

Administration,
Environmental Licensing Programme,
Office of Climate, Licensing & Resource Use,
Environmental Protection Agency,
headquarters,
POBox3000,
Johnstown, Castle Estate,
County Wexford.
Your Ref.: D0425-01
Our Ref. : MS /RS/11

Sub.: kilbrittain Agglomeration (Register No. D0425-01) Regulation 16 of the Waste Water Discharge (Authorisation) Regulations 2007

Dear Sir/Madam,

With reference to your letter of the 22 of September 2010, please find the following attached:

- 1 Original of the Kilbrittain Agglomeration (Register No.D0425 -01) Regulation 18(3)(b) Further Information Response & attachments.
- 1 Copy of the Kilbrittain Agglomeration (Register No.D0425 -01) Regulation 18(3)(b) Further Information Response & attachments.
- 1 CDROM with the Further Information Response & attachments in PDF Format.

Yours faithfully,

Noel O'Keeffe,
County Engineer & Director of Water Services,
Cork County Council,
County Hall, Cork.
22nd December 2011

Kilbrittain Regulation 18 Further Information Response

Question 1 Assess the likelihood of significant effect of the waste water discharges from the above agglomerations on the relevant European sites by referring to Circular L8/08 “Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments” issued by the Department of Heritage and Local Government. In particular, the flow diagram in Appendix 1 should be completed and the results of each section recorded. Provide details of the results of this assessment within one month of the date of this notice and provide a reasoned response for the decision. If significant effects are likely then and appropriate assessment must be carried out and a report of this assessment forwarded to the Agency by the date specified below. You are advised to provide the requested information in accordance with the “Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. 684 of 2007)”.

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Wastewater Discharge Licence Application: D0425-01 Killbrittain

