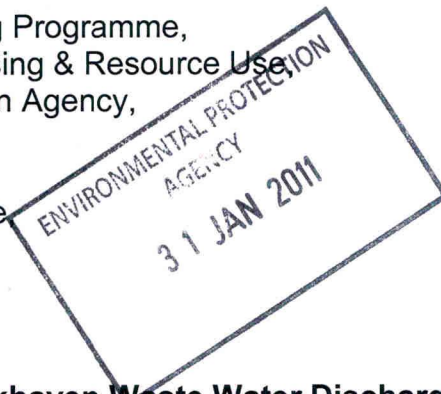




Web: <http://www.corkcoco.com/>

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



28<sup>th</sup> January 2011

**Re: A0392-01 – Crookhaven Waste Water Discharge Certificate Application –  
Reply to Notice in accordance with Regulation 25(c)(ii) of the Waste Water  
Discharge (Authorisation) Regulations 2007**

Dear Ms. Stafford,

I refer to your letter of the 14<sup>th</sup> December 2010 concerning the above. The following is our reply to your request for further information in accordance with Regulation 25(c)(ii).

**1. Assessment of Effects of the Waste Water Discharges on European Sites**

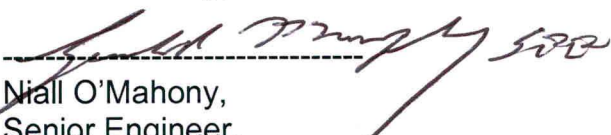
With reference to Circular L8/08 and the flow diagram in Appendix 1 attached, it can be concluded that the wastewater discharging from the agglomeration will not have significant effects on any relevant European sites.

The discharge point relating to Crookhaven agglomeration is approximately 100m from the Sheeps head to Toe Head SPA (Site Code 004156) and approximately 500m from Barley Cove to Ballyrisode Point SAC (Site Code 001040). The agglomeration discharges into Crook Haven which is a large, well exchanged body of water with high dilution and the pe of the agglomeration is <500pe. A Habitats Directive Assessment (Screening Report) for Crookhaven Agglomeration has been carried out and is attached. It can be concluded from this that an appropriate assessment is not required for this agglomeration.

**2. Agglomeration Boundary**

See attached drawing no. CROO B1-01 Rev A for revised agglomeration boundary.

Yours sincerely,

  
Niall O'Mahony,  
Senior Engineer,  
Cork County Council

Enclosures

## Wastewater Discharge Certificate of Authorisation: A0392-01 Crookhaven

### Circular L8/08 2 September 2008 Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments

#### APPENDIX 1

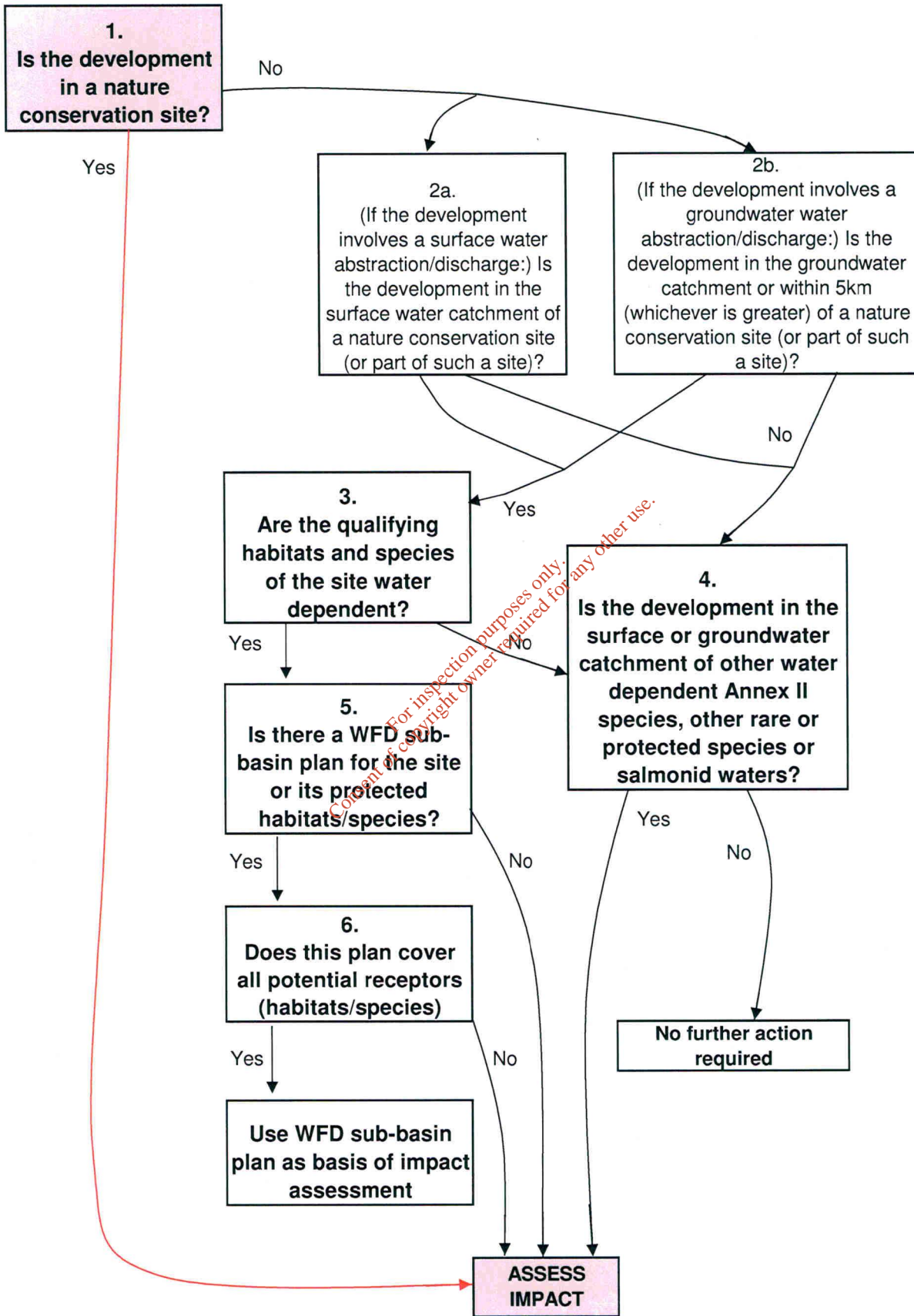
#### Water Services Schemes - Natural Heritage Checklist for Local Authorities

