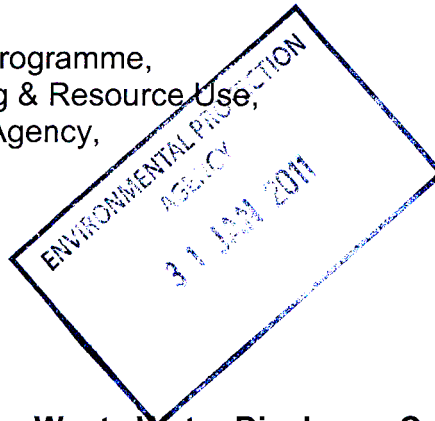


Web:<http://www.corkcoco.com/>

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



28th January 2011

**Re: A0405-01 – Tragumna Waste Water Discharge Certificate of Authorisation
– Reply to Notice in accordance with Regulation 25(c)(ii) of the Waste Water
Discharge (Authorisation) Regulations 2007**

Dear Ms. Stafford,

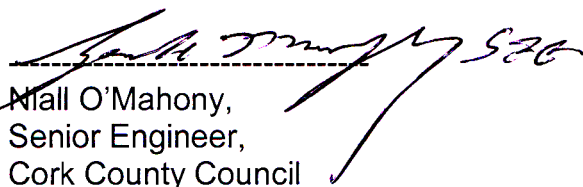
I refer to your letter of the 14th December 2010 concerning the above. The following is our reply to your request for further information in accordance with Regulation 25(c)(ii).

Assessment of Effects of the Waste Water Discharges

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 is approximately 200m from Lough Hyna Nature Reserve & Environs SAC and approximately 80m for Sheeps Head to Toe Head SPA. The treatment plant serves a PE of 11 and is domestic wastewater only. The plant discharges into a culvert which then discharges to the sea at Tragumna Bay. This bay is a large well exchanged body of water with high dilution. A Habitats Directive Assessment (Screening Report) for Tragumna Agglomeration has been carried out and is attached. It can be concluded from this that an appropriate assessment is not required for this agglomeration.

Yours sincerely,


Niall O'Mahony,
Senior Engineer,
Cork County Council

Enclosures

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Wastewater Discharge Certificate Application: A0405-01 Tragumna