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

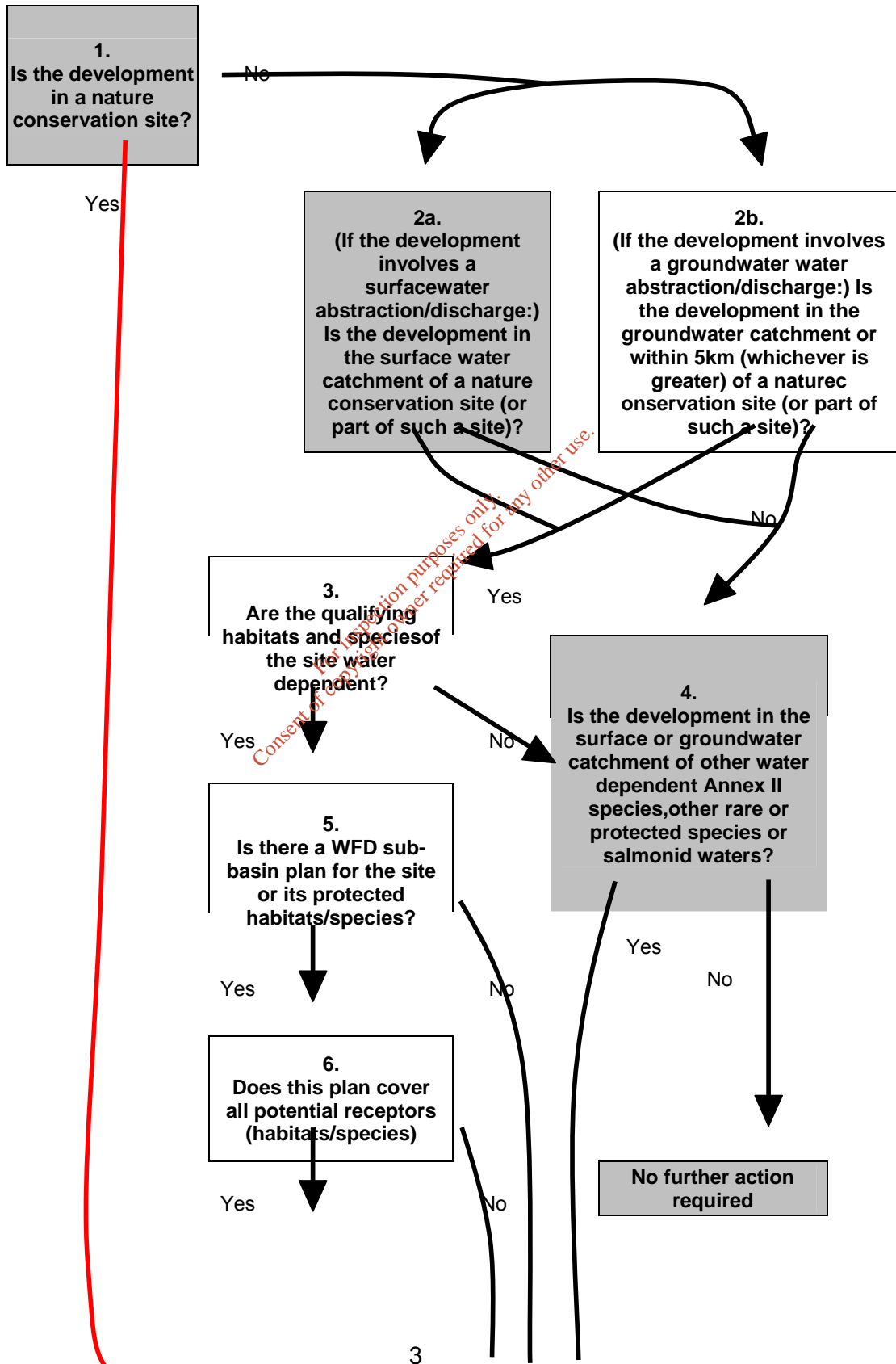
APPENDIX 1

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? SAC 001230 & SPA 004219 and pNHA 001230	Yes
2. Will nationally protected species be directly impacted? Wildlife Acts (1976 and 2000), Flora Protection order (S.I. 94 of 1999)?	Yes
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?	Yes
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 for Kilbrittain Agglomeration



**ASSESS
IMPACT**

Conclusion: A Screening Assessment is required for this Agglomeration

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Habitats Directive Assessment (Screening Report) in respect of Application by Cork County Council to the EPA for Wastewater Discharge License for Killbrittain Agglomeration.

October 2011

1 Introduction

1.1 Kilbrittain is located in south Cork approximately 10km south of Bandon on the Regional Road R603.

The waste water collection system for Kilbrittain is a partially combined system. There are a number of separate storm drains in the village. Surface water is collected and discharged to local watercourses; foul sewerage is collected and discharged to the WWTP. The Waste water Treatment Plant is located to the west of the village, just off the R603 road to Ballinspittle.

Waste water flows by gravity from the village to the WWTP. The treatment plant was commissioned in 2006 with a design capacity of 800 PE and currently serves 598 PE.

1.2 On entering the WWTP the waste water is directed through the forward feed pump station upstream of the spiral screen.

The flow then enters the screw conveyor screen where screenings above 6mm are removed from the waste water.

A manual by-pass screen is provided as back-up during screen breakdown or servicing. The waste water then enters forward feed pump station 2 downstream of the inlet screen. Both forward feed pump stations are fitted with high level overflows and two submersible pumps.

The secondary treatment consists of an aeration tank and a clarifier which are partially buried concrete tanks with a half bridge scrapper and 2 RAS/WAS pumps. Flow enters the aeration tank from the forward feed pump station 2. Air is then dispersed in the aeration tank via a series of air diffusers punted on the floor of the tank. Air is supplied to the diffusers from air blowers adjacent to the aeration tank.

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 discharge from **Kilbrittain WWTP** on the adjacent **SPA 004219** 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	Kilbrittain, Cork. (See A1_Map1 of the application).
Description of the key components of the project	<p>The new Treatment plant was commissioned in 2006 with a design capacity of 800 PE and currently serves 598 PE. Currently, according to Response Engineering results (see attachment F1), the WWTP is receiving flows of approximately 88m3/d, giving an average population equivalent of 390 (based on an a contributing 225l/PE/d).</p> <p>The plant main elements:</p> <ol style="list-style-type: none"> 1. SCREW CONVEYOR INLET SCREENING 2. FORWARD FEED PUMPING STATIONS 3. AERATION TANK 4. SLUDGE HOLDING TANK 5. SECONDARY SETTLEMENT TANK (CLARIFIER) WITH SLUDGE RETURN-PUMP 6. AN INSTRUMENTATION AND CONTROL SYSTEM
Distance from designated sites in potential impact zone*	1500 m