#### What projects must be screened?

For new projects and significant changes to any existing operations, if the answer is 'yes' to any of the following, the project (i.e. construction, operation and maintenance) must be screened for its impacts:	
1. Is the development in or on the boundary of a nature conservation site NHA/SAC/SPA?	Yes
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?	No
4. Is the development a groundwater discharge or abstraction in the ground water catchment or within 5 km 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



Flow Diagram - Route Highlighted Red & Shaded Grey



Conclusion: A Screening Report is required for Crookhaven

**Habitats Directive Assessment (Screening Report) in respect of**

**Application by Cork County Council to the EPA**

**for discharge certificate in respect of**

**Crookhaven Agglomeration**

**A0392-01**

**January 2011**

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# 1 Introduction

- 1.1 Crookhaven is a small village situated five miles from the Mizen Head, Irelands most southerly point. The current treatment system in Crookhaven is a primary treatment plant (septic tank) adjacent to the shoreline. The septic tank has a design capacity of 31m<sup>3</sup>, and it was originally designed for a p.e. of 160. Treated effluent from the septic tank outfalls to the coastal water of Crook haven via an existing outfall pipe.
- 1.2 The plant is located adjacent to Crook haven and the discharge point is within Crook haven. The discharge point is not within a Natura 2000 designated site but it is approximately 100m from the Sheeps Head to Toe Head SPA and appriximatley 500m form the Barley Cove to Ballyrisode Point SAC which are designated under the **EU Habitats Directive (92/43/EEC)** as transposed into Irish Law under the European Union (Natural Habitats) Regulations SI 94/1997. As this is the case, and in accordance with requirements under this Directive, the potential impacts of proposed developments that have the potential to impact on Special Protection Areas and Special Areas of Conservation must be assessed. The procedure to do this is called a **Habitats Directive Assessment**. The purpose of such an assessment is to identify whether there may be potential for elements of the project to have a significant impact on nature conservation sites within its impact zone, and if so, to predict the potential for such impacts to affect the overall integrity of such nature conservation sites. The European Union has provided guidance as to how to make a Habitats Directive Assessment which identifies four main stages in the process as follows.

## Stage One: Screening

*The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, wither alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.*

## Stage Two: Appropriate assessment

*The consideration of the impact on the integrity of the Natura 2000 site of the 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, an assessment of the potential mitigation of those impacts.*

## Stage Three: Assessment of alternative solutions

*The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.*

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain.

*An assessment of 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.*

- 1.3 This document brings together all of the information necessary to make determination as to whether there are likely to be significant impacts arising from the Crookhaen Waste Water Treatment Plant on the adjacent Sheeps Head to Toe Head SPA and the Barley Cove to Ballyrisode Point SAC and represents the first stage of this process (Screening).

*Step 1:*

*Provide a description of the plan and other plans and projects that, in combination, have the potential to have significant effects on Natura 2000 sites within the potential impact zone;*

*Step 2:*

*Identify Natura 2000 sites which may be impacted by the plan, and compile information on their qualifying interests and conservation objectives;*

*Step 3:*

*Determine whether the plan needs to be screened for potential impacts on Natura 2000 sites;*

*Step 4:*

*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;*

*Step 5:*

*Assess the significance of any such effects on the Natura 2000 sites within the impact zone.*

- 1.4 The 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.



## 2 Appropriate Assessment Screening Matrix

2.1 Description of project	
Location	Crookhaven WWTP, Crookhaven, Co. Cork. See attached Map.
Description of the key components of the project	The treatment system in Crookhaven is a primary treatment plant (septic tank) adjacent to the Bay. Built in the 70's with a capacity of 31m <sup>3</sup> , it was originally designed for a p.e. of 160. Treated effluent from the septic tank outfalls to Crook haven via an existing outfall pipe adjacent to the septic tank.
Distance from designated sites in potential impact zone*	The discharge point is approximately 100m from the Sheeps Head to Toe Head SPA and appriximatley 500m form the Barley Cove to Ballyrisode Point SAC.