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

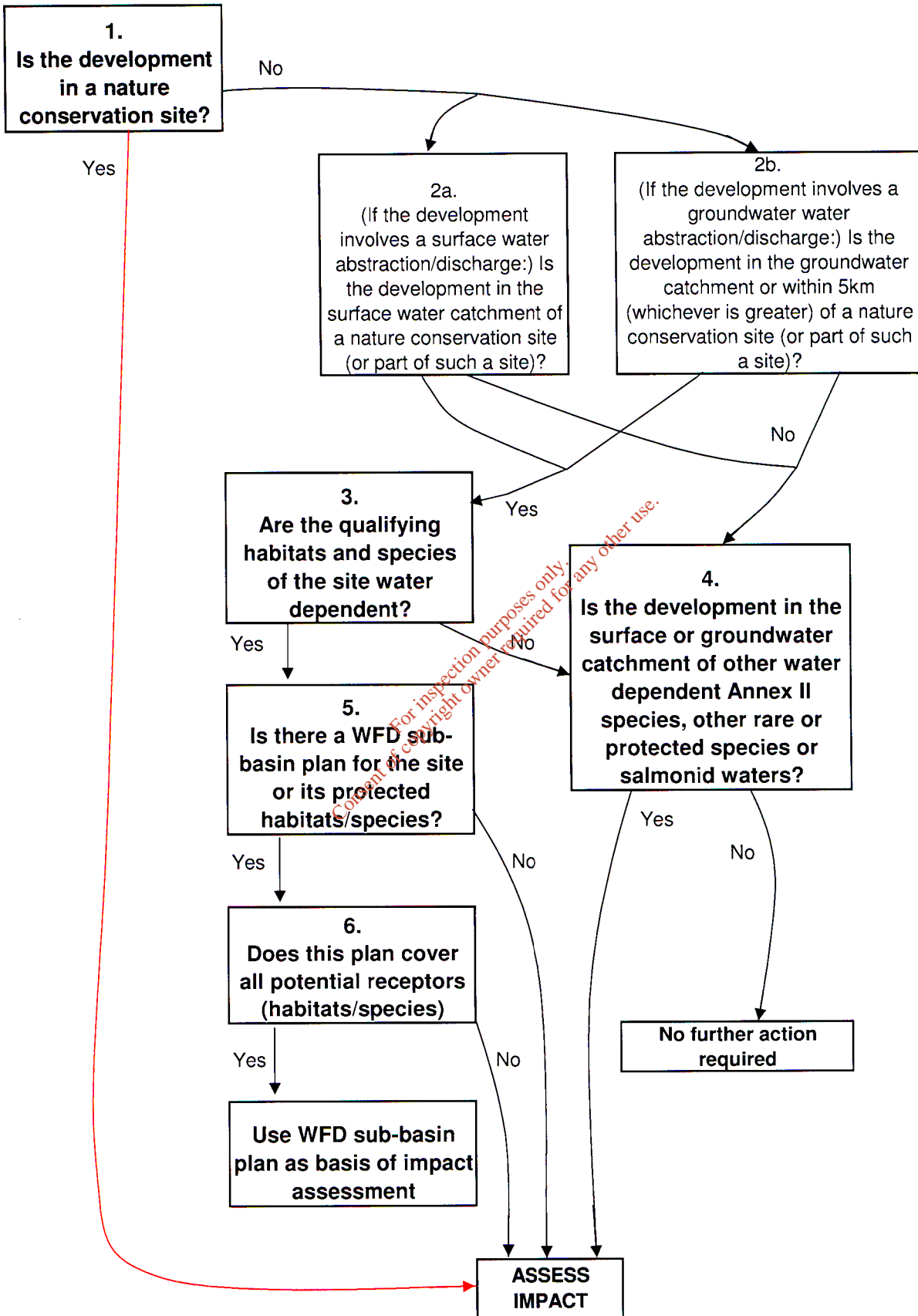
APPENDIX 1

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?	Yes
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 Tragumna

Habitats Directive Assessment (Screening Report) in respect of

Application by Cork County Council to the EPA

for discharge certificate in respect of

Tragumna Agglomeration

A0405-01

January 2011

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1 Introduction

- 1.1 Tragumna is a small coastal resort 6km south of Skibbereen. The wastewater treatment plant consists of primary & secondary treatment. The wastewater first passes through a septic tank and from there the wastewater drains to a small sump where it passes through a screen and pumped up into the Puraflo wastewater treatment system. The septic tank has a design PE of 11. The treated wastewater is discharged to an adjacent culvert which in turn discharges to the sea.
- 1.2 The plant is located approximately 200m from Tragumna Bay. The discharge from the plant enters a culvert which in turn discharges to the sea. The discharge point is not within a Natura 2000 designated site but it is approximately 200m from the Lough Hyne Nature Reserve & Environs SAC and approximately 70m from Sheeps Head to Toe Head SPA 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 Tragumna Waste Water Treatment Plant on the adjacent Lough Hyne Nature Reserve & Environs SAC and Sheeps Head to Toe Head SPA 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	Tragumna WWTP, Tragumna, Co. Cork. See attached Map.
Description of the key components of the project	The treatment system in Tragumna is a primary & secondary treatment plant adjacent to the Traguman Bay. The plant has a design PE of 11. Treated effluent from the plant outfalls to a culvert which discharges to Tragumna Bay.
Distance from designated sites in potential impact zone*	The discharge point is approximately 70m for the Lough Hyne Nature Reserve & Environs SAC and approximately 200m from the Sheeps Head to Toe Head SPA.

Site 1

2.2 Description of the Natura 2000 sites within the potential impact zone ¹	
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 Tragumna Wastewater Treatment Plant enters Tragumna Bay.</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 pairs), Shag (17 pairs), Kittiwake (20 pairs) and Great Black-</p>

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.

