewerage Scheme | S | 2,153,000 |
| Inniscarra Water Treatment Plant Extension Stage 1 | W | 2,678,000 |
| Little Island Sewerage Scheme (G) | S | 2,200,000 |
| **Cork West** | | |
| Bantry Sewerage Scheme | S | 7,148,000 |
| Dunmanway Sewerage Scheme | S | 2,153,000 |
| Leap/ Baltimore Water Supply Scheme | W | 6,365,000 |
| Schull Water Supply Scheme | W | 5,253,000 |
| | | 61,137,000 |
| **Schemes to start 2009** | | |
| **Cork North** | | |
| Banteer/Dromahane Regional Water Supply Scheme | W | 1,576,000 |
| Conna Regional Water Supply Scheme Extension | W | 2,627,000 |
| Cork NE Water Supply Scheme | W | 4,326,000 |
| Cork NW Regional Water Supply Scheme | W | 6,046,000 |
| Millstreet Wastewater Treatment Plant (Upgrade) | S | 1,628,000 |

| Schemes to start 2009 contd. | W/S | Est. Cost |
|---|---|---|
| **Cork South** | | |
| Ballincollig Sewerage Scheme (Upgrade) (G) | S | 22,248,000 |
| Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS) | S | 73,542,000 |
| Shannagarry/ Garrykennedy/ Ballycotton Sewerage Scheme | S | 3,760,000 |
| Youghal Sewerage Scheme | S | 14,420,000 |
| **Cork West** | | |
| Ballydehob Sewerage Scheme | S | 653,000 |
| Bantry Water Supply Scheme | W | 14,935,000 |
| Clonakilty Sewerage Scheme (Plant Capacity Increase) | S | 3,677,000 |
| Courtmacsherry/ Timoleague Sewerage Scheme | S | 2,472,000 |
| Dunmanway Regional Water Supply Scheme Stage 1 | W | 12,669,000 |
| | | 164,629,000 |
| **Serviced Land Initiative** | | |
| **Cork North** | | |
| Ballydaugh Water Supply Scheme | W | 139,000 |
| Ballyhooley Improvement Scheme | W/S | 139,000 |
| Brigh Fathgorta Sewerage Scheme | S | 406,000 |
| Bweeng Water Supply Scheme | W | 115,000 |
| Churchtown Sewerage Scheme (incl. Water) | W/S | 543,000 |
| Glanduane Sewage Treatment Plant | S | 417,000 |
| Knocknagour Sewerage Scheme | S | 180,000 |
| Pike Road Sewerage Scheme (incl. Water) | W/S | 2,080,000 |
| Rathcormac Sewerage Scheme (incl. Water) | W/S | 835,000 |
| Spa Glen Sewerage Scheme | S | 736,000 |
| Uplands Fermoy Sewerage Scheme (incl. Water) | W/S | 1,174,000 |
| Watergrasshill Water Supply Scheme (incl. Sewerage) (G) | W/S | 4,151,000 |
| **Cork South** | | |
| Ballincollig Sewerage Scheme (Barry's Rd Foul and Storm Drainage) (G) | S | 1,164,000 |
| Belgooley Water Supply Scheme (incl. Sewerage) | W/S | 2,913,000 |
| Blarney Water Supply Scheme (Ext to Station Rd) (G) | W | 416,000 |
| Carrigtwohill Sewerage Scheme (Treatment and Storm Drain) (G) | S | 7,632,000 |
| Castlemartyr Wastewater Treatment Plant Extension | S | 1,200,000 |
| Crookstown Sewerage Scheme (incl. Water) | W/S | 1,200,000 |
| Dripsey Water Supply Scheme (incl. Sewerage) | W/S | 1,112,000 |
| Glounthane Sewerage Scheme (G) | S | 1,576,000 |
| Innishannon Sewerage Scheme | S | 277,000 |
| Innishannon Wastewater Treatment Plant | S | 694,000 |
| Kerrypike Sewerage Scheme | S | 832,000 |
| Kerrypike Water Supply Scheme | W | 416,000 |
| Kilbrogh Wastewater Treatment Plant Extension | S | 1,200,000 |
| Kilbrogh Water Supply Scheme (includes Sewerage) | W/S | 486,000 |
| Kilbrin Sewerage Scheme | S | 420,000 |
| Kinsalebeg Sewerage Scheme | S | 694,000 |
| Midleton Wastewater Treatment Plant Extension | S | 4,000,000 |

# Cork County contd.

## Water Services Investment Programme 2007 - 2009

| Serviced Land Initiative contd. | W/S | Est. Cost |
|---|---|---|
| **Cork South contd.** | | |
| Mogeely Castlemartyr & Ladysbridge Water Supply Scheme | W | 2,566,000 |
| North Cobh Sewerage Scheme (G) | S | 3,193,000 |
| Riverstick Water Supply Scheme (Incl. Sewerage) | W/S | 525,000 |
| Rochestown Water Supply Scheme | W | 2,700,000 |
| Saleen Sewerage Scheme | S | 1,051,000 |
| Youghal Water Supply Scheme | W | 2,300,000 |
| **Cork West** | | |
| Castletownshend Sewerage Scheme | S | 1,576,000 |
| | | 80,797,000 |
| **Rural Towns & Villages Initiative** | | |
| **Cork North** | | |
| Buttevant Sewerage Scheme (Collection System) | S | 2,446,000 |
| Doneraile Sewerage Scheme (Collection System) | S | 1,738,000 |
| **Cork South** | | |
| Innishannon (Ballinadee/ Ballinspittle/ Garretstown) Water Supply Scheme | W | 6,726,000 |
| **Cork West** | | |
| Ballydehob Sewerage Scheme | S | 2,153,000 |
| Ballingeary Sewerage Scheme | S | 3,162,000 |
| Castletownbere Sewerage Scheme | S | 5,202,000 |
| Schull Sewerage Scheme | S | 3,555,000 |
| | | 24,556,000 |
| **Schemes to Advance through Planning** | | |
| **Cork North** | | |
| Mitchelstown North Gateway Water Supply Scheme | W | 3,162,000 |
| Mitchelstown Sewerage Scheme | S | 3,000,000 |
| Newmarket Sewerage Scheme | S | 3,162,000 |

| Schemes to Advance through Planning cont. | W/S | Est. Cost |
|---|---|---|
| **Cork South** | | |
| Carrigtwohill Sewerage Scheme (G) | S | 20,000,000 |
| Cork Sludge Management (G) | S | 14,420,000 |
| Cork Water Supply Scheme (Storage - Mount Envis, Ballincollig & Chetwind) (G) | W | 8,500,000 |
| Inniscarra Water Treatment Plant (Sludge Treatment) (G) | W | 5,356,000 |
| Macroom Sewerage Scheme | S | 5,150,000 |
| Minane Bridge Water Supply Scheme | W | 1,421,000 |
| **Cork West** | | |
| Bantry Regional Water Supply Scheme (Distribution) | W | 9,455,000 |
| Cape Clear Water Supply Scheme | W | 1,679,000 |
| Castletownbere Regional Water Supply Scheme | W | 8,405,000 |
| Glengarriff Sewerage Scheme | S | 2,500,000 |
| Roscarberry/Owenshincha Sewerage Scheme | S | 1,576,000 |
| Skibbereen Regional Water Supply Scheme Stage 4 | W | 7,880,000 |
| | | 95,646,000 |
| **Water Conservation Allocation** | | 12,206,000 |
| **Asset Management Study** | | 300,000 |
| **South Western River Basin District (WFD) Project[1]** | | 9,400,000 |
| **Programme Total** | | **485,489,000** |

[1] This project is being led by Cork County Council on behalf of other authorities in the River Basin District

(H) Refers to a Hub as designated in the National Spatial Strategy

(G) Refers to a Gateway as designated in the National Spatial Strategy

# River Valley W.W.T.P. – Snag List

| | |
|---|---|
| 1 | The site on which the plant is located is overgrown and the waste material lying around the plant which should be removed. The site should be tidied up to provide safe access for the curator. A hardcore surface is required for vehicle parking. All vegetation within the perimeter of the treatment plant and close to circulation paths etc. for maintenance staff should be removed or cut back as it interferes with save movement of staff operating the plant. Paths should be provided where necessary. |
| 2 | Locks and keys should be provided for entrance gate and doors to control rooms to the Council's satisfaction. The same type of lock should be used throughout the facility so that it can be operated with a single key. (Note: total 6 no locks required.) |
| 3 | Some of the pipes within the waste water treatment plant are held in place with timber supports. All pipelines should be secured using galvanised steel supports and fittings as necessary. |
| 4 | The plywood covers (weighed down with cavity blocks) used as lids on the chambers of the treatment plant should be replaced with approved galvanised steel covers in accordance with the manufacturer's requirements. Galvanised steel covers are required for safety reasons and to minimise emission of odours. |
| 5 | A U.V. treatment unit should be installed upstream of the constructed wetland. |
| 6 | The inspection chamber near the discharge point should be rebuilt as directed on site. |
| 7 | The effluent outflow pipe should be fitted with a diffuser on the outlet, in order to maximise the mixing of effluent with the receiving river water. The effluent outflow pipe shall be fitted with a flow-meter and composite sampler at the discharge point following secondary treatment and before discharge to the wetlands or at a location agreed with the Licensing Authority. The flow meter shall be of the continuous recording and integrating type and composite sampler shall be flow proportionate. The sampler shall be capable of taking samples at a frequency to be agreed with the Licensing Authority making up to a composite sample once every 24 hours. This sampling and monitoring system shall be fully operational and in use at all times during which effluent is being discharged. |
| 8 | All pump sumps and other treatment plant chambers from which spillages might occur shall be fitted with 'high liquid level' alarms. The alarm condition shall be indicated by a signal on site and also, by a dial out modem, to the person responsible for the site.<br><br>Control panels shall incorporate hours run meters for each individual unit. Containment areas around pump sumps shall be put in place and any spillages diverted to the effluent treatment plant. An alternative energy power supply shall be installed to augment the main power source in the event of a power failure on site unless alternative arrangements are agreed with the Licensing Authority. |
| 9 | A standby storage facility for untreated effluent shall be installed to accommodate untreated wastewater in the event of a malfunction, or, breakdown of the effluent treatment. Details of this facility shall be agreed with the Licensing Authority. |

**CORK COUNTY COUNCIL**
**Comhairle Contae Chorcaí**
**Water Services South**
**County Hall**
**Carrigrohane Road**
**Cork**

# SUBMISSION TO ACHIEVE COMPLIANCE WITH REGULATION 24 OF THE WASTE WATER DISCHARGE (AUTHORISATION) REGULATIONS 2007 FOR Minane Bridge (A0356-01)



**March 2011**

**QUESTION 1 "ASSESS THE LIKELIHOOD OF SIGNIFICANT EFFECTS OF THE WASTE WATER DISCHARGE ON THE RELEVANT EUROPEAN SITES..."**

## 1.0 Background

The Village of Minane Bridge is situated approximately 20km south of Cork City and 7km south of Carrigaline, on the main route to the coastal resorts of Robert's Cove and Rocky Bay. This settlement is a small centre for the rural hinterland.

