Comhairle Contae Chorcai
Cork County Council

WSIP Project Office,
Model Business Park,
Model Farm Road,
Cork.
Tel No: (021) 4819400
Fax No: (021) 4819433
Web: www.corkcoco.ie

Oifig Tionscadail CISU,
Modhpháirc Gnó,
Bothar na modhfherime,
Corcaigh.
Fón: (021) 4819400
Faics: (021) 4819433
Suiomh Gréasáin: www.corkcoco.ie

Administration
Office of Climate, Licensing & Resource Use,
Environmental Protection Agency,
Regional Inspectorate,
Inniscarra,
County Cork.

30th March 2011

Re: Application for Waste Water Discharge Authorisation – Youghal Ref. D0139-01
Response to Regulation 18(3)(b) Notice

Further to you letter dated 8th February 2011, the requested information is detailed below.

REGULATION 16 COMPLIANCE REQUIREMENTS

Waste Water Works

1) Provide the following information:
   (i) An estimate of the proposed Population Equivalent (p.e.) contribution from (1) domestic (2) commercial and (3) trade effluent sources.

Cork County Council Response

(1) Domestic – Based on the number of occupied residential delivery points from An Post GeoDirectory 2010 (4,007) and an average occupancy rates of 2.02 (average of 2002 and 2006 populations for Youghal divided by 2002 and 2006 residential delivery points from An Post GeoDirectory), the current Domestic Population Equivalent is approximately 8,100.

It is anticipated that within the lifetime of the licence, this figure could be increased to 9,300.

(2) Commercial – Using averaged daily data from Non-Domestic Water Metering for 2009 (at the BOD figures included in the EPA Guidance Treatment Systems for Small Communities, Business, Leisure Centres and Hotels) within the area served by the existing and proposed collection networks the Commercial Population Equivalent is calculated as 3,910. This is further broken down (in accordance with the guidance manual) as follows:

Industrial:	970
Schools:	250
Hotels:	114
Pubs & clubs:	1,221
Amenity Sites:	1,177
Hospitals:	178

It is anticipated that within the lifetime of the licence, this figure could be increased to 4,500 PE.

(i)

(3) Trade Effluent – The current Trade Population Equivalent is calculated as 11.5 (Waste Licence - W0211-01 ERAS ECO Ltd, based on 2009 Annual Environmental Report, average flow rates and BOD). The licence allows a discharge of 57 PE.

A planning application to extend the ERAS site has been lodged with Cork County Council. Documentation included with the application indicates that the additional process propose can be included within the limits of the current licence (see (iii) below.

It is anticipated that within the lifetime of the licence, Trade Population Equivalent figure could be increased to 500 PE

1)

(ii) Clarification whether leachate and/or industrial sludges are discharged via the existing waste water works or are to be treated in the proposed wastewater treatment plant (WWTP). If so provide details of transfer arrangements, frequency and quantity (volume and p.e), etc.

Cork County Council Response

Leachate

Leachate from Youghal landfill is currently disposed of to the WWTP at Carrigtohill. It is proposed that, following development of the Youghal WWTP, the leachate will be directed into the sewerage network at the Foxhole Pumping Station and from there into the new Youghal WWTP. The frequency of pumping will be dependent on the volumes of leachate generated at the facility as leachate generation rates tend to vary in accordance with rainfall. The leachate storage lagoon at the landfill site will act as a buffer, reducing the risk of shock loading to the WWTP.

As closure and capping of the landfill progresses, it is anticipated that the volumes and strength of leachate generated at the site will reduce going forward.

In 2010, the mean concentration of BOD in the leachate was 498.3 mg/l. The volume of leachate removed from site to Carrigtohill WWTP was 9,631 m3. This implies a Population Equivalent of 219 PE.

Results of recent analysis and volumes of leachate generated are included in Annex A of this document.

Industrial Sludges

Industrial sludges are not discharged by the existing waste water works. It is not currently proposed to treat industrial sludges.

1)

(iii) Summary details of all industrial discharges permitted under an IPPC or a Waste licence within the agglomeration which discharge to the existing waste water works or that are to be treated in the proposed WWTP.