	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"> • population data on the species concerned indicate that it is maintaining itself, and • the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and • there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long term-basis <p><i>Source - National Parks and Wildlife Service</i></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>Discharge from Tragumna WWTP: Treated wastewater from the Tragumna Waste Water Treatment Plant is discharged to Tragumna Bay adjacent to the Sheep Head to Toe Head SPA.</p> <p>The discharge consists of treated effluent from the Tragumna Waste Water Treatment Plant.</p> <p>Other Discharges within the SPA: Crookhaven WWTP discharges to Crook Haven 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:	<p>Discharges could give rise to elevated nutrients entering Tragumna Bay. 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"> 1. The treatment provided is considered as appropriate as set out in the Urban Wastewater Treatment Regulation standards for p.e <2000. 2. The treated effluent enters the Crook Haven which is a large and well exchanged body of water with unlimited dilution capacity.

<ul style="list-style-type: none"> ○ Excavation Requirements ○ Transportation Requirements ○ Duration of construction, operation, decommissioning ○ Other. 	<p>1 The treatment provided is appropriate. <i>Treated effluent from the Tragumna 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>Note 1: See appendix 2 for effluent quality results for 2009.</p> <p>Note 2: The samples taken are grab samples.</p> <p>2 The treated effluent enters Tragumna Bay which is a large and well exchanged body of water with unlimited dilution capacity.</p>
<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> ○ Reduction in habitat area ○ Disturbance to key species ○ Habitat or species fragmentation ○ Reduction in species density ○ Changes in key indicators of conservation value (water quality etc) ○ Climate Change 	<p>Reduction in habitat area: <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 Tragumna Bay from the operation of this facility.</i></p> <p>Disturbance to key species: <i>The operation of the WWTP does not cause any disturbance to habitats & species within the SPA.</i></p> <p>Habitat or species fragmentation: <i>No habitat fragmentation has been caused as a result of the operation of this facility.</i></p> <p>Reduction in species density: <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>Changes in key indicators of conservation value eg water quality: <i>While there is no ongoing monitoring of water quality for Tragumna, 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 Tragumna 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"> ○ Interference with the key relationships that define the structure of the site ○ Interference with key relationships that define the function of the site 	<p>Interference with the key relationships that define the structure of the site: <i>The structure of the SPA is not impacted by the operation of this facility.</i></p> <p>Interference with key relationships that define the function of the site: <i>The function of the SPA is not impacted by the operation of this facility.</i></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.	No significant impacts are predicted.
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Site 2

2.2 Description of the Natura 2000 sites within the potential impact zone ²	
Name	Lough Hyne Nature Reserve & Environs Special Area of Conservation
Site Code	000097
Site Description	<p>This is a large coastal site (>400 ha.) situated just east of Roaringwater Bay some 5km south-west of Skibbereen, county Cork. It includes Lough Hyne Nature Reserve on its western end, Ballyally Lough, the adjacent marshland area along the Bealarree stream and the coastline eastwards to Gokane Point, including Tragumna Bay.</p> <p>The discharge from the Tragumna Wastewater Treatment Plant enters Tragumna Bay.</p> <p>More information on the Lough Hyne Nature Reserve & Environs Special Area of Conservation is contained appendix 1 of this document.</p>
Qualifying Interests of Lough Hyne Nature Reserve & Environs Special Area of Conservation	<p>Large shallow inlets and bays; Reefs; Submerged or partly submerged sea caves.</p>
Other Notable Features of Lough Hyne Nature Reserve & Environs Special Area of Conservation	<p>The Site Synopsis is contained in appendix 1.</p> <p>Chough Raven & Peregrine</p>
Conservation Objectives	<p>Objective 1: To maintain the Annex I habitats for which the cSAC has been selected at favourable conservation status: Large shallow inlets and bays: Reefs; Submerged or partly submerged sea caves.</p> <p>Objective 2: To maintain the extent, species richness and biodiversity of the entire site.</p> <p>Objective 3: To establish effective liaison and co-operation with landowners, legal users and relevant authorities.</p> <p><i>Source - National Parks and Wildlife Service</i></p>

² 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.