Cork County Council South is the Water Services Authority serving Minane Bridge. The agglomeration boundary can be seen at Attachment A.1 of the revised certificate application. The population of the Minane Bridge agglomeration is approximately 150.

There are two separate collection/treatment systems in place in Minane Bridge. There is a waste water treatment plant within River Valley Housing Estate which was taken in charge by Cork County Council on 22nd November 2010. There is a septic tank serving Spruce Grove, which made up the original application in 2009. Please see Attachment A1 which highlights this information.



A gravity waste water collection system serves River Valley. There are no pumping stations within the collection system. There are no secondary discharges from the collection system. There are no storm overflows from the collection system. All waste water collected drains to the waste water treatment plant to the rear of the estate.

The waste water treatment plant at River Valley consists of a two stage extended biological filtration treatment process which is linked to a reed bed filtration system which ultimately leads to the primary discharge point. This system provides tertiary treatment. Full details on the operation of the treatment plant are provided in Section C of the revised application form. This details primary settlement, biological treatment and final settlement processes.

A gravity waste water collection system serves Spruce Grove. There are no pumping stations within the collection system. There are no secondary discharges from the collection system. There are no storm overflows from the collection system. All the waste water collected drains to the septic tank to the rear of the estate.

The septic tank provides primary treatment only. The primary treatment is achieved by settlement which according to the National Urban Waste Water Study (NUWWS) reduces BOD loading by approximately 30% and Suspended Solids by approximately 50%.

All treated effluent from the septic tank drains by gravity to a nearby soak pit where it discharges directly to groundwater. The soak pit is located approximately 75m from the Minane River. The Minane River flows into Ringabella Creek, which is located 5.0km outside the mouth of Cork Harbour (Roche's Point).

The agglomeration is not within or is not nearby any Natura 2000 site. The closest Natura 2000 site is Cork Harbour SPA. Minane Bridge is approximately 5km from Ringabella Creek. Ringabella Creek is approximately a further 5km from Roche's Point, the mouth to Cork Harbour.

## 1.1 Habitats Directive Assessment

The Habitats Directive 92/43/EEC is transposed into Irish Law under the European Union (Natural Habitats) Regulations SI 94/1997 (The Regulations). The Regulations require the assessment of all projects or plans that have the potential to impact on nature conservation sites, including SPAs. This assessment is referred to as a Habitats Directive Assessment. The purpose of a Habitats Directive Assessment is to identify potential impacts on nature conservation sites arising from a project or plan and to predict the effect of such impacts on the integrity of the sites.



The European Union has provided guidance on Habitats Directive Assessment which identifies four stages in the assessment process as follows:

1. *Stage One - Screening*
   Screening identifies the likely impacts on a Natura 2000 site of a project or plan, whether alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant.

2. *Stage Two – Appropriate Assessment*
   This assessment considers the impact on the integrity of the Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, the Appropriate Assessment considers the potential mitigation of those impacts.

3. *Stage Three - Assessment of Alternative Solutions*
   This assessment examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.

4. *Stage Four - Assessment Where No Alternative Solutions Exist and Where Adverse Impacts Remain*
   This assessment considers compensatory measures, where in the light of an assessment of imperative reasons of overriding public interest, it is deemed that the project or plan should proceed.

This Submission brings together all of the information necessary to make determination as to whether or not there are likely to be significant impacts arising from the discharges from the Minane Bridge Agglomeration on the Minane Bridge Marsh proposed Natural Heritage Area (pNHA) and Cork Harbour SPA. A flow diagram in accordance with Appendix 1 of Circular Letter L8/08 is included at Appendix 1 of this Submission.

## 1.2 Stage One - Screening

Screening identifies the likely impacts on a Natura 2000 site of a project or plan, whether alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant. Screening comprises of 5 steps as follows:

1. *Step One – Description of Project or Plan*
   Provide a description of the project or plan and other projects or plans that, alone or in combination, have the potential to have significant effects on Natura 2000 sites within the potential impact zone.

2. *Step Two – Identification of Impacted Natura 2000 Sites*
   Identify Natura 2000 sites which may be impacted by the project or plan, and compile information on their qualifying interests and conservation objectives.

3. *Step Three – Assessment Criteria*
   Determine whether the project or plan needs to be screened for potential impacts on Natura 2000 sites.

4. *Step Four – Assessment of Likely Effects*
   Carry out an assessment of likely effects – direct, indirect and cumulative – undertaken on the basis of available information as a desk study or field survey or primary research as necessary.

5. *Step Five – Significance of Effects*
   Assess the significance of any such effects on the Natura 2000 sites within the impact zone.

Steps 1 to 5 are presented as an Appropriate Assessment Screening Matrix below. This assessment has been prepared in accordance with the following guidance:

- European Commission (2000) Managing Natura 2000 sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC;
- European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC;
- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Environment, Heritage and Local Government, 2009.

| Step One - Description of Project or Plan | |
|---|---|
| Location | Minane Bridge, Co Cork. |
| Description of the key components of the project | Minane Bridge Agglomeration is served by a Waste Water Treatment Plant at River Valley Housing Estate and Septic Tank at Spruce Grove Housing Estate. River Valley WWTP provides tertiary treatment by means of primary settlement, a two stage biological treatment process, final settlement and reed bed filtration, and discharges to surface water. The estimated daily discharge from the WWTP is 23m3/day.<br><br>Spruce Grove Septic Tank provides primary treatment. Treated effluent discharges to groundwater through a percolation area located 75m from the Minane River. The septic tank provides primary treatment only which according to the National Urban Waste Water Study (NUWWS) reduces the BOD load by approximately 30% and the Suspended Solids load by approximately 50%. On average approx. 6cu.m./day of effluent is discharged to the percolation area. |
| Distance from designated sites in potential impact zone | The Minane River runs in an easterly direction downstream of Minane Bridge Village for approximately 5km before reaching coastal waters at Ringabella Creek. The receiving waters at Ringabella Creek are not deemed sensitive. Ringabella Creek is approximately 2.5km from Fountainstown Beach which is designated bathing waters.<br><br>Fountainstown Beach is presently monitored in accordance with the Directive EU 76/160/EEC and the Quality of Bathing Water Regulations 1992 (SI 155/1992) and amendments. From the 2011 bathing season onwards (mid May to 31st August annually) the monitoring and reporting of bathing waters will commence under new legislation 'The Bathing Water Quality Regulations 2008 (SI No.79 of 2008 Directive 2006/7/EC)'.<br><br>Ringabella Creek is located approximately 5km outside the mouth of Cork Harbour (Roche's Point). The discharge point at Minane Bridge is approx. 10 Km distance from the mouth to Cork Harbour which contains a Special Protected Area (SPA).<br><br>The primary discharge point is located at the downstream end of a proposed Natural Heritage Area (pNHA) called Minane Bridge Marsh – site code 001966. The location of the pNHA and primary discharge point is highlighted in Attachment Map 10 of the revised application form. |

| Step Two – Identification of Impacted Natura 2000 Sites[1] | |
|---|---|
| Name | Minane Bridge Marsh Proposed Natural Heritage Area |
| Site Code | 001966 |
| Site Description | The Minane Bridge Marsh pNHA<br><br>This is not a Natura 2000 Site, however is a proposed Natural Heritage Area, and has been noted as such.<br><br>Discharge from the River Valley WWTP occurs at the downstream end of the pNHA.<br><br>Spruce Grove Septic Tank discharges via a percolation area to groundwater, downstream of the pNHA and does not affect it.<br><br>No bird count data was available for Minane Marsh. Data available in relation to Ringabella Creek forms Appendix II of this document and Attachment Section F1 of the revised Application Form (March 2011) |
| Qualifying Interests of Minane Bridge Marsh pNHA | None |
| Other Notable Features of Minane Bridge pNHA. | None |
| Conservation Objectives | To avoid deterioration of the habitats of and qualifying species and species of special conservation interest, or significant disturbance to these species thus ensuring that the integrity of the site is maintained.<br><br>To ensure for the qualifying species and species of special conservation interest that the following are maintained in the long-term:<br>• The population of the species as a viable component of the site;<br>• The distribution and extent of habitats supporting the species;<br>• The structure, function and supporting processes of habitats supporting the species.<br>*Source – National Parks and Wildlife Service.* |



[1] Natura 2000 sites within the potential impact zone of the proposed development have been identified in accordance with guidance provided in the NPWS circular L8/08.