Cork County Council Response
IPPC Licences
3 no. IPPC licences are listed on the EPA website within the agglomeration. These have been surrendered or withdrawn and no longer discharge to the existing waste water works.

Reg No.	Applicant Name:	Licence Status:
P0151-03	Technicolour Home Entertainment Services Ireland Limited	Withdrawn
P0159-01	Tytex Ireland Ltd.	Surrendered
P0219-01	Seafield Technical Textiles Ltd	Surrendered

WASTE
2 no. Waste licences are listed on the EPA Website within the agglomeration. Details are given below:

W0068-03 CORK COUNTY COUNCIL – YOUGHAL LANDFILL
There are no emission limit values set for discharges to sewer for Youghal Landfill under Waste Licence Reg No. W0068-03.

W0211-01 ERAS ECO Ltd
ERAS discharges to the existing collection network in the Foxhole Catchment. The Foxhole Catchment currently discharges at SW08Yghl and SW03Yghl. The Foxhole Catchment will be pumped to the Waste Water Treatment plant for treatment prior to discharge through the proposed primary outfall at Greens Quay.

Based on the limits set in the Licence the theoretical maximum emission values are tabulate below.

B.4 Emission to Sewer
Name of Receiving Waters: Blackwater Estuary Lower
Volume to be emitted: Maximum in any one day: 170 m^3
Maximum rate per hour: 7 m^3

Parameter	Emission Limit Value	Emissions/Day at Limit Values
Temperature	25^0C	
pH	6.0 – 8.5	
	mg/l	**kg/day**
BOD	20	3.400
COD	125	21.250
Suspended Solids	35	5.950
Total Nitrogen (as N)	10	1.700
Sulphate	100	17.000
Ammonia (as N)	0.5	0.085
Total Phosphorous (as P)	1.0	0.170
Cyanide	0.01	0.002

	µg/l	g/day
VOC	50	8.500
Semi VOC	50	8.500
Lead	5	0.850
Zinc	100	17.000
Copper	30	5.100
Cadmium (Total)	5	0.850
Arsenic (Total)	20	3.400
Chromium	15	2.550
Nickel	25	4.250
		units/d
Faecal Coliforms (FC)	< 250 FC/100 mls	425,000,000

The Annual Environmental Report submitted to the EPA by ERAS dated 2009 indicates that while current emissions are in breach of the licence for some parameters, particularly COD (See Table 3.7 SE-1 Weekly results), the average daily flows (31.47m^3 - see Table 3.6) and average BOD (17.33 mg/l – see Table 3.8) are significantly below the licence limits. Based on average flow and BOD, the current emission averages 11.5 PE daily. The licence allows a discharge of 57 PE.

1)

(iv) Update the map of the agglomeration boundary to include the primary discharge point (SWO1) outfall, which forms part of the waste water works. Update drawings where applicable. Include any additional sewer pipe connections which form part of the waste water works, e.g., Foxhole sewer connection

Cork County Council Response
Updated drawings Drawing 1 and Drawing 3 are attached in Annex B. A schedule correlating revised drawings with superseded versions is also enclosed.

2) Where available, provide information on the number of houses within the agglomeration not connected to the waste water works. Provide details of any actions taken or proposed to ensure that dwellings within the agglomeration boundary are connected to waste water works and any details of the timeframe for connection

Cork County Council Response
There are approximately 9 houses in the South Abbey/Strand St area of the agglomeration which are not currently connected to the wastewater collection system. These properties currently discharge directly in Youghal harbour. The sewerage network along South Abbey and Strand St is being upgraded as part of the works. It is intended that the residents of these properties will form group sewerage schemes in order to make connections to the municipal sewer network.

It is proposed to connect two houses in Greencloyne to the sewerage network as part of the main drainage contract works.

There are approximately 18 houses on Quarry Lane within the agglomeration boundary that are not currently connected to the sewer system. There are no current proposals to connect these properties to the wastewater collection system.

3)

(i) Re-assess Section C and D of the licence application, with particular reference to the existence of any storm water overflows within the agglomeration. In this reassessment, please be mindful of the distinction between secondary discharges, storm water overflows and emergency overflows.

Cork County Council Response
See revised Sections C and D included as Annex C.