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2.2 Description of the Natura 2000 sites within the potential impact zone¹	
Name	Courtmacsherry bay SPA and Courtmacsherry estuary SAC and pNHA
Site Code	SAC 001230 & SPA 004219 and pNHA 001230
Site Description	<p>SPA 004219 site is located 12 km south of Bandon and immediately east of the village Timoleague in West Cork. The site is largely estuarine in nature and consists of the downed valley of the Argideen River which is now filled with sediments, resulting in extensive mudflats and areas of saltmarsh. The Estuary of Kilbrittain River in the North West of the site holds an area of well developed Saltmarsh .the sea ward boundary for the site stretches from Coolmain Point to Barry Point, and includes Coolmain Bay and Broadstrand Bay.</p> <p>The Site is Special Protection Area(SPA) under the EU Birds Directive of special conservation interest for the following species: Diver ,Shelduck, Wigeon Red-Breasted Merganser ,and Golden Plover.</p> <p>The Courtmacsherry Estuary is an important site for the complex of coastal habitats found there ,including ten listed in appendix I of the EU Directive ,and the large number of Birds that use the area.</p>
Conservation Objectives	<p>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.</p> <p>To ensure for the qualifying species and species of special conservation interest that the following are maintained in the long-term.</p> <p>the population of the species as a viable component of the site; the distribution and extent of habitats supporting the species; the structure, function and supporting processes of habitats supporting the species;</p> <p><i>Source – National Parks and Wildlife Service</i></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.

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 Kilbrittain WWTP: The waste water collection system for Kilbrittain is a partially combined system. There are a number of separate storm drains in the village. Surface water is collected and discharged to local watercourses; foul sewerage is collected and discharged to the WWTP. Final effluent is discharged into the Kilbrittain river ,analysis of the discharge has shown that effluent discharge is up to standards and does not have negative impacts on the river water .</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>Discharge could give rise to elevated nutrients entering the Courtmacsherry estuary . 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 discharge to result in elevated nutrients within the harbour is reduced by two main factors:</p> <ol style="list-style-type: none"> 1. From the limited monitoring available there is no deterioration in water quality from the discharge. 2. The effluent entering the Courtmacsherry estuary which is a large and well exchanged body of water with unlimited dilution capacity. <p>According to the ambient monitoring already carried out as part of the WWDL application process, there is no deterioration in water quality associated with the discharge.</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 	<p>Reduction in habitat area:</p> <p>The 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 habitats within the Coursmacsherry Estuary SPA arising from the operation of this facility.</p> <p>Disturbance to key species: The operation of the WWTP does not cause any disturbance to species within the SPA.</p>

<ul style="list-style-type: none"> ○ Changes in key indicators of conservation value (water quality etc) ○ Climate Change 	<p>Habitat or species fragmentation: No habitat fragmentation has been caused as a result of the operation of this facility.</p> <p>Reduction in species density: The 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.</p> <p>Changes in key indicators of conservation value eg water quality: The EPA takes samples from two locations along the Kilbrittain River upstream of the treatment plant resulting in Q-value of 4 in 2003, but no results are available since the plant was built in 2006. CCC has carried out some monitoring for the licence application</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: The structure of the SPA is not impacted by the operation of this facility.</p> <p>Interference with key relationships that define the function of the site: The function of the SPA is not impacted by the operation of this facility</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

3.1 Details	
Name of project or plan	Kilbrittain WWTP
Name and location of Natura 2000 site	The Kilbrittain River discharges into the sea at Courtmacsherry Estuary approximately 700m downstream of the discharge from the treatment plant. Courtmacsherry Estuary including the tidal stretch of the Kilbrittain River below Bateman's bridge has been designated as a Special Area of Conservation (site code 001230) which is subject to growth of large algal mats in summer.
Description of the project or plan	Kilbrittain is located in south Cork approximately 10km south of Bandon on the Regional Road R603. The waste water collection system for Kilbrittain is a partially combined system. There are a number of separate storm drains in the village. Foul sewerage is collected and discharged to the WWTP. Waste water flows by gravity from the village to the WWTP. The treatment plant was commissioned in 2006 with a design capacity of 800 PE and currently serves 598 PE.
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No

3.2 The assessment of significance of effects	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site.	No significant impacts are predicted.
Explain why these effects are not considered significant.	The 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.
List of agencies consulted: provide contact name and telephone or email address	National Parks and Wildlife Service – Natureconservation@environ.ie, cyril.saich@environ.ie
Response to consultation	Draft Conservation Objectives were sent from NPWS.

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
Mahmoud Shaladan, Cork County Council	IWebs Bird Data supplied by BirdWatch Ireland; Water Quality Monitoring Data CCC. Section F : Existing Environment and Impact of Discharge (s) for Kilbrittain WWTP (Submitted as part of the Licence application).	Desktop review of cited data.	This report.

Question 2 Review the assessment of the impact of the discharge in relation to the requirements of the Environmental Quality Objectives regulations (S.I. No. 272 of 2009) and resubmit and update where relevant.

The WWTP discharges into the Kilbrittain River adjacent to plant, analysis of the discharge has shown that the effluent discharge is up to standard and does not have negative effect on the river. The Kilbrittain River discharges into the sea at Courtmacsherry Estuary.