| | |
|---|---|
| Name | Cork Harbour Special Protection Area |
| Site Code | 4130 |
| Site Description | The Cork Harbour SPA is an estuarine complex which is primarily comprised of intertidal habitats, mainly mudflats as well as some other coastal and marine habitats. These habitats support very high numbers of wintering waterfowl that feed on the macro invertebrates inhabiting the mudflats. The Harbour regularly supports in excess of 20,000 wintering birds, making it an internationally important site and the fifth most important wintering waterfowl site in the country.<br><br>Discharges from the Minane Bridge Agglomeration occur approx 10km outside of Cork Harbour SPA. Any impacts on this SPA site from discharges at Minane Bridge are considered negligible. |
| Qualifying Interests of Cork Harbour SPA. | Internationally important numbers of Black-tailed Godwit and Redshank; Nationally important numbers of Cormorant, Shelduck, Oystercatcher, Golden Plover, Lapwing, Dunlin and Curlew; 20,000 wintering water birds. *Source – National Parks and Wildlife Service* |
| Other Notable Features of Cork Harbour SPA | Little Grebe, Great-crested Grebe, Grey Heron, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Grey Plover, Black-headed Gull, Common Gull, Lesser Black-backed Gull, wetland and water birds. Source – *National Parks and Wildlife Service.*<br>See Appendix III |
| Conservation Objectives | To avoid deterioration of the habitats of the qualifying species and species of special conservation interest, or significant disturbance to these species, thus ensuring that the integrity of the site is maintained.<br><br>To ensure for the qualifying species and species of special conservation interest that the following are maintained in the long-term.<br><br>○ the population of the species as a viable component of the site;<br>○ the distribution and extent of habitats supporting the species;<br>○ the structure, function and supporting processes of habitats supporting the species;<br><br>*Source – National Parks and Wildlife Service* |

| Step Three – Assessment Criteria | |
|---|---|
| Describe the elements of the project likely to give rise to impacts on the Natura 2000 site. | 1. River Valley WWTP;<br>2. Spruce Grove Septic Tank. |
| Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site taking into account the following:<br>• Size and scale<br>• Land-take<br>• Distance from the Natura 2000 site or key features of the site:<br>• Resource requirements (water abstraction etc.)<br>• Emissions (disposal to land, water or air)<br>• Excavation Requirements<br>• Transportation Requirements<br>• Duration of construction, operation, decommissioning<br>• Other. | The agglomeration has a total population equivalent of 161. The average daily output of the WWTP is estimated at 23cu. m/day. The maximum capacity of the WWTP is 50cu. m/day so at present the WWTP has not reached 50% capacity. The Septic Tank at Spruce Grove receives approx 6cu.m/day. Minane Bridge is located approx 10km outside the mouth of Cork Harbour which contains an SPA. Any impacts from the discharges at Minane Bridge on Cork Harbour SPA are deemed negligible.<br>Discharges could give rise to elevated nutrients entering the Minane River on the eastern end of the Minane Bridge Marsh proposed Natural Heritage Area (pNHA). The primary discharge point for the agglomeration discharges on the northern side of the Minane River. The Minane River forms a northern boundary to the Minane Bridge Marsh (please see Attachment Map 10 in the revised certificate application for location details).<br>Increased nutrient levels may impact on the ecology of an area by changing the composition of floral communities and reducing the ability of less robust plants to survive. Increased nutrient levels may also result in increasing the invertebrate populations in the estuary, thereby increasing bird population levels.<br>The combined impact of the above-listed WWTP (primary discharge) on the proposed Natural Heritage Area may require an ecological assessment of the pNHA. This assessment has not been undertaken in the preparation of this Submission. However, consideration is currently being given by Cork County Council to such an assessment.<br>The primary discharge point is located upstream of the Minane Bridge Infiltration Gallery. The infiltration gallery can take up to approx. 98cu. m/day from groundwaters. The annual output of the infiltration gallery is approximately 25cu.m/day. A study of the infiltration gallery carried out by Geological Survey of Ireland note that 'water (is) drawn in from the stream, which lies just over 100metres south of the gallery. Given the small hydraulic head which the gallery develops, this is probably a negligible source of water to the gallery. This seems to be confirmed by the hydrochemistry of the water'. Furthermore the report adds: 'Subsurface flow from the hillside of the north of the gallery, plus shallow subsurface flow ('interflow') and surface runoff infiltrates into the ground at the foot of the slope. Since the gallery is orientated at right angles to the direction of this flow, it is optimally placed to intercept it. Hence it is expected that this source contributes most of the flow into the gallery'. The report later states that 'infiltration from the stream (Minane River) to the gallery is probably negligible'. The revised certificate application detailed the zones of contribution and inner protection zone for the infiltration gallery.<br>Cork County Council took the River Valley WWTP in charge on 22nd November 2010. A proposed programme of improvement works for the WWTP based on items identified and listed by Cork County Council forms Attachment G3 of the revised application. |

| | |
|---|---|
| Describe any likely changes to the site arising as a result of:<br>• Reduction in habitat area<br>• Disturbance to key species<br>• Habitat or species fragmentation<br>• Reduction in species density<br>• Changes in key indicators of conservation value (water quality etc)<br>• Climate Change | **Reduction in habitat area**<br>Not significant.<br><br>**Disturbance to key species**<br>The operation of the Septic Tank does not cause any disturbance to any Natura Sites. The WWTP is located at the downstream end of Minane Bridge Marsh (pNHA) however the treatment process employed at the WWTP provides tertiary treatment. There are no key species listed at the pNHA.<br><br>**Habitat or species fragmentation**<br>No habitat fragmentation has been caused as a result of the operation of this facility.<br><br>**Reduction in species density**<br>No significant impacts are evident or predicted on species for which the SPA is designated.<br><br>**Changes in key indicators of conservation value – e.g. water quality**<br>The status of the section of the Minane River is "moderate". There has been no deterioration downstream of the discharges in this respect.<br><br>**Climate Change**<br>Not significant. |
| Describe any likely impacts on the Natura 2000 site as a whole in terms of:<br>• Interference with the key relationships that define the structure of the site<br>• Interference with key relationships that define the function of the site | **Interference with the key relationships that define the structure of the site**<br>The structure of the SPA is not impacted by the operation of this facility.<br><br>**Interference with key relationships that define the function of the site**<br>The function of the SPA is not impacted by the operation of this facility. |
| Describe from the above those elements of the project of 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. | Cork County Council took the WWTP in charge in November 2010. A programme of sampling is due to commence on the primary discharge point in 2011 with 6 samples to be taken and tested. These results will give a more accurate representation of the likely impacts of the WWTP. A screening programme has not been carried out to date on the plant under the Dangerous Substances Directive. This maybe necessary in order to assess the full impact of the WWTP. In addition a proposed programme of improvement works has been identified by Cork County Council (and forms Attachment G3 of the revised application form) and work should begin in remedying any defects noted, and upgrading the plant in 2011. |

| Step Four – Assessment of Likely Effects | |
|---|---|
| Name of project or plan | Minane Bridge Agglomeration |
| Name and location of Natura 2000 site | Cork Harbour SPA (over 10km from the discharge point)<br>Primary Discharge Point within proposed Natural Heritage Area pNHA of Minane Bridge Marsh. |
| Description of the project or plan | Minane Bridge Agglomeration is served by a waste water treatment plant which provides tertiary treatment and discharges to Minane River, and a septic tank which provides primary treatment only which discharges to groundwater approx 75m from the Minane River. |
| Is the project or plan directly connected with or necessary to the management of the site (provide details)? | No |
| Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site. | Discharges from the River Valley WWTP could give rise to elevated nutrients within the pNHA (not a Natura 200 site). Increased nutrient levels may impact on the ecology of an area by changing the composition of floral communities and reducing the ability of less robust plants to survive. Increased nutrient levels may also result in increasing the invertebrate populations in the estuary, thereby increasing bird population levels. A programme of sampling is due to commence on the primary discharge point in 2011 with 6 samples to be taken and tested. These results will give a more accurate picture of likely affects. |



| Step Five – Significance of Effects | |
|---|---|
| Explain why these effects are not considered significant. | • Small quantities of effluent (max PE 161 current PE 133);<br>• 20% effluent discharges to groundwater; 80% effluent undergoes tertiary treatment process.<br>• Dilution and assimilative capacities of Minane River and Cork Harbour;<br>• Minane River has ongoing "moderate" status;<br>• No significant impacts are evident or predicted on species for which the pNHA is designated. Negligible impacts of Cork SPA which is over 10km away. No Natura 2000 site in area. |
| List of agencies consulted: provide contact name and telephone or email address | • National Parks and Wildlife Service;<br>• Birdwatch Ireland. |
| Response to consultation | • Draft Conservation Objectives and a copy of Intention to Designate Cork Harbour as SPA was received previously from the NPWS;<br>• Bird count data was received previously from Birdwatch Ireland. |

| Data collected to carry out the assessment | | | |
|---|---|---|---|
| **Who carried out the assessment** | **Sources of data** | **Level of assessment completed** | **Where can the full results of the assessment be accessed and viewed** |
| Brendan O' Leary, Assistant Engineer, Water Services Operations, Cork County Council | Nation Parks & Wildlife Service Website; Birdwatch Ireland Website. Geological Survey of Ireland | Desktop review of cited data. | This Submission. |

## QUESTION 2 "CONFIRM THE DESIGN CAPACITY OF THE WASTE WATER TREATMENT PLANT ..."

The waste water treatment plant serving River Valley has a capacity of 250PE. It currently serves 28 houses with an estimated PE of 105. In addition conditional planning has been granted on a nearby site for 8 dwellings which could increase loading by an estimated 28PE – bringing a total possible future PE loading of 133 (53% of total capacity). This loading would still be below the capacity of the plant, so the plant would not be overloaded.

The septic tank was designed to treat waste water arising from 8 no. dwellings – i.e. a PE of 28. The current PE treated by the septic tank is estimated to be 28. The septic tank is therefore at capacity and not overloaded.

The current PE includes the maximum average weekly loading for the agglomeration having taken account of local festivals, peak holiday seasons, etc.

**QUESTION 3 "PROVIDE A REVISED DRAWING CLEARLY DETAILING THE BOUNDARY OF THE AGGLOMERATION..."**

Attachment Map 02 "Section A1 – Non-Technical Summary – Minane Bridge Location Map" has been revised to include all areas serviced by the sewer network as well as the newly taken in charge waste water treatment plant and existing septic tank. The revised drawing forms part of the revised Waste water application March 2011. The revised application details the treatment processes used at the treatment plant as well as proposed improvement programme of works to upgrade the plant.