(ii) Clarify, where known, the changes to the classification of these discharge points following the construction of the Youghal WWTP (i.e., whether each these discharge points will be secondary discharges, storm water overflows, emergency overflows or will decommissioned).

Cork County Council Response
With regard to the existing overflows in Youghal, the following alterations are proposed as part of the Main Drainage Works:

Overflow name	Reference	Current Classification	Future Classification
Dunn's Park	SW01Yghl	Primary Discharge	Storm Water Overflow
Paxe's Lane	SW02Yghl	Secondary Discharge	Emergency Overflow
Foxhole	SW03Yghl	Secondary Discharge	Decommissioned
Summerfield	SW04Yghl	Emergency Discharge	Emergency Discharge
Front Strand	SW05Yghl	Storm Water Overflow	Storm Water Overflow
Green Park	SW06Yghl	Storm Water Overflow	Storm Water Overflow
Dunn's Park	SW07Yghl	Storm Water Overflow	Emergency Overflow
Foxhole	SW08Yghl	Storm Water Overflow	Emergency Overflow
Kilcoran	SW09Yghl	Storm Water Overflow	Decommissioned
Summerfield B	SW10Yghl	Storm Water Overflow	Decommissioned

Operational Information

4)

(i) Provide a comment on the concentrations of cadmium, lead and nickel recorded in the primary discharge (SW01Yghl) *(Table D. 1(i(c) Dangerous Substance Emissions to Surface Waters),* having regard to the relevant environmental quality standards requirements.

Cork County Council Response
The submitted Table D attachments have been examined and there is a typographical error in the parametric values for Nickel and Cadmium in Table D(i)(C). The value was recorded as 100ug/l however there is no Cadmium and nickel in the discharge.

The metals were tested using an ICP-OES with a detection limit of <20ug/l however the actual results recorded by the instrument that were below the LOD9 limit of detection. It can be seen from these results that there is no Cadmium and negligible amounts of Nickel in the discharge from Green Quay SW01Yghl.

In relation to the Lead (Pb) results the spectra and the results submitted have been re-examined. The samples were analysed using an ICP-OES instrument and the values recalculated as only 1 result was reported in the original tables. The samples are analysed using 2 wavelengths and in the case of Pb there is considerable variation in the absorption data. Metals are specifically tested at 2 wavelengths in order to confirm the results. If the metal is present and the result is not due to overlap of spectra or an interference either chemical or spectral then the metal will emit at both wavelengths of testing with an appropriate RSD (relative standard deviation) where the metal is present above the LOD of the test.

In the case of both of these samples, the sample has a result at only 1 wavelength and there is no confirmation of the result therefore an interference occurred in the analytical method. Chloride is a known interference in the analysis of Pb using ICP-OES and the conductivity of the samples confirms that elevated levels of chloride were present on both sampling dates. The result has now been averaged over the 2 wavelengths for reporting purposes however there is a possibility that this result is due to chloride interference and the result should be interpreted in that manner.

Date	Sample Code	Cd Cadmium ug/l	Ni Nickel ug/l	Pb Lead ug/l	Conductivity uS/cm	Saline interference from high chloride levels
10/07/08	GS650	<1	5.0	22.5	16,400	Yes in Pb analysis
17/07/08	GS692	1	4.6	17.5	3,500	Yes in Pb analysis

(Samples collected from SW01 Yghl-Green Quay pumping station at Dunne's Car Park)

Revised attachment E4 is included as Annex D

(ii) Submit details of all discharges from the Youghal agglomeration via the following web based link: http://78.137.160.73/epa_wwd_licensing/

Cork County Council Response
The requested information has been submitted via the web link.

5) Provide a summary of the actions proposed or taken to address the points raised in submission No. 1, received on the Youghal WWDL application, as far as these relate to the discharges from the wastewater works. (The submission relates to water quality issues at Williamstown and Claycastle, Youghal).