### Site 1

2.2 Description of the Natura 2000 sites within the potential impact zone <sup>1</sup>	
Name	Sheeps Head to Toe Head Special Protection Area
Site Code	004156
Site Description	<p>The Sheeps Head to Toe Head SPA is a large site situated in the south west coast of Co. Cork. It encompasses the high coast and sea cliffs from Sheeps Head to Mizen Head, Brow Head and Crookhaven in the west and from Baltimore to Tragumna Bay, Gokane Point and the Toe Head Peninsula in the east. The habitats present range from sea cliff, gorse-dominated heath and rough grassland to good agricultural grassland.</p> <p>The discharge from the Crookhaven Wastewater Treatment Plant enters Crook Haven.</p> <p>More information on the The Sheeps Head to Toe Head SPA is contained appendix 1 of this document.</p>
Qualifying Interests of Sheeps Head to Toe Head SPA	The site is of special interest for the follow species: Chough Peregrine
Other Notable Features of Sheeps Head to Toe Head SPA	<p>The Site Synopsis is contained in appendix 1.</p> <p>The site holds a national important population of Black Guillemot (137 individuals), as well as similar populations of other breeding seabirds: Fulmar (57 pairs), Herring Gull (30</p>

<sup>1</sup> 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.



	pairs), Shag (17 pairs), Kittiwake (20 pairs) and Great Black-backed Gull (1 pair) - all sea bird data form 1999, 2001, 2002.
Conservation Objectives	<p>To maintain the special conservation interests for this SPA at favourable conservation status: Peregrine, Chough.</p> <p>The favourable conservation status of a species is achieved when:</p> <ul style="list-style-type: none"> <li>• population data on the species concerned indicate that it is maintaining itself, and</li> <li>• the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and</li> <li>• there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long term-basis</li> </ul> <p>Source - National Parks and Wildlife Service</p>

### 2.3 Assessment Criteria

Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.	<p><b>Discharge from Crookhaven WWTP:</b> Treated wastewater from the Crookhaven Waste Water Treatment Plant is discharged to Crook Haven adjacent to the Sheep Head to the Head SPA.</p> <p>The discharge consists of treated effluent from the Crookhaven Waste Water Treatment Plant.</p> <p><b>Other Discharges within the SPA:</b> Tragumna WWTP discharges to Tragumna Bay which is adjacent to the SPA.</p> <p>See Map in Appendix 3 for discharge locations.</p>
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: <ul style="list-style-type: none"> <li>○ Size and scale</li> <li>○ Land-take</li> <li>○ Distance from the Natura 2000 site or key features of the site:</li> <li>○ Resource requirements (water abstraction etc.)</li> <li>○ Emissions (disposal</li> </ul>	<p>Discharges could give rise to elevated nutrients entering Crook Haven. 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.</p> <p>However the potential for the treatment plant to result in elevated nutrients within the waters is reduced by two main factors:</p> <ol style="list-style-type: none"> <li>1. The treatment provided is considered as appropriate as set out in the Urban Wastewater Treatment Regulation standards for p.e &lt;2000.</li> <li>2. The treated effluent enters the Crook Haven which is a large and well exchanged body of water with unlimited dilution capacity.</li> </ol>

<p>to land, water or air)</p> <ul style="list-style-type: none"> <li>○ Excavation Requirements</li> <li>○ Transportation Requirements</li> <li>○ Duration of construction, operation, decommissioning</li> <li>○ Other.</li> </ul>	<p><b>1 The treatment provided is appropriate.</b>  <i>Treated effluent from the Crookhaven WWTP and receiving water quality were sampled as part of the Certificate of Authorisation application in 2009 (see appendix 2 for effluent testing results). The results of monitoring indicate that the wastewater treatment plant is not having a negative effect on the receiving waters.</i></p> <p><b>Note 1:</b> See appendix 2 for effluent quality results for 2009.</p> <p><b>Note 2:</b> The samples taken are grab samples.</p> <p><b>2 The treated effluent enters Crook Haven which is a large and well exchanged body of water with unlimited dilution capacity.</b></p>
<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> <li>○ Reduction in habitat area</li> <li>○ Disturbance to key species</li> <li>○ Habitat or species fragmentation</li> <li>○ Reduction in species density</li> <li>○ Changes in key indicators of conservation value (water quality etc)</li> <li>○ Climate Change</li> </ul>	<p><b>Reduction in habitat area:</b>  <i>Treated effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species within Crook Haven from the operation of this facility.</i></p> <p><b>Disturbance to key species:</b>  <i>The operation of the WWTP does not cause any disturbance to habitats &amp; species within the SPA.</i></p> <p><b>Habitat or species fragmentation:</b>  <i>No habitat fragmentation has been caused as a result of the operation of this facility.</i></p> <p><b>Reduction in species density:</b>  <i>Treated effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SPA is designated.</i></p> <p><b>Changes in key indicators of conservation value eg water quality:</b>  <i>While there is no ongoing monitoring of water quality for Crook Haven, some sampling and testing were done and submitted as part of the Wastewater Certificate of Authorisation Application. This testing, while insufficient for a complete analysis indicates that there is no deterioration in water quality associated with the Crookhaven discharge.</i></p>
<p>Describe any likely impacts on the Natura 2000 site as a whole in terms of:</p> <ul style="list-style-type: none"> <li>○ Interference with the key relationships that define the structure of the site</li> <li>○ Interference with key relationships</li> </ul>	<p><b>Interference with the key relationships that define the structure of the site:</b>  <i>The structure of the SPA is not impacted by the operation of this facility.</i></p> <p><b>Interference with key relationships that define the function of the site:</b>  <i>The function of the SPA is not impacted by the operation of this facility.</i></p>



that define the function of the site	
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.	No significant impacts are predicted.