# APPENDIX I

## Minane Bridge Flow Chart – A0356-01

Is the development in a nature conservation site – **NO**

Is the development in the surface water catchment of a nature conservation site (or part of such a site) – **NO**

Is the development in the surface groundwater catchment of other water dependent Annex II species, other rare or protected species or salmonid waters? – **NO**

**No further action required**

# APPENDIX II

**Appendix II – Ringabella Creek – Bird Numbers**

**Irish Wetland Bird Survey: Waterbird monitoring in Ireland**

| **Location:** | Ringabella Creek |
|---|---|
| | |
| **Year** | **Bird Numbers** |
| 2001/02 | 1,377 |
| 2002/03 | 801 |
| 2003/04 | 976 |
| 2004/05 | 1,111 |
| 2005/06 | 954 |
| 2006/07 | 1,498 |
| 2007/08 | 1,195 |

| **Species occuring in significant numbers** |
|---|
| Black Tailed Godwit |

# APPENDIX III

## SITE SYNOPSIS

**Site Name:** Minane Bridge Marsh proposed Natural Heritage Area
**Site Code:** 001966

Minane Bridge Marsh **pNHA 1966** is located to the south west of Minane Bridge village. The area is listed for its unusual vegetation type which throughout much of the country has been drained. In November 2010 Cork County Council published the Carrigaline Electoral Area Local Area Plan Review. Within this review Cork County Council recognise that 'the village of Minane Bridge adjoins this environmental designation (the proposed Natural Heritage Area and)....any further expansion westwards will impact on the intactness of the designation'. Within the Local Area Plan Review (LAP Review) Cork County Council outlined the methodology behind carrying out various environmental studies while also underlining their commitments to environmental protection.

A habitat study has not been carried out on the Minane Bridge Marsh proposed Natural Heritage Area. No information is available at present detailing the species, flora or fauna specific to this area. It is not deemed a bird area of international or national importance. Ringabella Creek, 5km downstream of Minane Bridge is designated a nationally important site supporting > 1,000 waterbirds. The black tailed godwit has been spotted in nationally important numbers at Ringabella Creek. There has been no detrimental effect to this species numbers as a result of discharges from Minane Bridge.

## SITE SYNOPSIS

**SITE NAME: CORK HARBOUR SPA**

**SITE CODE: 004030**

Cork Harbour is a large, sheltered bay system, with several river estuaries – principally those of the Rivers Lee, Douglas and Owenacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas Estuary, inner Lough Mahon, Lough Beg, Whitegate Bay and the Rostellan inlet.

Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nepthys hombergi, Nereis diversicolor* and *Corophium volutator.* Green algae species occur on the flats, especially *Ulva lactua* and *Enteromorpha* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the North Channel. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Salt marsh species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Laxflowered Sea-lavender (*Limonium humile*) and Sea Arrowgrass (*Triglochin maritima*). Some shallow bay water is included in the site. Cork Harbour is adjacent to a major urban centre and a major industrial centre. Rostellan lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.



Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl, for which it is amongst the top five sites in the country. The five-year average annual core count for the entire harbour complex was 34,661 for the period 1996/97-2000/01. Of particular note is that the site supports an internationally important population of Redshank (1,614) – all figures given are average winter means for the 5 winters 1995/96-1999/00. A further 15 species have populations of national importance, as follows: Great Crested Grebe (218), Cormorant (620), Shelduck (1,426), Wigeon (1,750), Gadwall (15), Teal (807), Pintail (84), Shoveler (135), Red-breasted Merganser (90), Oystercatcher (791), Lapwing (3,614), Dunlin (4,936), Black-tailed Godwit (412), Curlew (1,345) and Greenshank (36). The Shelduck population is the largest in the country (9.6% of national total), while those of Shoveler (4.5% of total) and Pintail (4.2% of total) are also very substantial. The site has regionally or locally important populations of a range of other species, including Whooper Swan (10), Pochard (145), Golden Plover (805), Grey Plover (66) and Turnstone (99). Other species using the site include Bat-tailed Godwit (45), Mallard (456), Tufted Duck (97), Goldeneye (15), Coot (77), Mute Swan (39), Ringed Plover (51), Knot (31), Little Grebe (68) and Grey Heron (47). Cork Harbour is an important site for gulls in winter and autumn, especially

Common Gull (2,630) and Lesser Black-backed Gull (261); Black-headed Gull (948) also occurs.

A range of passage waders occur regularly in autumn, including Ruff (5-10), Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.

The wintering birds in Cork Harbour have been monitored since the 1970s and are counted annually as part of the I-WeBS scheme.

Cork Harbour has a nationally important breeding colony of Common Tern (3-year mean of 69 pairs for the period 1998-2000, with a maximum of 102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed.

Extensive areas of estuarine habitat have been reclaimed since about the 1950s for industrial, port-related and road projects, and further reclamation remains a threat. As Cork Harbour is adjacent to a major urban centre and a major industrial centre, water quality is variable, with the estuary of the River Lee and parts of the Inner Harbour being somewhat eutrophic. However, the polluted conditions may not be having significant impacts on the bird populations. Oil pollution from shipping in Cork Harbour is a general threat. Recreational activities are high in some areas of the harbour, including jet skiing which causes disturbance to roosting birds.



Cork Harbour has is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its population of Redshank. In addition, there are at least 15 wintering species that have populations of national importance, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Golden Plover, Bar-tailed Godwit, Ruff and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it.

# APPENDIX IV

**Cork County Council, November 2010, Carrigaline Electoral Area Local Area Plan Review – Summary of Extracts**

**Introduction**

Minane Bridge Marsh **pNHA 1966** is located to the south west of Minane Bridge village. The area is listed for its unusual vegetation type which throughout much of the country has been drained. In November 2010 Cork County Council published the Carrigaline Electoral Area Local Area Plan Review. Within this review Cork County Council recognise that 'the village of Minane Bridge adjoins this environmental designation (the proposed Natural Heritage Area and)....any further expansion westwards will impact on the intactness of the designation'. Within the Local Area Plan Review (LAP Review) Cork County Council outlined the methodology behind carrying out various environmental studies while also underlining their commitments to environmental protection. The following are exerts from the Cork County Council's Carrigaline Electoral Area Local Area Plan Review, which relate to the Minane Bridge Agglomeration:

**Ecological Networks**

It is the intention of CCC to map areas of high biodiversity value and corridors. The ecological network approach promotes management of linkages between areas of high biodiversity value, between areas of high and low biodiversity value, between areas used by species for different functions and between local populations of different species. Corridors and linking areas can support migration, dispersal and daily movements. This process has begun with the Habitat Mapping programmes completed in Blarney and Carrigaline and recently begun in Midleton. The objectives of the Carrigaline Electoral District Habitat Survey and Mapping project are

- To carry out a survey of habitats within the Carrigaline Electoral district (ED);
- To map semi-natural habitats identified to level 111 of Fossitt (2000) classification scheme;
- To survey, map and provide supplementary information relating to all habitat listed on Annex 1 of the European union Habitats Directive 992/43/EEC) that occur within the survey area:
- To survey, map and provide supplementary information relating to sites of local biodiversity value and ecological corridors with the survey area;
- To provide a GIS database of habitat mapping and other data.

Many areas of local biodiversity value correspond to sites already designated by the Department of the Environment, Heritage and local Government as Special areas of Conservation (SACs), special protection areas for birds (SPAs) or proposed natural heritage areas (pNHAs). Ecological corridors linking high biodiversity areas were also identified. The conservation value and threats to areas of local biodiversity value were assessed in greater detail. Management recommendations were made to maintain or enhance the conservation value of areas of local biodiversity value. As most of the lands identified in the habitat survey database are in private ownership, achieving ecologically beneficial management will in many cases require a cooperative engagement with landowners.

**Issues**

Impacts on protected areas, European (e.g. Special areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites) and Nationally Designated Sites (e.g. Natural Heritage Areas (NHAs);

- Impacts on flora and fauna including protected species
- Impacts on sensitive habitats outside protected areas;
- Protecting and enhancing biodiversity at a regional level;
- Potential for habitat loss and fragmentation

**Features of geological/ geomorphologic interest**

To date sites of geological interest have not been comprehensively covered by the existing nature conservation designations. This is currently being addressed by the Department of Environment Heritage and Local Government and the Geological Survey of Ireland who are drawing up a list of sites of geological interest that will be proposed as Natural Heritage Areas. The 2009 Cork County Development Plan identifies areas of geological interest in the county.

| Site | Geological Interest | Location |
|---|---|---|
| Fountainstown Creek to Ringabella Beach | Lower Carboniferous | Ringabella Tn, Minane Bridge |



**Potential Pressures on Water Quality**

The principal suspected causes of less than satisfactory water in the state are discharges, principally of nutrients, from agricultural activities and from municipal wastewater treatment works. Industrial discharges, wastewater from unsewered properties and discharges from several other activities have also been identified as contributing. Action should concentrate in the first instance on these issues which pose the greatest threat to the water environment, but it is also important to address other possible sources of water pollution and impact, including issues such as water abstraction and physical modification and issues specific to the RBD.

The RBD Plans identify a programme of measures to protect and restore water status by addressing the main pressures (that is sources of pollution or status impact) in the district. Many of the measures are already provided for in national legislation and are being implemented. These include, for example, the Urban Waste Water Treatment Regulations 2001 to 2010 and the Good Agricultural Practice for the Protection of Waters Regulations of 2009. Other measures have been recently introduced (for example new Bathing Water Regulations, 2008) or are under preparation (for example proposed authorisation regulations for abstractions and physical modifications). The key measures include:

- Control of urban wastewater discharges;
- Control of unsewered waste water discharges;
- Control of agricultural sources of pollution;
- Water pricing policy;

- Sub-basin management plans and programmes of measures for the purpose of achieving environmental water quality objectives for Natura 2000 sites designated for the protection of Freshwater Pearl Mussel populations;
- Pollution reduction programmes for the purpose of achieving water quality standards for designated shellfish waters; and
- Control of environmental impacts from forestry.

## Mapping of Environmental Sensitivities

### Introduction

The following section explains how cumulative environmental sensitivity was identified and mapped. A composite map for the electoral area has been produced based on the environmental sensitivity data. Environmental sensitivities have been categorised in a range from robust (green) to vulnerable (yellow) to highly vulnerable (orange, red and dark red). It should be recognised that the impacts of cumulative developments causes a slow but measurable deterioration of environmental resources.