The upstream and downstream sampling results for 2009 at SW01 and SW02 were compared to the relevant EQR/S from the surface water regulations in the following tables. The sample results and the EQR/S were included only if there were values for both, to allow comparison.

The upstream and downstream sample results incorporated in the following tables are those laid out in the upstream and downstream sheets of Table E in the application for the discharge licence.

UPSTREAM COMPARISON TABLE

<i>Physico-chemical conditions</i>	<i>Ecological quality ratio/standard</i>	<i>2009 upstream ambient sampling results at aSW01u</i>
	<i>Good boundary</i>	
	<i>Rivers (All Types)</i>	
<i>Oxygenation conditions Table 9</i>	<i>River water body</i>	<i>Ambient sampling results</i>
Biochemical Oxygen Demand (BOD) (mgO ₂ /l)	Good status ≤1.5 (mean) or ≤2.6(95%ile)	1 based on one result only
<i>Acidification Status Table 9</i>	<i>River Water Body</i>	<i>Ambient sampling results</i>
pH (individual values)	Soft Water 4.5<pH<9.0 Hard Water 6.0<pH<9.0	7.30
<i>Nutrient conditions Table 9</i>	<i>River Water body</i>	<i>Ambient sampling results</i>
Total Ammonia (mg N/l)	Good status ≤0.065(mean) or ≤0.140(95%ile)	< 0.1 based on one result only
Molybdate Reactive Phosphorus (MRP) (mg P/l)	Good status ≤0.035(mean) or ≤0.075(95%ile)	< 0.05 based on one result only
<i>Specific pollutants Table 10</i>	<i>Inland surface waters AA-EQS</i>	<i>Ambient sampling results</i>
Phenol	8	<0.1µg/L
Toulene	10	<0.28µg/L
Xylene	10	<1.0µg/L
Arsenic	25	<0.96µg/L
Total Chromium	8.1	<20.0µg/L
Copper (depending on water hardness)	5	<20.0µg/L
Cyanide	10	<5.0µg/L
Flouride	500	<100µg/L
Zinc (depending on water hardness)	50	<20.0µg/L

Priority Substances Table 11	Inland surface waters AA-EQS	Ambient sampling results
Atrazine	0.6	<0.01µg/L
Dichloromethane	20	<1.0µg/L
Simazine	1	<0.01µg/L
Lead and its compounds	7.2	<20.0µg/L
Nickel and its compounds	20	<20.0µg/L
Priority Hazardous Substances Table 12	Inland surface waters AA-EQS	Ambient sampling results
Cadmium and its compounds (depending on water hardness)	≤0.08	<20µg/L
Mercury and its compounds	0.05	<0.2µg/L

Note the following:

The black results are within the EQR/S.
The red results break the EQR/S.
The blue results may break the EQR/S.
The results highlighted grey are at the limit of detection.

**UPSTREAM COMPARISON TABLE
(ANALYSIS BELOW THE LIMIT OF DETECTION)**

Physico-chemical conditions	Ecological quality ratio/standard	2009 upstream ambient sampling results at aSW01u
	Good boundary	
	Rivers (All Types)	
Nutrient conditions Table 9	River Water body	Ambient sampling results
Total Ammonia (mg N/l)	Good status ≤0.065(mean) or ≤0.140(95%ile)	<0.024 ONE RESULTS ONLY
Molybdate Reactive Phosphorus (MRP) (mg P/l)	Good status ≤0.035(mean) or ≤0.075(95%ile)	<0.006 ONE RESULTS ONLY
Specific pollutants Table 10	Inland surface waters AA-EQS	Ambient sampling results
Total Chromium	8.1	<1.0µg/L
Copper (depending on water hardness)	5	<1.150µg/L
Zinc (depending on water hardness)	50	<1.0µg/L
Priority Substances Table 11	Inland surface waters AA-EQS	Ambient sampling results
Lead and its compounds	7.2	<1.54µg/L
Nickel and its compounds	20	<1.0µg/L
Priority Hazardous Substances Table 12	Inland surface waters AA-EQS	Ambient sampling results
Cadmium and its compounds (depending on water hardness)	≤0.08	<1.0µg/L

Note: Actual result for Cadmium in sample was zero but <1 is recorded for reporting purposes.