## Site 2

2.2 Description of the Natura 2000 sites within the potential impact zone <sup>2</sup>	
Name	Barley Cove to Ballyrisode Point Special Area of Conservation
Site Code	001040
Site Description	<p>This site is situated on the Mizen Head peninsula in the extreme south-west of County Cork. It straddles a 10 km stretch of coastline from the Barley Cove inlet to Ballyrisode Point at Toormore Bay. The rock type is Old Red Sandstone. This displays a NE-SW folding which is especially visible at Crookhaven and Brow Head.</p> <p>The discharge from the Crookhaven Wastewater Treatment Plant enters Crookhaven.</p> <p>More information on the Barley Cove to Ballyrisode Point Special Area SAC is contained appendix 1 of this document.</p>
Qualifying Interests of Barley Cove to Ballyrisode Point Special Area of Conservation	<p>The site is of special interest for the follow species:</p> <ul style="list-style-type: none"> <li>Mudflats and sandflats not covered by seawater at low tide;</li> <li>Perennial vegetation of stony banks;</li> <li>Salicornia and other annuals colonizing mud and sand;</li> <li>Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>);</li> <li>Mediterranean salt meadows (<i>Juncetalia maritima</i>);</li> <li>Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes);</li> <li><b>Fixed coastal dunes with herbaceous vegetation (grey dunes);</b></li> <li>European dry heaths.</li> </ul>
Other Notable Features of Barley Cove to Ballyrisode Point Special Area of Conservation	<p>The Site Synopsis is contained in appendix 1.</p> <p>Chough &amp; other breeding seabirds</p>
Conservation Objectives	<p>Objective 1: To maintain the Annex I habitats for which the cSAC has not been selected at favourable conservation status: Mudflats and sandflats not covered by seawater at low tide; Perennial vegetation of stony banks; Salicornia and other annuals colonizing mud and sand; Atlantic salt</p>

<sup>2</sup> 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.



	<p>meadows (<i>Glauco-Puccinellietalia maritima</i>); Mediterranean salt meadow (<i>Juncetalia maritima</i>); Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes); Fixed coastal dunes with herbaceous vegetation (grey dunes); European dry heaths.</p> <p>Objective 2: To maintain the extent, species richness and biodiversity of the entire site.</p> <p>Objective 3: To establish liaison and co-operations with landowners, legal uses and relevant authorities</p> <p><i>Source - National Parks and Wildlife Service</i></p>
<p><b>2.3 Assessment Criteria</b></p>	
<p>Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.</p>	<p><b>Discharge from Crookhaven WWTP:</b>  <i>Treated wastewater from the Crookhaven Waste Water Treatment Plant is discharged to Crook Haven close to the Barley Cover to Ballyrisode Point SAC.</i></p> <p><i>The discharge consists of treated effluent from the Crookhaven Waste Water Treatment Plant.</i></p> <p><b>Other Discharges within the SAC:</b>  <i>Goleen WWTP's discharges to Ballydivlin Bay and is within the SAC.</i></p> <p><i>See Map in Appendix 3 for discharge locations.</i></p>
<p>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:</p> <ul style="list-style-type: none"> <li>○ Size and scale</li> <li>○ Land-take</li> <li>○ Distance from the Natura 2000 site or key features of the site:</li> <li>○ Resource requirements (water abstraction etc.)</li> <li>○ Emissions (disposal to land, water or air)</li> <li>○ Excavation Requirements</li> <li>○ Transportation Requirements</li> <li>○ Duration of construction, operation, decommissioning</li> <li>○ Other.</li> </ul>	<p>Discharges could give rise to elevated nutrients entering Crook Haven. 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.</p> <p>However the potential for the treatment plant to result in elevated nutrients within the waters is reduced by two main factors:</p> <ol style="list-style-type: none"> <li>1. The treatment provided is considered as appropriate as set out in the Urban Wastewater Treatment Regulation standards for p.e &lt;2000.</li> <li>2. The treated effluent enters the Crook Haven which is a large and well exchanged body of water with unlimited dilution capacity.</li> </ol> <p><b>1 The treatment provided is appropriate.</b>  <i>Treated effluent from the Crookhaven WWTP and receiving water quality were sampled as part of the Certificate of Authorisation application in 2009 (see appendix 2 for effluent testing results). The results of monitoring indicate that the wastewater treatment plant is not having a negative effect on the receiving waters.</i></p> <p><b>Note 1:</b> See appendix 2 for effluent quality results for 2009.</p>