### Methodology

This aim of the cumulative environmental sensitivity assessment and the resulting map is to present the sensitivities within the electoral area from a purely environmental point of view. The purpose in essence is to highlight highly vulnerable lands within the electoral area where proposed developments or small developments on an incremental scale could have significant environmental effects which would lead to conflict between development and the environment. However, the assessment has also identified environmentally robust areas where it is considered that the environmental capacity is greater. Vulnerable areas have also been identified and this categorisation lies between the above two. It is important to note that there may be individual environmental issues in lands that are designated as vulnerable or robust. Thus information provided in the baseline environment section of this Environmental Report should be examined to determine these issues as the baseline environment identifies and explores localised environment issues within these areas in more detail.



The environmental sensitivity assessment of this electoral area was provided through a GIS based evaluation of environmental sensitivities involving a number of analytical maps, which are weighted and overlapped to produce a combined Environmental Sensitivity Map (synthesis map) for the electoral area. The combined map indicates the range of environmental sensitivities in the electoral area and rates vulnerability from robust to highly vulnerable. For the purposes of the assessment of environmental sensitivities, 3 categories were identified i.e. robust
(green) to vulnerable (yellow) to highly vulnerable (orange and red). The darker the green the more robust the area is and the darker the red means that area is more vulnerable.
For the assessment of environmental sensitivity, indicators were classified into 8 groups as follows:

- Biodiversity
- Population and Human Health
- Soil and Geology

- Water Resources
- Air and Climate
- Cultural Heritage
- Landscape
- Material Assets

Each of the above indicators was then divided into sub-indicators e.g. biodiversity is subdivided into SAC's, SPA's, NHA's and pNHA's.. For the purposes of the assessment of environmental sensitivity, indicators and their sub-indicators were allocated a certain weighting depending on their environmental importance. **Figure 6.1** (Cumulative Assessment Indicators - Weighting) presents the weighting allocated to each indicator. The sum of the weighting of all 8 indicators is equal to one and the sum of all sub indicators under each of the individual indicators is also equal to one.

**Figure 6.1. Cumulative Assessment Indicators - Weighting**

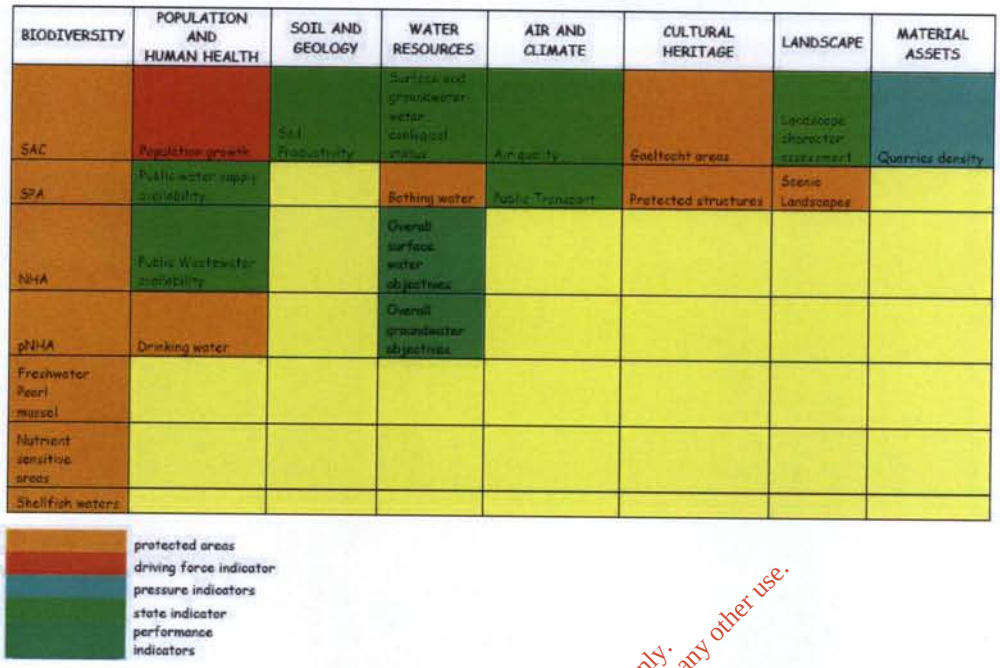
- BIODIVERSITY 21.97
- POPULATION & HUMAN HEALTH 37.62
- SOIL & GEOLOGY 8.1
- WATER RESOURCES 11.81
- AIR & CLIMATE 11.81
- CULTURAL HERITAGE 2.55
- LANDSCAPE 1.64
- MATERIAL ASSETS 4.5



It is clear from the figure above that Population and Human Health has got a heavy weighting as two of the sub indicators that were considered within this indicator were the availability of a municipal wastewater treatment plant and the availability of a public drinking water supply. Thus if both criteria were met then it is likely that the area in question will be more robust while areas do not have either will be more environmentally vulnerable. Biodiversity also gets a high rating due to the significance of Natura 2000 sites which are important at a European level.

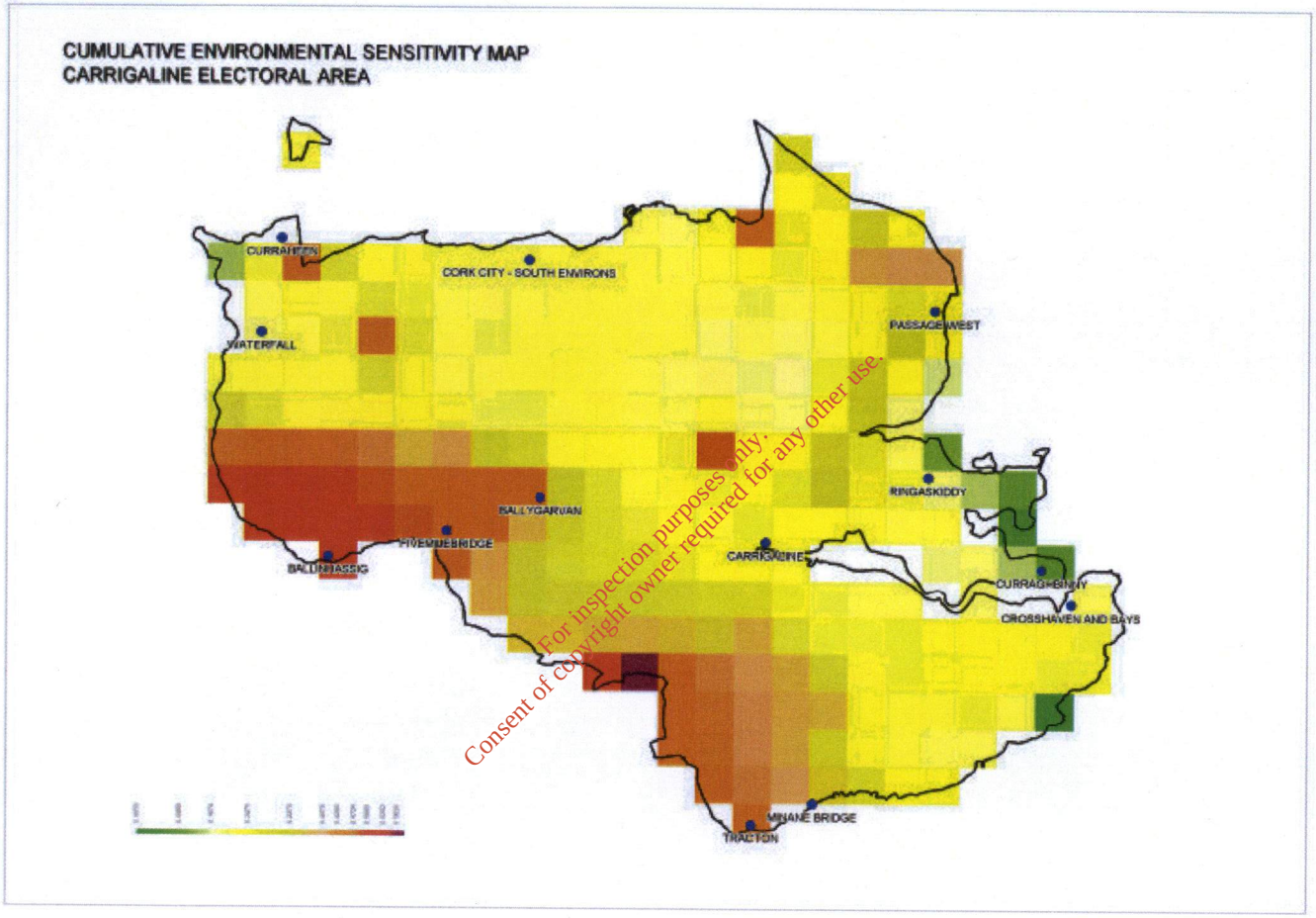
**The next figure (Figure 6.2) shows** the 8 environmental indicators and sub indicators. Colour coding indicates the type of sub indicator i.e. protected areas under the WFD, performance indicators (e.g. achieving objectives under the River Basin District Management Plans).

**Fig 6.2**






**Map 6.6** presents the results of the assessment and is the Cumulative Environmental Sensitivity Map for the electoral area. It must be noted that this map represents the combining and overlapping of environmental receptors in the electoral area and thus will not highlight individual environmental issues within individual settlements. For example, it is clear from an examination of **Map 6.6** that the area around the main towns are generally regarded as less sensitive as these settlements have municipal wastewater treatment and a public water supply. However **Map 6.6** does not measure the performance or capacity of the wastewater treatment or quality of the drinking water in these settlements and these must be assessed separately using data from the environmental baseline. Overall this environmental sensitivity assessment highlights the need to make the best use of lands within the electoral area from an environmental perspective. However, in order to achieve this, areas of conflict within the electoral areas highly vulnerable lands must be determined. For the purposes of the LAP Environmental Report it was assumed that development pressure areas are the actual settlements within the electoral areas. Thus it is assumed that conflict will occur where settlements and highly vulnerable lands overlap. As stated previously, the individual environmental issues for the electoral area must also be taken into consideration as the environmental sensitivity map is only an assessment on a broad cumulative scale.