DOWNSTREAM COMPARISON TABLE

Physico-chemical conditions	Ecological quality ratio/standard	2009 Downstream ambient sampling results at aSW01d
	Good boundary	
	Rivers (All Types)	
Oxygenation conditions Table 9	River water body	Ambient sampling results
Biochemical Oxygen Demand (BOD) (mgO ₂ /l)	Good status ≤1.5 (mean) or ≤2.6(95%ile)	<1.0
Acidification Status Table 9	River Water Body	Ambient sampling results
pH (individual values)	Soft Water 4.5<pH<9.0 Hard Water 6.0<pH<9.0	8.1
Nutrient conditions Table 9	River Water body	Ambient sampling results
Total Ammonia (mg N/l)	Good status ≤0.065(mean) or ≤0.140(95%ile)	<0.1 BASED ON ONE RESULT ONLY
Molybdate Reactive Phosphorus (MRP) (mg P/l)	Good status ≤0.035(mean) or ≤0.075(95%ile)	<0.05
Specific pollutants Table 10	Inland surface waters AA-EQS	Ambient sampling results
Phenol	8	<0.1µg/L
Toulene	10	<0.28µg/L
Xylene	10	<1.0µg/L
Arsenic	25	<0.96µg/L
Total Chromium	8.1	<20.0µg/L
Copper (depending on water hardness)	5	<20.0µg/L
Cyanide	10	<5.0µg/L
Flouride	500	<100.0µg/L
Zinc (depending on water hardness)	50	<20.0µg/L
Priority Substances Table 11	Inland surface waters AA-EQS	Ambient sampling results
Atrazine	0.6	<0.01µg/L
Dichloromethane	20	<1.0µg/L
Simazine	1	<0.01µg/L
Lead and its compounds	7.2	<20.0µg/L
Nickel and its compounds	20	<20.0µg/L
Priority Hazardous Substances Table 12	Inland surface waters AA-EQS	Ambient sampling results
Cadmium and its compounds (depending on water hardness)	≤0.08	<20µg/L
Mercury and its compounds	0.05	<0.2µg/L

Note the following:

The black results are within the EQR/S.
 The red results break the EQR/S.
 The blue results may break the EQR/S.
 The results highlighted grey are at the limit of detection.

**DOWNSTREAM COMPARISON TABLE
(ANALYSIS BELOW THE LIMIT OF DETECTION)**

Physico-chemical conditions	Ecological quality ratio/standard	2009 Downstream ambient sampling results at aSW01d
	Good boundary	
	Rivers (All Types)	
Nutrient conditions Table 9	River Water body	Ambient sampling results
Total Ammonia (mg N/l)	Good status ≤ 0.065 (mean) or ≤ 0.140 (95%ile)	0.002 BASED ON ONE RESULT ONLY
Molybdate Reactive Phosphorus (MRP) (mg P/l)	Good status ≤ 0.035 (mean) or ≤ 0.075 (95%ile)	0.023 BASED ONE ONE RESULT ONLY
Specific pollutants Table 10	Inland surface waters AA-EQS	Ambient sampling results
Total Chromium	8.1	n/a
Copper (depending on water hardness)	5	1.62 $\mu\text{g/L}$
Zinc (depending on water hardness)	50	<1.0 $\mu\text{g/L}$
Priority Substances Table 11	Inland surface waters AA-EQS	Ambient sampling results
Lead and its compounds	7.2	3.280 $\mu\text{g/L}$
Nickel and its compounds	20	<1.0 $\mu\text{g/L}$
Priority Hazardous Substances Table 12	Inland surface waters AA-EQS	Ambient sampling results
Cadmium and its compounds (depending on water hardness)	≤ 0.08	<1.0 $\mu\text{g/L}$

Note: Actual result for Cadmium in sample was zero but <1 is recorded for reporting purposes

APPENDIX 1

SITE SYNOPSIS

SITE NAME: COURTMACSHERRY BAY SPA

SITE CODE: SPA 004219

Courtmacsherry Bay SPA is located approximately 12 km south of Bandon and immediately east of the village of Timoleague in west Co. Cork. The site, which is largely estuarine in nature, consists of the drowned valley of the Argideen River which is now filled with sediments, resulting in extensive mudflats and areas of saltmarsh. The estuary of the Kilbrittain River in the north-east of the site holds an area of well-developed saltmarsh. The seaward boundary for the site stretches from Coolmain Point to Barry Point, and includes Coolmain Bay and Broadstrand Bay. Most of the mudflats are unvegetated, although in places Cord-grass (*Spartina anglica*) occurs. Saltmarsh has developed in a number of areas, the abundant species mostly being Sea Club-rush (*Scirpus maritimus*), Common Scurvygrass (*Cochlearia officinalis*), Sea Arrowgrass (*Triglochin maritima*), Sea Plantain (*Plantago maritima*), Thrift (*Armeria maritima*) and Saltmarsh Rush (*Juncus gerardi*).