	<p><b>Note 2:</b> The samples taken are grab samples.</p> <p><i>2 The treated effluent enters Crook Haven which is a large and well exchanged body of water with unlimited dilution capacity.</i></p>
<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> <li>○ Reduction in habitat area</li> <li>○ Disturbance to key species</li> <li>○ Habitat or species fragmentation</li> <li>○ Reduction in species density</li> <li>○ Changes in key indicators of conservation value (water quality etc)</li> <li>○ Climate Change</li> </ul>	<p><b>Reduction in habitat area:</b>  <i>Treated effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species within Crook Haven from the operation of this facility.</i></p> <p><b>Disturbance to key species:</b>  <i>The operation of the WWTP does not cause any disturbance to habitats &amp; species within the SAC.</i></p> <p><b>Habitat or species fragmentation:</b>  <i>No habitat fragmentation has been caused as a result of the operation of this facility.</i></p> <p><b>Reduction in species density:</b>  <i>Treated effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SAC is designated.</i></p> <p><b>Changes in key indicators of conservation value eg water quality:</b>  <i>While there is no ongoing monitoring of water quality for Crook Haven, some sampling and testing were done and submitted as part of the Wastewater Certificate of Authorisation Application. This testing, while insufficient for a complete analysis indicates that there is no deterioration in water quality associated with the Crookhaven discharge.</i></p>
<p>Describe any likely impacts on the Natura 2000 site as a whole in terms of:</p> <ul style="list-style-type: none"> <li>○ Interference with the key relationships that define the structure of the site</li> <li>○ Interference with key relationships that define the function of the site</li> </ul>	<p><b>Interference with the key relationships that define the structure of the site:</b>  <i>The structure of the SAC is not impacted by the operation of this facility.</i></p> <p><b>Interference with key relationships that define the function of the site:</b>  <i>The function of the SAC is not impacted by the operation of this facility.</i></p>
<p>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.</p>	<p>No significant impacts are predicted.</p>



### 3. Finding of No Significant Effects Report Matrix

Name of project or plan	Crookhaven WWTP discharge
Name and location of Natura 2000 site	Sheeps Head to Toe Head SPA & Barley Cove To Ballyrisode Point SAC
Description of the project or plan	The treatment system in Crookhaven is a primary treatment plant (septic tank). Built in the 1970's with a capacity of 31m <sup>3</sup> , it was originally designed for a p.e. of 160. Treated effluent from the septic tank outfalls to Crook Haven via an existing outfall pipe adjacent to the septic tank.
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No
<b>The assessment of significance of effects</b>	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site.	Discharges from the Crookhaven WWTP either alone or in combination with discharges from other sources could give rise to elevated nutrients entering Crook Haven and surrounding waters. 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.  The effluent discharged from Crookhaven is considered as appropriately treated under the Urban Wastewater Treatment Regulations, it is considered that the discharge from Crookhaven is not contributing negatively on the SAC or SPA.
Explain why these effects are not considered significant.	Appropriate treatment is being carried out as laid down in the Urban Waste Water Treatment Regulations and is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SAC & SPA are designated.
List of agencies consulted: provide contact name and telephone or email address	National Parks and Wildlife Service - Web site
Response to consultation	

<b>Data collected to carry out the assessment</b>			
Who carried out the assessment	Sources of data	Level of assessment completed	Where can the full results of the assessment be accessed and viewed



Orla O'Brien, Cork County Council	Water Quality Monitoring Data CCC; Waste water Discharge Assessment certificate application, Report prepared by Cork County Council	Desktop review of cited data.	This report.
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## Appendix 1: Ecological Data

### SITE SYNOPSIS

#### SITE NAME: SHEEP'S HEAD TO TOE HEAD SPA

#### SITE CODE: 004156

The Sheep's Head to Toe Head SPA is large site situated on the south-west coast of Co. Cork. It encompasses the high coast and sea cliffs from Sheep's Head to Mizen Head, Brow Head and Crookhaven in the west and from Baltimore to Tragumna Bay, Gokane Point and the Toe Head peninsula in the east. The site includes the sea cliffs, the land adjacent to the cliff edge (inland for 300 m), an area further inland to the east of Dunlough Bay, and also areas of sand dunes at Barley Cove and Crookhaven. The high water mark forms the seaward boundary. Most of the site is underlain by Devonian sandstones and mudstones, though Carboniferous rocks are also found on the Sheep's Head and Toe Head peninsulas.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Chough and Peregrine.

The Sheep's Head peninsula is the narrowest of the large peninsulas in the south-west of the county. Tall cliffs, c. 100 m high, occur at its end and hills rise up from much of the coast; pastures are concentrated along the southern side. Much of the land is of marginal agricultural value, with coarse grassland and heath predominating. The Mizen Head Peninsula, on the other hand, has a quantity of semi-improved agricultural grasslands and heath, as well as a sand dune system at Barley Cove. At Mizen Head, large areas of closely bedded sandstones and shales occur, and erosion of their joints has produced a spectacular array of red-brown and pink cliffs up to 130m high. The cliffs at Three Castle Head to the north are almost 100 m high. Further south and east, a convoluted stretch of coast with sheltered bays, estuaries and exposed headlands extends from Baltimore to Toe Head. The habitats present range from sea cliff, Gorse-dominated heath and rough grassland to good agricultural grassland.