Map 6.6: Cumulative Environmental Sensitivity Map

**Conclusion**

Cork County Council have committed in the most recent Local Area Plan Review (November 2010) to identifying, assessing and safeguarding the environment across a range of areas such as biodiversity, material assets, water resources, air and climate etc. Cork County Council are actively engaging in carrying out environmental reviews across the County, with studies already beginning in the Carrigaline Electoral Area. The results of these studies are not yet known but will form the basis of future development plans with environmental issues being a primary concern.

# River Valley W.W.T.P. – Snag List

| | |
|---|---|
| 1 | The site on which the plant is located is overgrown and the waste material lying around the plant which should be removed. The site should be tidied up to provide safe access for the curator. A hardcore surface is required for vehicle parking. All vegetation within the perimeter of the treatment plant and close to circulation paths etc. for maintenance staff should be removed or cut back as it interferes with save movement of staff operating the plant. Paths should be provided where necessary. |
| 2 | Locks and keys should be provided for entrance gate and doors to control rooms to the Council's satisfaction. The same type of lock should be used throughout the facility so that it can be operated with a single key. (Note: total 6 no locks required.) |
| 3 | Some of the pipes within the waste water treatment plant are held in place with timber supports. All pipelines should be secured using galvanised steel supports and fittings as necessary. |
| 4 | The plywood covers (weighed down with cavity blocks) used as lids on the chambers of the treatment plant should be replaced with approved galvanised steel covers in accordance with the manufacturer's requirements. Galvanised steel covers are required for safety reasons and to minimise emission of odours. |
| 5 | A U.V. treatment unit should be installed upstream of the constructed wetland. |
| 6 | The inspection chamber near the discharge point should be rebuilt as directed on site. |
| 7 | The effluent outflow pipe should be fitted with a diffuser on the outlet, in order to maximise the mixing of effluent with the receiving river water. The effluent outflow pipe shall be fitted with a flow-meter and composite sampler at the discharge point following secondary treatment and before discharge to the wetlands or at a location agreed with the Licensing Authority. The flow meter shall be of the continuous recording and integrating type and composite sampler shall be flow proportionate. The sampler shall be capable of taking samples at a frequency to be agreed with the Licensing Authority making up to a composite sample once every 24 hours. This sampling and monitoring system shall be fully operational and in use at all times during which effluent is being discharged. |
| 8 | All pump sumps and other treatment plant chambers from which spillages might occur shall be fitted with 'high liquid level' alarms. The alarm condition shall be indicated by a signal on site and also, by a dial out modem, to the person responsible for the site.<br><br>Control panels shall incorporate hours run meters for each individual unit. Containment areas around pump sumps shall be put in place and any spillages diverted to the effluent treatment plant. An alternative energy power supply shall be installed to augment the main power source in the event of a power failure on site unless alternative arrangements are agreed with the Licensing Authority. |
| 9 | A standby storage facility for untreated effluent shall be installed to accommodate untreated wastewater in the event of a malfunction, or, breakdown of the effluent treatment. Details of this facility shall be agreed with the Licensing Authority. |

Agglomeration details

| | |
|---|---|
| Leading Local Authority | Cork County Council |
| Co-Applicants | |
| Agglomeration | Minane Bridge New |
| Population Equivalent | 161 |
| Level of Treatment | Secondary Treatment |
| Treatment plant address | Waste Water Treatment Plant,<br>River Valley Estate,<br>Minane Bridge,<br>Co. Cork |
| Grid Ref (12 digits, 6E, 6N) | 174107 / 056537 (Verifed using GPS) |
| EPA Reference No: | |

Contact details

| | |
|---|---|
| Contact Name: | Patricia Power |
| Contact Address: | Water Services<br>Cork County Council<br>County Hall<br>Carrigrohane Road<br>Cork. |
| Contact Number: | 021-4276891 |
| Contact Fax: | 021-4276321 |
| Contact Email: | patricia.power@corkcoco.ie |

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

Discharge Point Code: SW-1

| | | |
|---|---|---|
| Local Authority Ref No: | BOL/MINB/1209/1 | |
| Source of Emission: | WWTP serving 28 houses | |
| Location: | Minane, Minane Bridge | |
| Grid Ref (12 digits, 6E, 6N) | 174107 / 056537 (Verifed using GPS) | |
| Name of Receiving waters: | Minane River | |
| Water Body: | River Water Body | |
| River Basin District | South Western RBD | |
| Designation of Receiving Waters: | Moderate | |
| Flow Rate in Receiving Waters: | 0 | $m^3.sec^{-1}$ Dry Weather Flow |
| | 0 | $m^3.sec^{-1}$ 95% Weather Flow |
| Additional Comments (e.g. commentary on zero flow or other information deemed of value) | flow data for the Minane River was not available | |

Emission Details:

| (i) Volume emitted | | | |
|---|---|---|---|
| Normal/day | 23 $m^3$ | Maximum/day | 23 $m^3$ |
| Maximum rate/hour | 0.96 $m^3$ | Period of emission (avg) | 60 min/hr 24 hr/day 365 day/yr |
| Dry Weather Flow | 0.000266 $m^3$/sec | | |

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

### Discharge Point Code: SW-1

| Substance | As discharged | | | |
|---|---|---|---|---|
| | Unit of Measurement | Sampling Method | Max Daily Avg. | kg/day |
| pH | pH | Grab | = 9 | |
| Temperature | °C | Grab | = 25 | |
| Electrical Conductivity (@ 25°C) | µS/cm | Grab | = 1000 | |
| Suspended Solids | mg/l | Grab | = 35 | 0.805 |
| Ammonia (as N) | mg/l | Grab | = 5 | 0.115 |
| Biochemical Oxygen Demand | mg/l | Grab | = 25 | 0.575 |
| Chemical Oxygen Demand | mg/l | Grab | = 125 | 2.875 |
| Total Nitrogen (as N) | mg/l | Grab | = 5 | 0.115 |
| Nitrite (as N) | mg/l | Grab | = 0 | 0 |
| Nitrate (as N) | mg/l | Grab | = 0 | 0 |
| Total Phosphorous (as P) | mg/l | Grab | = 4 | 0.092 |
| OrthoPhosphate (as P) | mg/l | Grab | = 3 | 0.069 |
| Sulphate ($SO_4$) | mg/l | Grab | = 0 | 0 |
| Phenols (Sum) | µg/l | Grab | = 0 | 0 |

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

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

### Discharge Point Code: SW-1

| Substance | As discharged | | | |
|---|---|---|---|---|
| | Unit of Measurement | Sampling Method | Max Daily Avg. | kg/day |
| Atrazine | µg/l | Grab | = 0 | 0 |
| Dichloromethane | µg/l | Grab | = 0 | 0 |
| Simazine | µg/l | Grab | = 0 | 0 |
| Toluene | µg/l | Grab | = 0 | 0 |
| Tributyltin | µg/l | Grab | = 0 | 0 |
| Xylenes | µg/l | Grab | = 0 | 0 |
| Arsenic | µg/l | Grab | = 0 | 0 |
| Chromium | µg/l | Grab | = 0 | 0 |
| Copper | µg/l | Grab | = 0 | 0 |
| Cyanide | µg/l | Grab | = 0 | 0 |
| Flouride | µg/l | Grab | = 0 | 0 |
| Lead | µg/l | Grab | = 0 | 0 |
| Nickel | µg/l | Grab | = 0 | 0 |
| Zinc | µg/l | Grab | = 0 | 0 |
| Boron | µg/l | Grab | = 0 | 0 |
| Cadmium | µg/l | Grab | = 0 | 0 |
| Mercury | µg/l | Grab | = 0 | 0 |
| Selenium | µg/l | Grab | = 0 | 0 |
| Barium | µg/l | Grab | = 0 | 0 |

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

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

Discharge Point Code: GW-2

| | | |
|---|---|---|
| Local Authority Ref No: | BOL/MINB/1209/ | |
| Source of Emission: | Septic tank serving 8 houses | |
| Location: | Laharran, Minane Bridge | |
| Grid Ref (12 digits, 6E, 6N) | 174490 / 056690 (Verifed using GPS) | |
| Name of Receiving waters: | Minane River | |
| Water Body: | Ground Water Body | |
| River Basin District | South Western RBD | |
| Designation of Receiving Waters: | Moderate | |
| Flow Rate in Receiving Waters: | 0 | $m^3.sec^{-1}$ Dry Weather Flow |
| | 0 | $m^3.sec^{-1}$ 95% Weather Flow |
| Additional Comments (e.g. commentary on zero flow or other information deemed of value) | flow data for the Minane River was not available | |

Emission Details:

| (i) Volume emitted | | | |
|---|---|---|---|
| Normal/day | 5 $m^3$ | Maximum/day | 6.75 $m^3$ |
| Maximum rate/hour | 0.28125 $m^3$ | Period of emission (avg) | 60 min/hr 24 hr/day 365 day/yr |
| Dry Weather Flow | 5.787E-05 $m^3$/sec | | |

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

### Discharge Point Code: GW-2

| Substance | As discharged | | | |
|---|---|---|---|---|
| | Unit of Measurement | Sampling Method | Max Daily Avg. | kg/day |
| pH | pH | Grab | = 9 | |
| Temperature | °C | Grab | = 25 | |
| Electrical Conductivity (@ 25°C) | µS/cm | Grab | = 1000 | |
| Suspended Solids | mg/l | Grab | = 35 | 0.23625 |
| Ammonia (as N) | mg/l | Grab | = 5 | 0.003375 |
| Biochemical Oxygen Demand | mg/l | Grab | = 25 | 0.16875 |
| Chemical Oxygen Demand | mg/l | Grab | = 125 | 0.84375 |
| Total Nitrogen (as N) | mg/l | Grab | = 0 | 0 |
| Nitrite (as N) | mg/l | Grab | = 0 | 0 |
| Nitrate (as N) | mg/l | Grab | = 0 | 0 |
| Total Phosphorous (as P) | mg/l | Grab | = 4 | 0.027 |
| OrthoPhosphate (as P) | mg/l | Grab | = 3 | 0.0205 |
| Sulphate ($SO_4$) | mg/l | Grab | = 0 | 0 |
| Phenols (Sum) | µg/l | Grab | = 0 | 0 |