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Great Northern Diver, Shelduck, Wigeon, Red-breasted Merganser, Golden Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Black-headed Gull and Common Gull. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The site is of ornithological importance for the wintering waders and wildfowl that feed on the mudflats. It supports internationally important numbers of Black-tailed Godwit (506 - figures given here and below are mean peaks for the five winters in the period 1995/96 to 1999/00), as well as nationally important numbers of a further eleven species, i.e. Great Northern Diver (27), Shelduck (175), Wigeon (934), Red-breasted Merganser (63), Golden Plover (5,759), Lapwing (2,713), Dunlin (1,353), Bar-tailed Godwit (182), Curlew (1,357), Black-headed Gull (2,727) and Common Gull (2,226). Other species which occur include Oystercatcher (610), Redshank (227) and Greenshank (26).

Courtmacsherry Bay SPA is an important site for wintering birds. It holds internationally important numbers of Black-tailed Godwit and nationally important numbers of a further eleven species, including three that are listed on Annex I of the E.U. Birds Directive, i.e. Great Northern Diver, Golden Plover and Bar-tailed Godwit.

SITE SYNOPSIS

SITE NAME: COURTMACSHERRY ESTUARY

SITE CODE: SAC 001230

This site is located in West Cork, some 12 km south of Bandon and immediately east of the village of Timoleague. The estuary consists of the drowned valley of the

Argideen River, which is now filled with sediments, resulting in an extensive mudflat. The site contains a complex of coastal habitats including ten habitats listed on Annex I of the EU Habitats Directive.

Most of the mudflat is unvegetated, although in places Cord-grass (*Spartina* sp.) occurs. Saltmarsh has developed in a number of areas, the abundant species mostly being Sea Club-rush (*Scirpus maritimus*), Common Scurvygrass (*Cochlearia officinalis*), Sea Arrowgrass (*Triglochin maritima*), Sea Plantain (*Plantago maritima*), Thrift (*Armeria maritima*) and Saltmarsh Rush (*Juncus gerardi*). On the outer edges such species as Greater Sea-spurrey (*Spergularia media*), Lesser Sea-spurrey (*S. marina*) and Lax-flowered Sea-lavender (*Limonium humile*) occur, while on their landward edge of the saltmarsh frequently support Creeping Bent (*Agrostis stolonifera*), Red Fescue (*Festuca rubra*), Silverweed (*Potentilla anserina*), Soft Rush (*Juncus effusus*), Common Sorrel (*Rumex acetosa*) and others. A particularly welldeveloped

intact saltmarsh occurs at Garranefeen Strand. The site also includes small areas of sand dune, sandy and shingle beaches, reedbeds of Common Reed (*Phragmites australis*), scrub, dry grassland, and areas of both wet and dry seminatural broadleaved woodland, parts of which are dominated by species of Oak (*Quercus* sp.). Of note is the presence of the rare Red Data Book plant species, Seakale

(*Crambe maritima*) on shingle, as well as the scarce grass, Tor-grass (*Brachypodium pinnatum*), on cliffs between Broadstrand and Wood Point. The occurrence of the EU priority habitat fixed dune is also of significance.

The site is of ornithological importance for the many waders and wildfowl that feed on the mud and sandflats. The winter flocks of Golden Plover (2,600) and Black-Tailed Godwit (110) constitute nationally important numbers and at least nine other species occur in significant levels for the region - Wigeon (58), Mallard (69), Redbreasted

Merganser (18), Oystercatcher (162), Lapwing (629), Dunlin (215), Bartailed Godwit (178), Curlew (731) and Redshank (139). Although these figures are the average peaks of 4 counts between 1984/85 and 1986/87, at times the numbers present far exceed those given. For example, in January 1992, 5,800 Golden Plover, 671 Wigeon, 731 Dunlin and 456 Oystercatchers were present.

The spread of Cord-grass on parts of the mudflats poses a threat to the quantity of the area for feeding birds and pollution is an ever-present threat in such a wetland.

Courtmacsherry Estuary is an important site for the complex of coastal habitats found there, including ten listed on Annex I of the EU Habitats Directive, and for the large numbers of birds that use the area.