2.3 Assessment Criteria

<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>Discharge from Tragumna WWTP: <i>Treated wastewater from the Tragumna Waste Water Treatment Plant is discharged to Tragumna Bay close to the Lough Hyne Nature Reserve & Environs Special Area of Conservation</i></p> <p><i>The discharge consists of treated effluent from the Tragumna Waste Water Treatment Plant.</i></p> <p>Other Discharges within the SAC: <i>No other discharge</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"> ○ Size and scale ○ Land-take ○ Distance from the Natura 2000 site or key features of the site: ○ Resource requirements (water abstraction etc.) ○ Emissions (disposal to land, water or air) ○ Excavation Requirements ○ Transportation Requirements ○ Duration of construction, operation, decommissioning ○ Other. 	<p>Discharges could give rise to elevated nutrients entering Tragumna. 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"> 1 The treatment provided is considered as appropriate as set out in the Urban Wastewater Treatment Regulation standards for p.e <2000. 2 The treated effluent enters the Crook Haven which is a large and well exchanged body of water with unlimited dilution capacity. <p>1 The treatment provided is appropriate. <i>Treated effluent from the Tragumna 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>Note 1: See appendix 2 for effluent quality results for 2009.</p> <p>Note 2: The samples taken are grab samples.</p> <p>2 The treated effluent enters Tragumna Bay which is a large and well exchanged body of water with unlimited dilution capacity.</p>
<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> ○ Reduction in habitat area 	<p>Reduction in habitat area: <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 Tragumna Bay from the operation of this facility.</i></p>

<ul style="list-style-type: none"> ○ Disturbance to key species ○ Habitat or species fragmentation ○ Reduction in species density ○ Changes in key indicators of conservation value (water quality etc) ○ Climate Change 	<p>Disturbance to key species: <i>The operation of the WWTP does not cause any disturbance to habitats & species within the SAC.</i></p> <p>Habitat or species fragmentation: <i>No habitat fragmentation has been caused as a result of the operation of this facility.</i></p> <p>Reduction in species density: <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>Changes in key indicators of conservation value eg water quality: <i>While there is no ongoing monitoring of water quality for Tragamna, 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 Tragamna 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"> ○ Interference with the key relationships that define the structure of the site ○ Interference with key relationships that define the function of the site 	<p>Interference with the key relationships that define the structure of the site: <i>The structure of the SAC is not impacted by the operation of this facility.</i></p> <p>Interference with key relationships that define the function of the site: <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	Tragamna WWTP discharge
Name and location of Natura 2000 site	Sheeps Head to Toe Head SPA & Lough Hyne Nature Reserve & Environs Special Area of Conservation
Description of the project or plan	The treatment system in Tragamna has primary & secondary treatment. It has a designed for a p.e. of 11. Treated effluent from the plant outfalls to Tragamna Bay via a culvert adjacent to the plant.

Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No
The assessment of significance of effects	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site.	<p>Discharges from the Tragumna WWTP either alone or in combination with discharges from other sources could give rise to elevated nutrients entering Tragumna Bay 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.</p> <p>The effluent discharged from Tragumna is considered as appropriately treated under the Urban Wastewater Treatment Regulations, it is considered that the discharge from Tragumna is not contributing negatively on the SAC or SPA.</p>
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	

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
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.

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: LOUGH HYNE NATURE RESERVE AND ENVIRONS SAC

SITE CODE: 000097

This is a large coastal site (>400 ha.) situated just east of Roaringwater Bay some 5km south-west of Skibbereen, county Cork. It includes Lough Hyne Nature Reserve on its western end, Ballyally Lough, the adjacent marshland area along the Bealariree stream and the coastline eastwards to Gokane Point, including Tragumna Bay. The site therefore encompasses a range of both marine and terrestrial habitats, including three habitats listed on Annex I of the EU Habitats Directive.

Lough Hyne is a deep landlocked bay joined by a narrow channel (Barloge Creek) to the sea. It is situated on alternating bands of lower Old Red Sandstone and Carboniferous slates. Approximately 4,000 years ago in post-glacial times this was a freshwater lake, but due to the post-glacial rise in sea-level it is now saline. The narrowness of the connecting sea channel means that the tidal fluctuations are reduced to approximately 1m and consequently the zonation of the intertidal communities is confined to a narrow band along the shore. Another unusual feature of the site is the rapids created in the narrow channel when the tidal levels inside and outside the lough differ.