The site supports an important population of breeding Chough, a Red Data Book species that is listed on Annex I of the E.U. Birds Directive; 80 breeding pairs were recorded from the site in the 1992 survey and 73 in the 2002/03 survey. The birds are found in pairs and flocks along the coast from Sheep's Head in the north to beyond Toe Head in the south. The Mizen Head cliffs hold some of the highest concentrations of breeding pairs in Ireland. Chough also occur inland.

At Sheep's Head, Chough are concentrated at the tip of the peninsula. An estimated 20 pairs bred in 1992, with 17 recorded in 2002, from Dooneen in the south to Glanroon in the north. Flocking and roosting activity is limited. During the winter of 2003/04, flocks of up to 27 birds were feeding on improved pastures around Caher. Roosting is confined to the southern side of the very extremity of the peninsula, with small numbers, of up to 8 birds, gathering occasionally. At Mizen Head, an estimated 46 pairs bred in 1992 and 30 in 2002, from Crookhaven in the south to Dunkelly in the north. The highest densities of breeding Chough are on and around Mizen Head

itself. Studies have shown that Chough forage mainly within 300 m inland of the cliff tops used for breeding and these areas have been included in the site. Flocking activity centres on the dunes at Barley Cove and around Dunlough Bay. Twenty-six birds were recorded in the dunes in October 2002, 52 in September 2003 and 26 in June 2004. A flock of 30-40 birds were recorded feeding during the winter of 2003/04, inland from Dunlough Bay on improved pastures and Gorse-dominated areas. Two roosts were identified in 2002 on the Mizen Head Peninsula, one at Brow Head (up to 25 birds), and one north of Mizen Head (up to 55 birds). The remainder of the breeding pairs in the site are scattered along the cliffs between Baltimore Head in the west and Toe Head in the east. A roost at Baltimore Head holds up to 15 birds (winter 2003/04).

Landuse is predominantly extensive grazing of sheep, but cattle-grazing also occurs, especially on the better quality land, notably to the south. Grazing and the resultant tight vegetation sward is beneficial to Chough. The habitats present are quite robust and there are few noticeable activities negatively impacting on the Chough population. However, there is a level of agricultural abandonment in places, notably on Sheep's Head and, to a lesser degree, on the Mizen Head Peninsula. The resultant rank vegetation renders some of these areas unavailable to feeding Chough. Also, the reduction in cattle numbers and increase in sheep numbers in the recent past, is less beneficial to Chough, as sheep-grazing results in a more uniform vegetation sward. One other potential threat is the residue left in livestock dung due to the application of broadspectrum anti-parasitic drugs.

The site supports an important Peregrine population (8 pairs in 2002); this species is listed on Annex I of the E.U. Birds Directive. The site also holds a nationally important population of Black Guillemot (137 individuals), as well as smaller populations of other breeding seabirds: Fulmar (57 pairs), Herring Gull (30 pairs), Shag (17 pairs), Kittiwake (20 pairs) and Great Black-backed Gull (1 pair) – all seabird data from 1999, 2001 and 2002.

The Sheep's Head to Toe Head SPA is one of the most important sites in the country for Chough. It also supports an important Peregrine population as well as a range of breeding seabirds, including a population of Black Guillemot of national importance. The presence of Chough and Peregrine, both species that are listed on Annex I of the E.U. Birds Directive, is of particular significance.

13.11.2006



## SITE SYNOPSIS

**SITE NAME: BARLEY COVE TO BALLYRISODE POINT SAC**

**SITE CODE: 001040**

This site is situated on the Mizen Head peninsula in the extreme south-west of County Cork. It straddles a 10 km stretch of coastline from the Barley Cove inlet to Ballyrisode Point at Toormore Bay. The rock type is Old Red Sandstone. This displays a NE-SW folding which is especially visible at Crookhaven and Brow Head.

While rocky heath is the dominant habitat, the site is most important for the sand dunes and related habitats which occur at Barley Cove. A fine gradation of habitat is shown, from the outer sandy beach, through dunes and salt marshes, and then brackish lagoon. Of particular importance is the fixed dune habitat, as this is a priority habitat on Annex I of the EU Habitats Directive, and is one of the few examples in county Cork and south Co. Kerry. This dune system is of moderate size and relatively intact. It grades from an outer ridge of white *Ammophila* dunes, through fixed dune hills and into an extensive area of dune grassland. A characteristic flora is displayed, with species such as Lady's Bedstraw (*Galium verum*), Common Birds-foot-trefoil (*Lotus corniculatus*), Wild Pansy (*Viola tricolor* subsp. *curtisii*) and Red Fescue (*Festuca rubra*). The moss and lichen component is well developed in places and includes *Tortula ruraliformis* and *Peltigera canina*. Long-term erosion by the tidal river has reduced the size of the dune system, though sand has been deposited elsewhere in the area.