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Register Number D0425-01 Revised Attachment E4 Kilbrittain Upstream & downstream Table E4

Sample Date	07/05/2009	River Upstream	Results Below LOD
Sample	GT625	GT624	GT624
Sample Code	*	*	*
Flow M ³ /Day	*	8.1	n/a
pH	*	*	*
Temperature °C	*	240	n/a
Cond 20°C	215	<2.5	n/a
SS mg/L	<2.5	<0.1	0.002
NH ₃ mg/L	<0.1	<1.0	n/a
BOD mg/L	1	<21	n/a
COD mg/L	<21	5.4	n/a
TN mg/L	5.27	<0.10	n/a
Nitrite mg/L	<0.10	5.57	n/a
Nitrate mg/L	4.04	0.053	n/a
TP mg/L	<0.05	<0.05	0.023
O-PO4-P mg/L	<0.05	<30	n/a
SO4 mg/L	<30	<0.10	n/a
Phenols µg/L	<0.10	<0.01	n/a
Atrazine µg/L	<0.01	<1	n/a
Dichloromethane	<1	<0.01	n/a
Simazine µg/L	<0.01	<0.28	n/a
Toluene µg/L	<0.28	not required	n/a
Tributyltin µg/L	not required	<1	n/a
Xylenes µg/L	<1	<0.96	n/a
Arsenic µg/L	<0.96	<20	n/a
Chromium ug/L	<20	<20	1.62
Copper ug/L	<20	<5	n/a
Cyanide µg/L	<5	<100	n/a
Fluoride µg/L	<100	<20	3.28
Lead ug/L	<20	<20	<1
Nickel ug/L	<20	<20	<1

Zinc ug/L	<20	<1
Boron ug/L	<20	<1
Cadmium ug/L	<20	<1
Mercury µg/L	<0.2	n/a
Selenium µg/L	2.1	n/a
Barium ug/L	26.87	n/a

<20	<1
<20	<1
<20	<1
<0.2	n/a
2.7	n/a
24.49	n/a

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Attachment E4 Kilbrittain Downstream Table E4

Sample Date	#####	
Sample	River	Average
Sample Code	GT624	
Flow M ³ /Day	*	
pH	8.1	8.1
Temperature °C	*	*
Cond 20°C	240	240
SS mg/L	<2.5	<2.5
NH ₃ mg/L	<0.1	<0.1
BOD mg/L	<1.0	<1.0
COD mg/L	<21	<21
TN mg/L	5.4	5.4
Nitrite mg/L	<0.10	<0.10
Nitrate mg/L	5.57	5.57
TP mg/L	0.053	0.053
O-PO ₄ -P mg/L	<0.05	<0.05
SO ₄ mg/L	<30	<30
Phenols µg/L	<0.10	<0.10
Atrazine µg/L	<0.01	<0.01
Dichloromethane µg/L	<1	<1
Simazine µg/L	<0.01	<0.01
Toluene µg/L	<0.28	<0.28
Tributyltin µg/L	not required	not required
Xylenes µg/L	<1	<1
Arsenic µg/L	<0.96	<0.96
Chromium ug/L	<20	<20
Copper ug/L	<20	<20
Cyanide µg/L	<5	<5
Fluoride µg/L	<100	<100
Lead ug/L	<20	<20
Nickel ug/L	<20	<20
Zinc ug/L	<20	<20
Boron ug/L	<20	<20
Cadmium ug/L	<20	<20
Mercury µg/L	<0.2	<0.2
Selenium µg/L	2.7	2.7
Barium ug/L	24.49	24.49

Kilbrittain Outlet

Sample Date	21/01/2010	08/04/2010	03/06/2010	12/08/2010	11/11/2010	14/12/2010
Sample	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent
Sample Code	GU011	GU203	GU375	GU579	GU887	GU950
Flow M ³ /Day	*	*	*	*	*	*
Suspended Solids mg/L	17	13	40	23	74	1.25
BOD mg/L	2	5	6	1	9	0.5
COD mg/L	36	40	63	34	76	21

Breach of UWW Regs

value at half of LOD for statistical purposes

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Mean Value 2010	Urban WW Reg Limits
28.0416667	35
3.91666667	25
45	125