The site contains reefs which are very exposed to wave action on the open coast, as well as extremely sheltered reefs within the Lough, the latter is a very rare habitat in Ireland. Reefs are listed on Annex I of the EU Habitats Directive. Many of the communities found on the reefs are more characteristic of the exposed open coast and in Lough Hyne the sponge dominated communities occur at much shallower depths than on the open coast. Lough Hyne has been extensively studied and is known to have a very high species diversity and very high species richness for such a small area.

On the open coast and within the Lough the rocky shores are renowned for the presence of the Mediterranean sea urchin *Paracentrotus lividus*. This is the most easterly limit for this species in Ireland. Dense stands of the kelp *Laminaria saccorhiza* are found in the rapids with a species rich faunal community under the boulders. Within the lough the shallow subtidal reefs may be characterised by a mixed kelp forest of *Laminaria saccharina* and *Sacchariza polyschides* with some *Laminaria digitata* and foliose red algae while in other areas *Laminaria saccharina* and *Cystoseira species* are the characterising algae. At the entrance to the lough where there is strong water movement the brown algae *Halydris siliquosa* and mixed kelp species are characteristic, a community that is typical of moderately exposed tide swept areas. With increasing depth at this area communities more characteristic of areas expose to wave action on the open coast are found; sponges hydroids, cupcorals, solitary sea squirts and red algae dominate the boulders. The vertical surfaces are colonised by the jewel anemone, the sponge *Esperiopsis fucorum* and solitary sea squirts; a bryozoan turf of *Crisia* species may also be present. Cobbles, pebbles and gravel support a community of keel worm *Pomatoceros triqueter*, the barnacle *Balanus crenatus* and bryozoan crusts.

In sheltered areas away from the turbulent water entering the lough much of the rock is covered by solitary sea squirts and sponges. The cliffs within the lough support a wide variety of sponges the cup coral and a community characterised by the rare soft coral *Paraerythropodium coralloides* which is more characteristic of open water. Rare sponges that are known to occur within the lough includes *Plakortis simplex* and *Halicnemis patera*. Two rare gobies are found in Lough Hyne: Couche's goby *Gobius couchi* and the Red-mouthed goby *Gobius cruenatatus*. Two sea-slugs more commonly found in the Mediterranean occur in Lough Hyne: *Dicata odhneri* and *Facelina dubia*. The southern cup coral *Caryophyllia inornatus* occurs close to the rapids and is the only known site in Ireland for this species. 75% of the marine algae on the national species list have been recorded in the area. These include the rare species *Osmundea truncata*, *Gymnogrongris devoniensis* and *Notastoma canariensis*. Large mats of the red algae *Trilliella* also occur.

Much of the floor of Lough Hyne is soft mud, but areas of pebbles, gravel and muddy sand also occur in shallow water around the edges of the lough. In sheltered areas the pebbles and gravel are colonised by solitary sea squirts while the sand and mud are colonised by burrowing anemones. The scallop *Pecten maximus* may also be present and in some areas the Dublin Bay prawn *Nephrops norvegicus* is common. Outside the Lough in Southern Bay and Barloge Bay dense stands of Eelgrass (*Zostera marina*) occur growing on coarse sand.

There is a large cave on the south-western side of Bullock Island. The brown alga *Laminaria hyperborea* occurs at the entrance and a short distance into the cave due to good light penetration. The red alga *Cryptopleura ramosa* occurs on the sides of the cave and into the intertidal areas within the cave. Rockpools within the cave are characterised by sheets of the jewel anemone *Corynactis viridis*, a species found in areas subject to wave action.

To the north of Lough Hyne is the mixed woodland of Knockomagh, whose species include Oak (*Quercus petraea*), Beech (*Fagus sylvatica*) and Sycamore (*Acer pseudoplatanus*) with some Holly (*Ilex aquifolium*) and Yew (*Taxus baccata*). However, there has been much planting of coniferous species such as Sitka spruce (*Picea sitchensis*), Lodgepole pine (*Pinus contorta*) and Larch (*Larix* spp.) in the wood over the last 30 years.