The dunes merge with a substantial area of salt marsh which displays characters of both Atlantic and Mediterranean salt meadows (both Annex I habitats). Sea Rush (*Juncus maritimus*) is a dominant species, while other salt marsh species include Common Saltmarsh-grass (*Puccinellia maritima*), Sea-milkwort (*Glaux maritima*) and Sea Plantain (*Plantago maritima*). A fringe of Glasswort (*Salicornia* spp.) occurs at the lowermost part of the salt marsh and above the tidal river. Lissagriffin Lake, while of artificial origin, displays characteristics of a brackish lagoon, with such species as Sea Club-rush (*Scirpus maritimus*) and Tasselweed (*Ruppia* sp.). Reeds occur along the eastern and northern margins of the lagoon.

Fine sandy beaches, with associated intertidal sand flats, occur at Barley Cove and White Strand. The intertidal flats at White Strand are well sheltered and have a typical invertebrate macrofauna. Molluscs are well represented in the mid shore zone, including the Common Cockle (*Cerastoderma edule*) and the Thin Tellin (*Tellina tenuis*). The low shore is characterised by an abundance of polychaetes, especially the Sand Mason (*Lanice conchilega*). The razorshells *Ensis arcuatus* and *Solen marginatus* are also typical low shore species, as is the Sand Gaper (*Mya arenaria*).

The site has extensive lengths of rocky shoreline, which develop into low cliffs in places. Shingle, another important coastal habitat listed on Annex I, occurs mostly in sheltered coves. At one location, Sea Kale (*Crambe maritima*), a Red Data Book species, occurs commonly on the shingle.

The dominant habitat over much of the remainder of the site is coastal heath, which is of high conservation value. This occurs from the maritime shoreline to the highest point of the site (164 m). It is varied in character, ranging from shallow dry soils to wet peaty pockets. The heath is primarily made up of woody species, including Western Gorse (*Ulex gallii*), Bell Heather (*Erica cinerea*) and Ling (*Calluna vulgaris*). Purple Moor-grass (*Molinia caerulea*) is ubiquitous, with other character species such as Tormentil (*Potentilla erecta*), Lousewort (*Pedicularis sylvatica*) and Heath Milkwort (*Polygala serpyllifolia*).

A notable feature of the site is the concentration of rare plants associated with the heath habitat: two legally protected species (Flora (Protection) Order 1999), Hairy Bird's-foot-trefoil (*Lotus subbiflorus*) and Lanceolate Spleenwort (*Asplenium billotii*), and three Red Data Book species, Pale Dog-violet (*Viola lactea*), Green-winged Orchid (*Orchis morio*), Bird's-foot (*Ornithopus perpusillus*) and Spotted Rock-rose (*Tuberaria guttata*), occur in places. A further scarce plant which occurs at the site is the Strawberry Tree (*Arbutus unedo*).

The site is of notable ornithological importance for Chough (Annex I Birds Directive species), with 9 breeding pairs in 1992. In addition to nesting, substantial numbers of Choughs utilise the heath and sandy habitats for feeding and socialising. Lissagriffin Lake is of some local importance for wintering waterfowl, including Whooper Swans (up to 16 at times) and Mute Swans (up to 40). Small numbers of seabirds breed on the cliffs, including Fulmar (41 pairs), Lesser Black-backed Gull (9 pairs), Herring Gull (133 pairs), Shag (39 pairs), and Black Guillemot (1-5 pairs) (all counts in 1985).

The main landuses at this site are grazing and tourism related activities. Most of the site is grazed by livestock, though not intensively. Rabbits, however, are frequent at the sand dunes and have caused serious damage. The beach and dunes at Barley Cove are utilised by day-trippers and campers during the summer months and parts of the dune system has been damaged by heavy usage.

This site is of conservation importance for the presence of a number of good examples of coastal habitats. Of particular significance are the areas of dry heath and fixed dune (the latter, a priority habitat listed on Annex I of the EU Habitats Directive). The concentration of rare plants is of especial note, as is the high density of Choughs.



2 Map of Sheeps Head To Toe Head SPA (Partly Only) & Barley Cove To Ballyrisode Point SAC & location of Crookhaven.



The treatment system in Crookhaven is a primary treatment plant (septic tank) adjacent to the Shoreline. Built in the 1970's with a capacity of 31m<sup>3</sup>, it was originally designed for a p.e. of 160. Treated effluent from the septic tank outfalls to Crook Haven via an existing outfall pipe adjacent to the septic tank.

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Appendix 2: Treated Effluent Quality Data 2009.