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

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

Discharge Point Code: GW-2

| Substance | As discharged | | | |
|---|---|---|---|---|
| | Unit of Measurement | Sampling Method | Max Daily Avg. | kg/day |
| Atrazine | µg/l | Grab | = 0 | 0 |
| Dichloromethane | µg/l | Grab | = 0 | 0 |
| Simazine | µg/l | Grab | = 0 | 0 |
| Toluene | µg/l | Grab | = 0 | 0 |
| Tributyltin | µg/l | Grab | = 0 | 0 |
| Xylenes | µg/l | Grab | = 0 | 0 |
| Arsenic | µg/l | Grab | = 0 | 0 |
| Chromium | µg/l | Grab | = 0 | 0 |
| Copper | µg/l | Grab | = 0 | 0 |
| Cyanide | µg/l | Grab | = 0 | 0 |
| Flouride | µg/l | Grab | = 0 | 0 |
| Lead | µg/l | Grab | = 0 | 0 |
| Nickel | µg/l | Grab | = 0 | 0 |
| Zinc | µg/l | Grab | = 0 | 0 |
| Boron | µg/l | Grab | = 0 | 0 |
| Cadmium | µg/l | Grab | = 0 | 0 |
| Mercury | µg/l | Grab | = 0 | 0 |
| Selenium | µg/l | Grab | = 0 | 0 |
| Barium | µg/l | Grab | = 0 | 0 |

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

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

| Identification Code for Discharge point | Frequency of discharge (days/annum) | Quantity of Waste Water Discharged ($m^3$/annum) |
|---|---|---|
| SW-1 | 365 | 8395 |
| GW-2 | 365 | 1825 |

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

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

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

## Primary Discharge Point

| | |
|---|---|
| Discharge Point Code: | SW-1 |
| MONITORING POINT CODE: | aSW-1d |
| Grid Ref (12 digits, 6E, 6N) | 174786 / 056914 |

| Parameter | Results (mg/l) | | | | Sampling method | Limit of Quantitation | Analysis method / technique |
|---|---|---|---|---|---|---|---|
| | 22/10/09 | | | | | | |
| pH | = 7.4 | | | | Grab | 2 | Electrochemical |
| Temperature | = 0 | | | | Grab | 0.5 | Electrochemical |
| Electrical Conductivity (@ 25°C) | = 186 | | | | Grab | 0.5 | Electrochemical |
| Suspended Solids | = 33 | | | | Grab | 0.5 | Gravimetric |
| Ammonia (as N) | = 0.1 | | | | Grab | 0.02 | Colorimetric |
| Biochemical Oxygen Demand | = 8 | | | | Grab | 0.06 | Electrochemical |
| Chemical Oxygen Demand | = 47 | | | | Grab | 8 | Digestion & Colorimetric |
| Dissolved Oxygen | = 0 | | | | Grab | 0.2 | ISE |
| Hardness (as $CaCO_3$) | = 0 | | | | Grab | 1 | Titrimetric |
| Total Nitrogen (as N) | = 3.76 | | | | Grab | 0.5 | Digestion & Colorimetric |
| Nitrite (as N) | = 0.1 | | | | Grab | 0.1 | Colorimetric |
| Nitrate (as N) | = 1.47 | | | | Grab | 0.5 | Colorimetric |
| Total Phosphorous (as P) | = 0.308 | | | | Grab | 0.2 | Digestion & Colorimetric |
| OrthoPhosphate (as P) | = 0.13 | | | | Grab | 0.02 | Colorimetric |
| Sulphate ($SO_4$) | < 30 | | | | Grab | 30 | Turbidimetric |
| Phenols (Sum) | = 0 | | | | Grab | 0.1 | GC-MS2 |



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

| | |
|---|---|
| Additional Comments: | |

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

Primary Discharge Point

| | |
|---|---|
| Discharge Point Code: | SW-1 |
| MONITORING POINT CODE: | aSW-1d |
| Grid Ref (12 digits, 6E, 6N) | 174786 / 056914 |

| Parameter | Results (µg/l) | | | | Sampling method | Limit of Quantitation | Analysis method / technique |
|---|---|---|---|---|---|---|---|
| | 22/10/09 | | | | | | |
| Atrazine | = 0 | | | | Grab | 0.96 | HPLC |
| Dichloromethane | = 0 | | | | Grab | 1 | GC-MS1 |
| Simazine | = 0 | | | | Grab | 0.01 | HPLC |
| Toluene | = 0 | | | | Grab | 0.02 | GC-MS1 |
| Tributyltin | = 0 | | | | Grab | 0.02 | GC-MS1 |
| Xylenes | = 0 | | | | Grab | 1 | GC-MS1 |
| Arsenic | < 20 | | | | Grab | 0.96 | ICP-MS |
| Chromium | < 20 | | | | Grab | 20 | ICP-OES |
| Copper | = 0 | | | | Grab | 20 | ICP-OES |
| Cyanide | = 84 | | | | Grab | 5 | Colorimetric |
| Flouride | < 20 | | | | Grab | 100 | ISE |
| Lead | < 20 | | | | Grab | 20 | ICP-OES |
| Nickel | < 20 | | | | Grab | 20 | ICP-OES |
| Zinc | = 66.3 | | | | Grab | 20 | ICP-OES |
| Boron | < 20 | | | | Grab | 20 | ICP-OES |
| Cadmium | = 0 | | | | Grab | 20 | ICP-OES |
| Mercury | = 0 | | | | Grab | 0.2 | ICP-MS |
| Selenium | < 20 | | | | Grab | 0.74 | ICP-MS |
| Barium | | | | | Grab | 20 | ICP-OES |

| | |
|---|---|
| Additional Comments: | |

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

## Primary Discharge Point

| | |
|---|---|
| Discharge Point Code: | SW-1 |
| MONITORING POINT CODE: | aSW-1d 2 |
| Grid Ref (12 digits, 6E, 6N) | 174786 / 056914 |

| Parameter | Results (mg/l) | | | | Sampling method | Limit of Quantitation | Analysis method / technique |
|---|---|---|---|---|---|---|---|
| | 01/01/09 | 22/10/09 | | | | | |
| pH | | = 7.4 | | | Grab | 2 | Electrochemical |
| Temperature | | = 0 | | | Grab | 0.5 | Electrochemical |
| Electrical Conductivity (@ 25°C) | | = 186 | | | Grab | 0.5 | Electrochemical |
| Suspended Solids | | = 33 | | | Grab | 0.5 | Gravimetric |
| Ammonia (as N) | | = 0 | | | Grab | 0.2 | Colorimetric |
| Biochemical Oxygen Demand | | = 0 | | | Grab | 0.06 | Electrochemical |
| Chemical Oxygen Demand | | = 47 | | | Grab | 8 | Digestion & Colorimetric |
| Dissolved Oxygen | = 0 | | | | Grab | 0.2 | ISE |
| Hardness (as $CaCO_3$) | = 0 | | | | Grab | 1 | Titrimetric |
| Total Nitrogen (as N) | | = 3.76 | | | Grab | 0.5 | Digestion & Colorimetric |
| Nitrite (as N) | | = 0.1 | | | Grab | 0.1 | Colorimetric |
| Nitrate (as N) | | = 1.47 | | | Grab | 0.5 | Colorimetric |
| Total Phosphorous (as P) | | = 0.308 | | | Grab | 0.2 | Digestion & Colorimetric |
| OrthoPhosphate (as P) | | = 0.13 | | | Grab | 0.02 | Colorimetric |
| Sulphate ($SO_4$) | | < 30 | | | Grab | 30 | Tubridmetric |
| Phenols (Sum) | | = 0 | | | Grab | 0.1 | GC-MS2 |



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

| | |
|---|---|
| Additional Comments: | Default of 01/01.09 and 0 whee results are not available |

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

Primary Discharge Point

| | |
|---|---|
| Discharge Point Code: | SW-1 |
| MONITORING POINT CODE: | aSW-1d 2 |
| Grid Ref (12 digits, 6E, 6N) | 174786 / 056914 |

| Parameter | Results (µg/l) | | | | Sampling method | Limit of Quantitation | Analysis method / technique |
|---|---|---|---|---|---|---|---|
| | 01/01/09 | 22/10/09 | | | | | |
| Atrazine | = 0 | | | | Grab | 0.96 | HPLC |
| Dichloromethane | = 0 | | | | Grab | 1 | GC-MS1 |
| Simazine | = 0 | | | | Grab | 0.01 | HPLC |
| Toluene | = 0 | | | | Grab | 0.02 | GC-MS1 |
| Tributyltin | = 0 | | | | Grab | 0.02 | GC-MS1 |
| Xylenes | = 0 | | | | Grab | 1 | GC-MS1 |
| Arsenic | | < 20 | | | Grab | 0.96 | ICP-MS |
| Chromium | | < 20 | | | Grab | 20 | ICP-OES |
| Copper | = 0 | | | | Grab | 20 | ICP-OES |
| Cyanide | | = 84 | | | Grab | 5 | Colorimetric |
| Flouride | | < 20 | | | Grab | 100 | ISE |
| Lead | | < 20 | | | Grab | 20 | ICP-OES |
| Nickel | | < 20 | | | Grab | 20 | ICP-OES |
| Zinc | | = 66.3 | | | Grab | 20 | ICP-OES |
| Boron | | < 20 | | | Grab | 20 | ICP-OES |
| Cadmium | = 0 | | | | Grab | 20 | ICP-OES |
| Mercury | = 0 | | | | Grab | 0.2 | ICP-MS |
| Selenium | | < 20 | | | Grab | 0.74 | ICP-MS |
| Barium | | | | | Grab | 20 | ICP-OES |

| | |
|---|---|
| Additional Comments: | |

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

## Secondary Discharge Point

| | |
|---|---|
| Discharge Point Code: | GW-2 |
| MONITORING POINT CODE: | aGW-2d |
| Grid Ref (12 digits, 6E, 6N) | 174786 / 056914 |