Surrounding the lough are areas of heathland with western gorse (*Ulex gallii*) and Bracken (*Pteridium aquilinum*), scrub woodland and some improved agricultural grassland. The land to the east includes Ballyally Lough and Bealariree Marsh. The northern end of the marsh supports some wet woodland with Willow (*Salix* spp.) and Alder (*Alnus glutinosa*); the marsh itself is dominated by the Common Reed (*Phragmites australis*), with much wild celery (*Apium graveolens*) in the upper reaches of Bealariree stream.

The remainder of the site follows the rocky coastline, whose physical features include marine caves, a habitat listed on Annex I of the EU Habitats Directive, cliffs and a blow-hole. The cliffs on the eastern edge of Tragumna Bay are used by small numbers of breeding seabirds, as well as breeding Raven, Peregrine and Chough. The last two

species are listed on Annex I of the EU Birds Directive. Fields to the northeast of Gokane Point also contain the rare Red Data Book species, Sharp-leaved Fluellen (*Kickxia elatine*). Because it is nearly land-locked with relatively little tidal exchange of water, Lough Hyne is vulnerable to the effects of eutrophication. Polluting operations around the lake (including heavy fertilization of agricultural land), and pollution of the streams and drains which feed into the lough, should be prevented where possible. The lough is also used by scuba-divers and field studies groups and disturbance of the habitats and the removal of biological material, especially of Shellfish (e.g. Scallop, Sea Urchins and Lobster) is a potential threat.

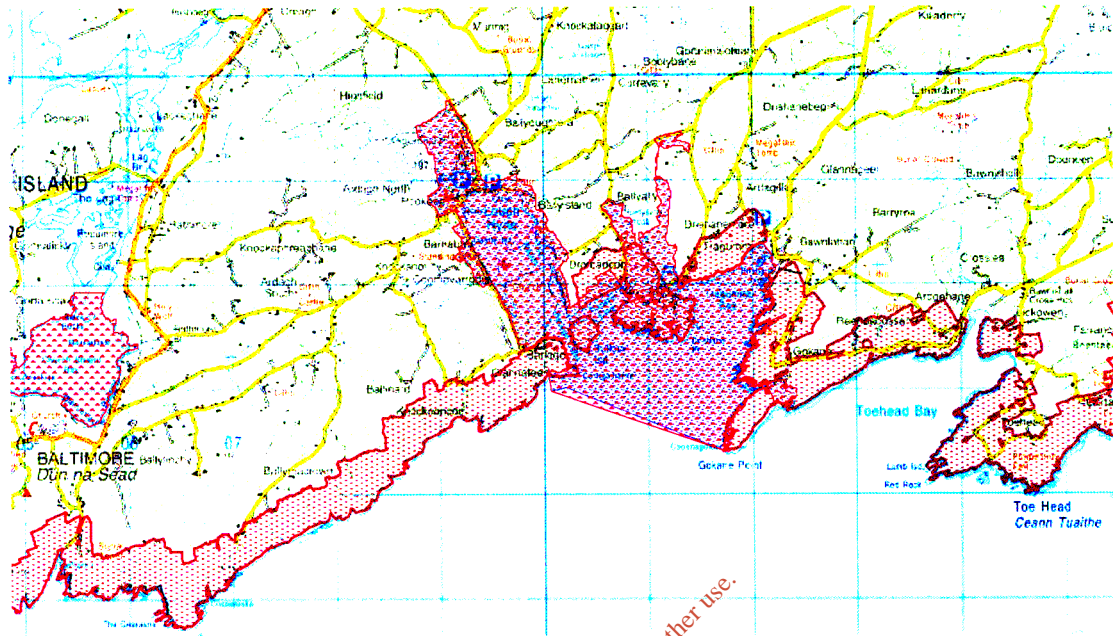
Lough Hyne has been recognised as an internationally important ecological site, with both botanical and zoological interest. The surrounding coastland area also supports a range of habitats which are both scientifically interesting and very scenic. This site contains important examples of three habitats listed on Annex I of the EU Habitats Directive. The high species diversity and the presence of a number of rare and unusual species adds further interest to the area.

17.9.2001

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Appendix 2 : Maps

Sheeps Head To Toe Head SPA (Partly Only) & Lough Hyne Nature Reserve & Environs SAC & location of Tragumna.