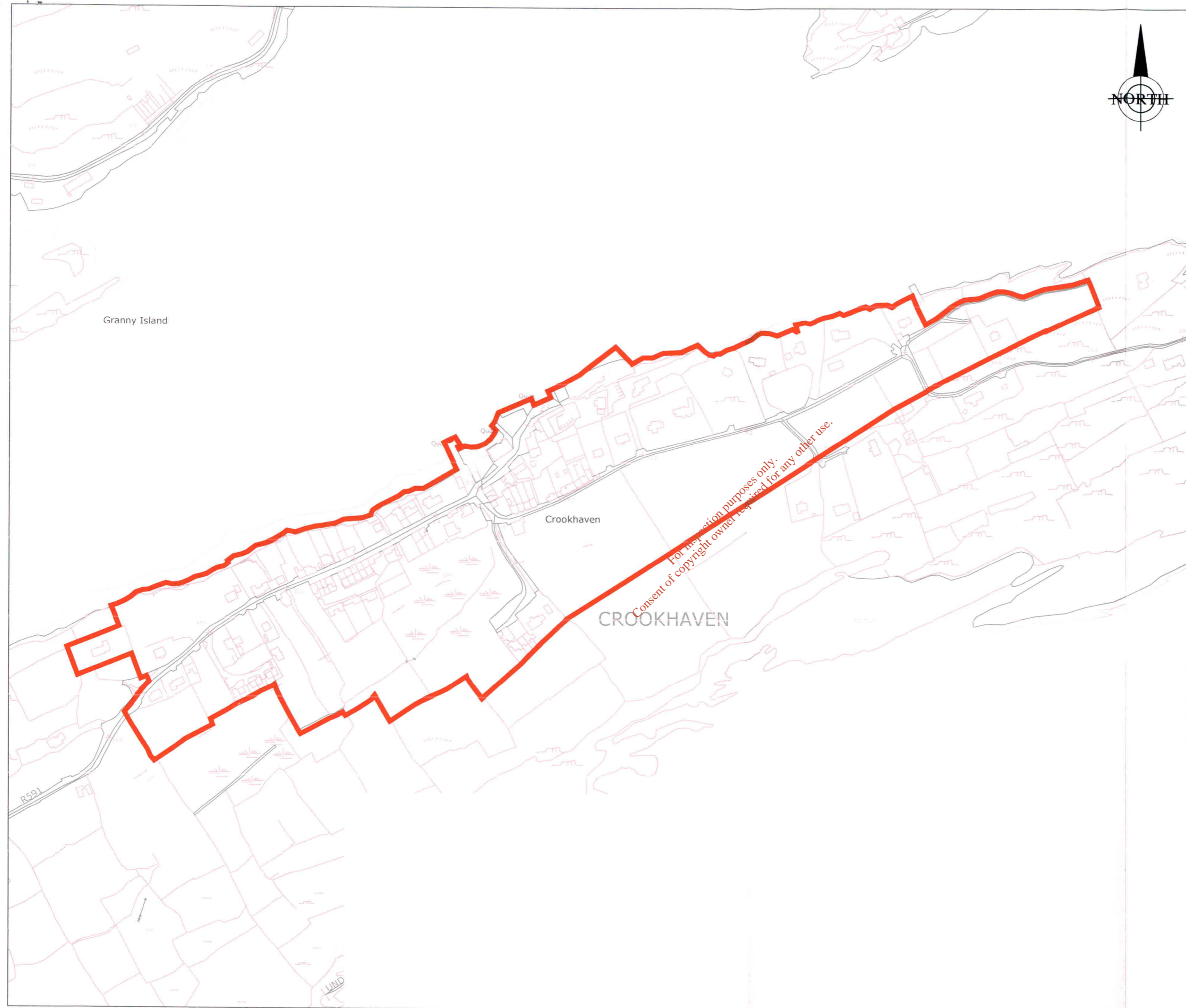
Attachment E4 Crookhaven Table E4			
Sample Date	13/10/2009		13/10/2009
Sample	Effluent discharge		ambient downstream
Sample Code	GT1268		GT1269
Flow M <sup>3</sup> /Day			
pH	6.5		8.1
Temperature °C			
Cond 20°C	836		47200
SS mg/L	80		14
NH <sub>3</sub> mg/L	26.0		0.6
BOD mg/L	305		1
COD mg/L	624		<21
TN mg/L			
Nitrite mg/L			
Nitrate mg/L			
TP mg/L			<0.05
O-PO <sub>4</sub> -P mg/L			<0.05
SO <sub>4</sub> mg/L	<30		saline interference
Phenols µg/L			
Atrazine µg/L	<0.01		
Dichloromethane	<1		
Simazine µg/L	<0.01		
Toluene µg/L	13.71		
Tributyltin µg/L			
Xylenes µg/L	<0.73		
Arsenic µg/L	1.1		
Chromium ug/L	<20		<20
Copper ug/L	50.4		<20
Cyanide µg/L	<5		
Fluoride µg/L			
Lead ug/L	<20		<20
Nickel ug/L	<20		<20
Zinc ug/L	64.4		<20
Boron ug/L	55.1		3304
Cadmium ug/L	<20		<20
Mercury µg/L			
Selenium µg/L			
Barium ug/L	<20		<20

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  2. All dimensions to be checked on site.
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**LEGEND**

 AGGLOMERATION BOUNDARY

No.	Date	Drawn	Checked	Revision Description
A	Jan 2011	OOB		Agglomeration Boundary Revised

**Cork County Council,  
Western Division.**

	N.O'MAHONY, B.E., SENLENGR. (WATER SERVICES), COURTHOUSE, SKIBBEREEN.
	M. MURRELL, DIRECTOR OF SERVICES WEST CORK

**Job Title:**  
WASTE WATER DISCHARGE  
CERTIFICATE APPLICATION  
CROOKHAVEN  
AGGLOMERATION

**Drawing Title:**  
ATTACHMENT B.1  
AGGLOMERATION BOUNDARY

<b>Prepared By:</b> A.O'BRIEN	<b>Checked By:</b> D.GROARKE	<b>Date:</b> JUN.2009
<b>Drawing number:</b> CROO_B1_01	<b>Scales:</b> 1:2500	<b>Rev:</b> A