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breach of UWW limit

value expressed at 1/2 of LOD for statistical purposes

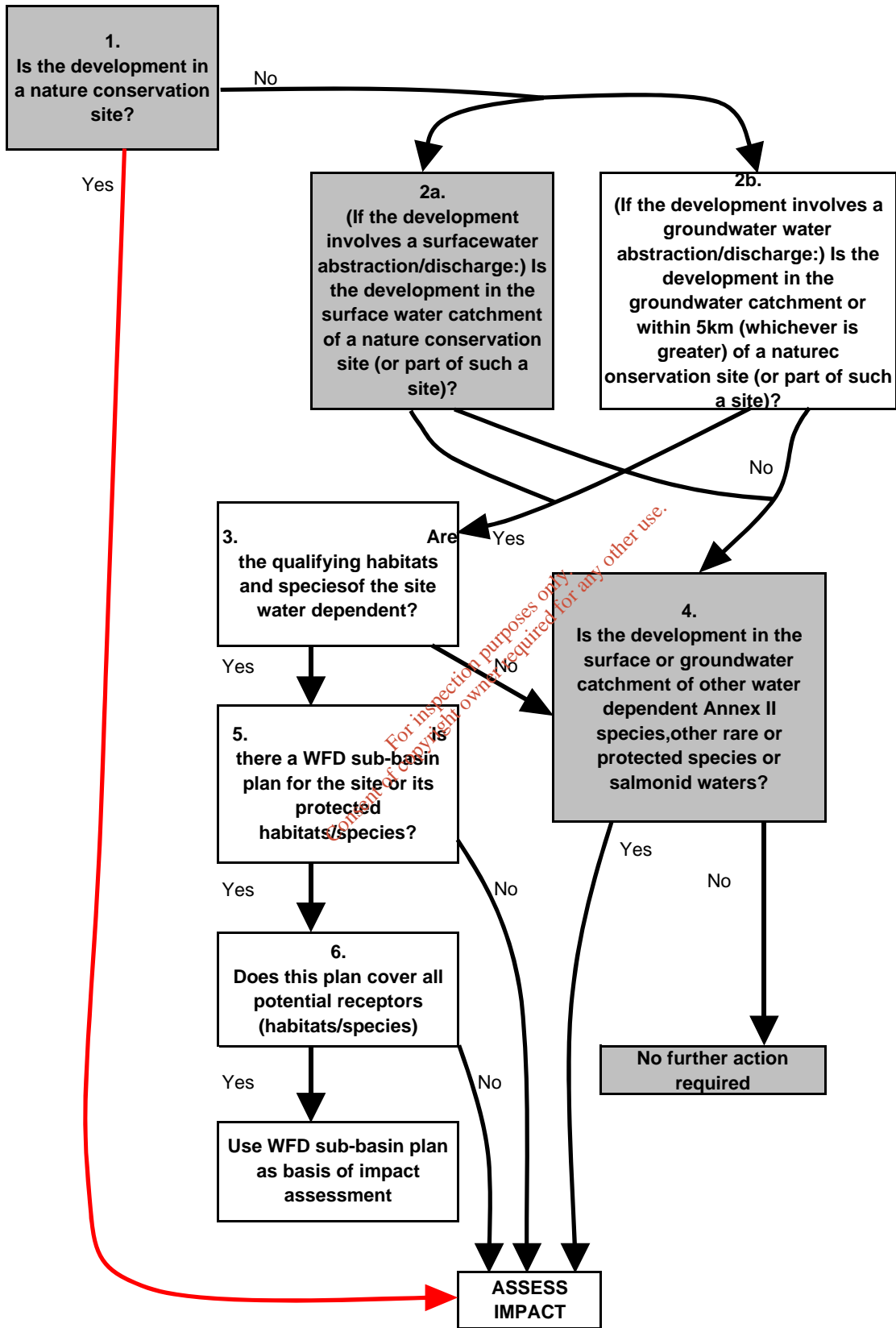
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Attachment E4 Kilbrittain Inlet Table E4

Sample Date	07/05/2009	Average
Sample	Influent	
Sample Code	GT623	
Flow M ³ /Day	*	*
pH	8.4	8.4
Temperature °C	*	*
Cond 20°C	832	832
SS mg/L	125	125
NH ₃ mg/L	58.7	58.7
BOD mg/L	151	151
COD mg/L	393	393
TN mg/L	76.1	76.1
Nitrite mg/L	0.54	0.54
Nitrate mg/L	0.29	0.29
TP mg/L	10.08	10.08
O-PO4-P mg/L	7.36	7.36
SO4 mg/L	39.9	39.9
Phenols µg/L	<0.10	<0.10
Atrazine µg/L	<0.01	<0.01
Dichloromethane µg/L	<1	<1
Simazine µg/L	<0.01	<0.01
Toluene µg/L	<0.28	<0.28
Tributyltin µg/L	not required	not required
Xylenes µg/L	<1	<1
Arsenic µg/L	<0.96	<0.96
Chromium µg/L	<20	<20
Copper µg/L	95	95
Cyanide µg/L	<5	<5
Fluoride µg/L	<100	<100
Lead µg/L	<20	<20
Nickel µg/L	<20	<20
Zinc µg/L	95	95

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Flow Diagram for Kilbrittain Agglomeration



Conclusion: An appropriate assessment is required for Kilbrittain