The treatment system in Tragumna is a primary & secondary treatment plant adjacent to the Traguman Bay. The plant has a design PE of 11. Treated effluent from the plant outfalls to a culvert which discharges to Tragumna Bay.

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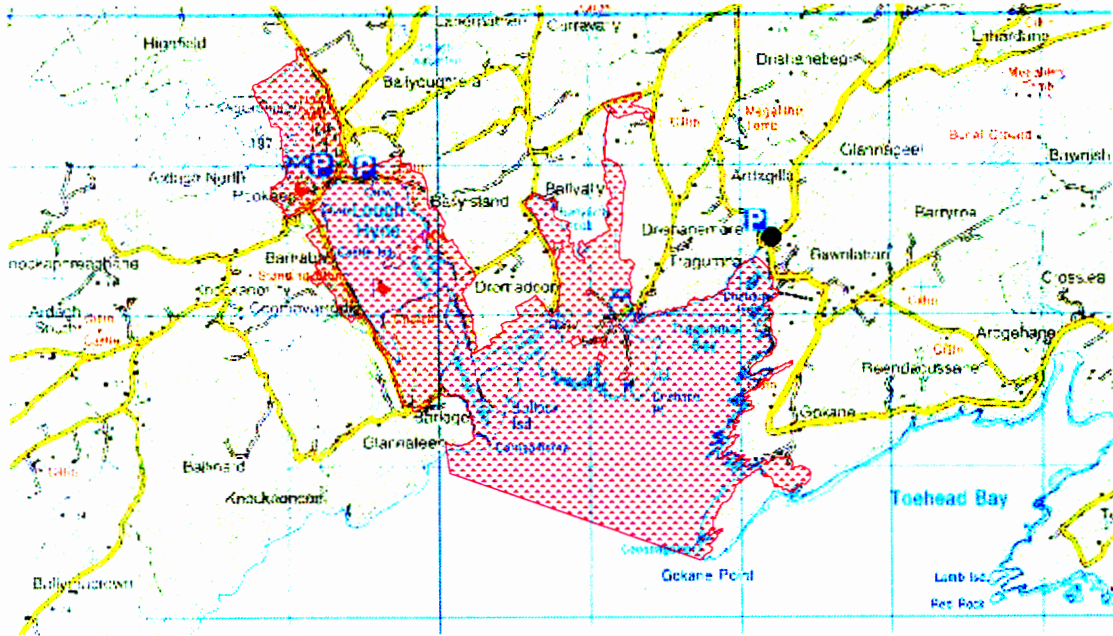
Appendix 2: Treated Effluent Quality Data 2009.

Attachment E4 Tragumna Table E4				
Sample Date	06/10/2009		05/10/2009	
Sample	Primary Discharge Point Effluent		Coastal d/s Ambient Sample	
Sample Code	GT1227		GT1226	
Flow M ³ /Day				
pH	8.3		8.1	
Temperature °C				
Cond 20°C	29500		47500	
SS mg/L	5		10	
NH ₃ mg/L	0.5		0.5	
BOD mg/L	4		<1	
COD mg/L	37		<21	
TN mg/L				
Nitrite mg/L				
Nitrate mg/L				
TP mg/L	0.055		<0.05	
O-PO4-P mg/L	<0.05		<0.05	
SO4 mg/L	saline interference		saline interference	
Phenols µg/L				
Atrazine µg/L	<0.01			
Dichloromethane	-			
Simazine µg/L	<0.01			
Toluene µg/L	<0.23			
Tributyltin µg/L	not required		not required	
Xylenes µg/L	<0.72			
Arsenic µg/L	1.1			
Chromium µg/L	<20		<20	
Copper µg/L	<20		<20	
Cyanide µg/L	<5			
Fluoride µg/L				
Lead µg/L	<20		<20	
Nickel µg/L	<20		<20	
Zinc µg/L	<20		<20	
Boron µg/L	<20		237	
Cadmium µg/L	<20		<20	
Mercury µg/L	<0.02			
Selenium µg/L	30.5			
Barium µg/L	<20		<20	

saline interference

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Appendix 3:
Map showing locations of all discharges into Lough Hyne Nature Reserve & Environs SAC.



Map showing locations of all discharges into Sheep Head To Toe Head SPA.