| Parameter | Results (mg/l) | | | | Sampling method | Limit of Quantitation | Analysis method / technique |
|---|---|---|---|---|---|---|---|
| | 22/10/09 | | | | | | |
| pH | = 7.4 | | | | Grab | 2 | Electrochemical |
| Temperature | = 0 | | | | Grab | 0.5 | Electrochemical |
| Electrical Conductivity (@ 25°C) | = 186 | | | | Grab | 0.5 | Electrochemical |
| Suspended Solids | = 33 | | | | Grab | 0.5 | Gravimetric |
| Ammonia (as N) | = 0 | | | | Grab | 0.2 | Colorimetric |
| Biochemical Oxygen Demand | = 0 | | | | Grab | 0.06 | Electrochemical |
| Chemical Oxygen Demand | = 47 | | | | Grab | 8 | Digestion & Colorimetric |
| Dissolved Oxygen | = 0 | | | | Grab | 0.2 | ISE |
| Hardness (as $CaCO_3$) | = 0 | | | | Grab | 1 | Titrimetric |
| Total Nitrogen (as N) | = 3.76 | | | | Grab | 0.5 | Digestion & Colorimetric |
| Nitrite (as N) | = 0.1 | | | | Grab | 0.1 | Colorimetric |
| Nitrate (as N) | = 1.47 | | | | Grab | 0.5 | Colorimetric |
| Total Phosphorous (as P) | = 0.308 | | | | Grab | 0.2 | Digestion & Colorimetric |
| OrthoPhosphate (as P) | = 0.13 | | | | Grab | 0.02 | Colorimetric |
| Sulphate ($SO_4$) | < 30 | | | | Grab | 30 | Tubridmetric |
| Phenols (Sum) | = 0 | | | | Grab | 0.1 | GC-MS2 |



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

| | |
|---|---|
| Additional Comments: | Default of 01/01.09 and 0 whee results are not available |

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

Secondary Discharge Point

| | |
|---|---|
| Discharge Point Code: | GW-2 |
| MONITORING POINT CODE: | aGW-2d |
| Grid Ref (12 digits, 6E, 6N) | 174786 / 056914 |

| Parameter | Results (µg/l) | | | | Sampling method | Limit of Quantitation | Analysis method / technique |
|---|---|---|---|---|---|---|---|
| | 01/01/09 | 22/10/09 | | | | | |
| Atrazine | = 0 | | | | Grab | 0.96 | HPLC |
| Dichloromethane | = 0 | | | | Grab | 1 | GC-MS1 |
| Simazine | = 0 | | | | Grab | 0.01 | HPLC |
| Toluene | = 0 | | | | Grab | 0.02 | GC-MS1 |
| Tributyltin | = 0 | | | | Grab | 0.02 | GC-MS1 |
| Xylenes | = 0 | | | | Grab | 1 | GC-MS1 |
| Arsenic | = 0 | | | | Grab | 0.96 | ICP-MS |
| Chromium | | < 20 | | | Grab | 20 | ICP-OES |
| Copper | | < 20 | | | Grab | 20 | ICP-OES |
| Cyanide | = 0 | | | | Grab | 5 | Colorimetric |
| Flouride | | = 84 | | | Grab | 100 | ISE |
| Lead | | < 20 | | | Grab | 20 | ICP-OES |
| Nickel | | < 20 | | | Grab | 20 | ICP-OES |
| Zinc | | < 20 | | | Grab | 20 | ICP-OES |
| Boron | | = 66.3 | | | Grab | 20 | ICP-OES |
| Cadmium | | < 20 | | | Grab | 20 | ICP-OES |
| Mercury | = 0 | | | | Grab | 0.2 | ICP-MS |
| Selenium | = 0 | | | | Grab | 0.74 | ICP-MS |
| Barium | | < 20 | | | Grab | 20 | ICP-OES |

| | |
|---|---|
| Additional Comments: | |

**Annex 2: Check List For Regulation 16 Compliance**

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

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

| Regulation 16(1) In the case of an application for a waste water discharge licence, the application shall - | | Attachment Number | Checked by Applicant |
|---|---|---|---|
| (a) | give the name, address, telefax number (if any) and telephone number of the applicant (and, if different, of the operator of any treatment plant concerned) and the address to which correspondence relating to the application should be sent and, if the operator is a body corporate, the address of its registered office or principal office, | App Form B1/B2 | Yes |
| (b) | give the name of the water services authority in whose functional area the relevant waste water discharge takes place or is to take place, if different from that of the applicant, | App Form B1/B2 | Yes |
| (c) | give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the waste water treatment plant and/or the waste water discharge point or points to which the application relates, | App Form B3 | Yes |
| (d) | state the population equivalent of the agglomeration to which the application relates, | 161 | Yes |
| (e) | specify the content and extent of the waste water discharge, the level of treatment provided, if any, and the flow and type of discharge, | App Form C1 | Yes |
| (f) | give details of the receiving water body, including its protected area status, if any, and details of any sensitive areas or protected areas or both in the vicinity of the discharge point or points likely to be affected by the discharge concerned, and for discharges to ground provide details of groundwater protection schemes in place for the receiving water body and all associated hydrogeological and geological assessments related to the receiving water environment in the vicinity of the discharge. | App Form F1 | Yes |
| (g) | identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and, if Regulation 17 does not apply, provide details of the likely environmental consequences of any such discharges, | App Form F1 & G1 | Yes |
| (h) | in the case of an existing waste water treatment plant, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application, | App Form E4 | Yes |
| (i) | describe the existing or proposed measures, including emergency procedures, to prevent unintended waste water discharges and to minimise the impact on the environment of any such discharges, | App Form F1 & G1 | Yes |
| (j) | give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points, | App Form & Attachment G1 | Yes |
| (k) | give details, and an assessment of the effects, of any existing or proposed emissions on the environment, including any environmental medium other than those into which the emissions are, or are to be made, and of proposed measures to prevent or eliminate or, where that is not practicable, to limit any pollution caused in such discharges, | App Form F1 & G1 | Yes |
| (l) | give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations, | App Form G1 | Yes |
| (m) | give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work. | App Form & Attachment G1 | Yes |
| (n) | Any other information as may be stipulated by the Agency. | App Form & Attachments | Yes |
| **Regulation 16(3) Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by -** | | **Attachment Number** | **Checked by Applicant** |
| (a) | a copy of the notice of intention to make an application given pursuant to Regulation 9, | Not Applicable | Yes |
| (b) | where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13, | Not Applicable | Yes |
| (c) | Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate - | As Described below | Yes |
| (c) (i) | the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and | Not Applicable | Yes |
| (c) (ii) | the point or points at which monitoring and sampling are undertaken or are to be undertaken, | Section E | Yes |
| (d) | such fee as is appropriate having regard to the provisions of Regulations 38 and 39. | Attachment B8 | Yes |

| Regulation 16(4)<br>An original application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under Regulation 16(3) in hardcopy or in an electronic or other format as specified by the Agency. | | Attachment Number | Checked by Applicant |
|---|---|---|---|
| 1 | An Original Application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under regulation 16(3) in hardcopy or in electronic or other format as specified by the agancy. | Application Form, Attachments & CD ROM | Yes |
| **Regulation 16(5)**<br>**For the purpose of paragraph (4), all or part of the 2 copies of the said application and associated documents and particulars may, with the agreement of the Agency, be submitted in an electronic or other format specified by the Agency.** | | **Attachment Number** | **Checked by Applicant** |
| 1 | Signed original. | Not Applicable | Yes |
| 2 | 2 hardcopies of application provided or 2 CD versions of application (PDF files) provided. | Not Applicable | Yes |
| 3 | 1 CD of geo-referenced digital files provided. | Not Applicable | Yes |
| **Regulation 17**<br>**Where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency** | | **Attachment Number** | **Checked by Applicant** |
| 1 | EIA provided if applicable | Not Applicable | Yes |
| 2 | 2 hardcopies of EIS provided if applicable. | Not Applicable | Yes |
| 3 | 2 CD versions of EIS, as PDF files, provided. | Not Applicable | Yes |
| **Regulation 24**<br>**In the case of an application for a waste water discharge certificate of authorisation, the application shall –** | | **Attachment Number** | **Checked by Applicant** |
| (a) | give the name, address, telefax number (if any) and telephone number of the applicant and the address to which correspondence relating to the application should be sent and, if the operator of the waste water works is a body corporate, the address of its registered office or principal office | App Form B1/B2 | Yes |
| (b) | give the name of the water services authority in whose functional area the relevant waste water discharge takes place or is to take place, if different from that of the applicant, | App Form B1/B2 | Yes |
| (c) | give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the discharge point or points to which the application relates, | App Form B3, B4 | Yes |
| (d) | state the population equivalent of the agglomeration to which the application relates, | 161 | Yes |
| (e) | in the case of an application for the review of a certificate, specify the reference number given to the relevant certificate in the register, | A0356-01 | Yes |
| (f) | specify the content and extent of the waste water discharge, the level of treatment provided and the flow and type of discharge, | App Form C1 | Yes |
| (g) | give details of the receiving water body, its protected area status, if any, and details of any sensitive areas or protected areas, or both, in the vicinity of the discharge point or points or likely to be affected by the discharge concerned, | App Form F1 & G1 | Yes |
| (h) | identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and of the likely environmental consequences of any such discharges, | App Form E4 | Yes |
| (i) | in the case of an existing discharge, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application, | App Form Section E & F | Yes |
| (j) | describe the existing or proposed measures, including emergency procedures, to prevent unauthorised or unexpected waste water discharges and to minimise the impact on the environment of any such discharges, | App Form & Attachment G1 | Yes |
| (k) | give particulars of the location of the nearest downstream drinking water abstraction point or points to the discharge point or points associated with the waste water works, | App Form F1 & G1 | Yes |
| (l) | give details of any designation under any Council Directive or Regulations that apply in relation to the receiving waters, | App Form F1 & G1 | Yes |
| (m) | give details of compliance with any applicable monitoring requirements and treatment standards, | App Form F1 & G1 | Yes |
| (n) | give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work, | App Form F1 & G1 | Yes |
| (o) | give any other information as may be stipulated by the Agency, and | App Form and Attachments | Yes |
| (p) | be accompanied by such fee as is appropriate having regard to the provisions of Regulations 38 and 39. | Attachment B8 | Yes |