Cork County Council Response

Items (a) & (b)

It is intended, subject to funding and DoEHLG approval, as part of the Youghal Main Drainage Scheme to upgrade the storm and foul drainage network in the general Williamstown – Claycastle area. In summary the proposed works include;

- Replacement and repair of existing pipework along Upper Strand;
- Separation where possible of storm and foul flows;
- Diversion of separated storm water flows around the Front Strand Holding Tank through an oil/petrol interceptor to discharge directly via the existing long outfall
- Alterations to the Front Strand Holding Tank to include new weir levels to reduce spill frequency to 2 spills per bathing season and a screen on the overflow;
- Upgrades to the existing Front Strand Pumping Station

The final model identified a total of 5 spills from the tank in 20 bathing seasons. This is made up of 2 spills in one season, and 3 other seasons of one spill each. The 2 spills figure is therefore a maximum for any bathing season. The total volume spilled in each bathing season is <<1% of the annual rainfall runoff to sewers in the catchment.

Item (c)

The Front Strand Holding Tank is to be upgraded as above; 2 spills per bathing season

Item (d)

Works with regard to the open surface water drainage system and the associated outfalls onto Front Strand is not currently part of the scope of the Youghal Main Drainage project. Consultants have been appointed to examine the surface water runoff in the catchment and make recommendations on remediation works. On completion of the study these recommendation may, subject to funding, form part of the project. A temporary extension of the lower outfall will be completed shortly.

Item (e)

It is not anticipated that the works will have any impact on the existing surface water outfalls at Front Strand. All works undertaken as part of the Youghal Main Drainage Scheme will be subject to full-time supervision by a resident engineering team. Any damage to existing infrastructure will be required to be made good by the works contractor. In the event that the Contractor fails to make good any damage, a sum will be retained from the contract to finance repairs.

6) Clarify if the Strand Holding Tank will constitute part of the upgraded waste water works and how this tank is proposed to operate or if this tank is proposed to be decommissioned.

Cork County Council Response
The Front Strand Holding Tank will remain operational as part of the Youghal drainage network. It is intended to raise the overflow level of the tank to reduce the frequency of spills to the overflow to 2 per bathing season.

The final model identified a total of 5 spills from the tank in 20 bathing seasons. This is made up of 2 spills in one season, and 3 other seasons of one spill each. The 2 spills figure is therefore a maximum for any bathing season. The total volume spilled in each bathing season is <1% of the annual rainfall runoff to sewers in the catchment.

The volume of storm water passing through the tank will be reduced by separation of flows upstream of the tank. Separated storm water flows will be directed through an oil/petrol interceptor and into the existing Front Strand Outfall downstream of the holding tank.

Flows through the Holding Tank will be directed to the Front Strand Pumping Station. Overflows will be screened prior to discharge to the existing overflow.

Assessment of Impacts of Waste Water Discharges on Receiving Waters

7) Review the assessment of the impact of the discharge in relation to the requirements of the Environmental Quality Objectives Regulations (SI. No. 272 of 2009) and resubmit and update where relevant.

Cork County Council Response
With regard to the assessment of the impact of the discharge in relation to the requirements of the Environmental Quality Objectives Regulations (SI No. 272 of 2009), both the EIS (2001) and the Waste Water Discharge Licence application (2008) were prepared prior to this legislation coming into force. The most recent sampling data available from the EPA for the Blackwater River is from 2009.

According to the SWRBD, the Blackwater Estuary into which the agglomeration discharges is denoted as having “good” ecological status and “pass” surface water chemical status.

Currently, the primary discharge from Youghal discharges untreated wastewater with an average BOD content of 423 mg/l. The major secondary discharge has an average BOD concentration of 212 mg/l. The most recent sampling available from the Blackwater demonstrates (from the EPA 2009) that the ambient BOD concentration in the estuary downstream of the discharges is 1.325 mg/l, which is substantially below the 2009 standard of 4.0 mg/l for a transitional water body.

The proposed WWTP will discharge treated wastewater at a maximum concentration of 25 mg/l. The proposed WWTP will therefore significantly improve the quality of effluent discharged to the Blackwater from Youghal and can be expected to have a positive effect on water quality in the estuary.

Based on sampling of the effluent from Youghal being discharged to the estuary, the concentrations of substances specified in the regulations Tables 10, 11 and 12 are substantially below the EQS for the estuary and are not expected to have a measurable impact on water quality.

8) Clarify at what distance from the primary discharge point the discharge from the new WWTP will comply with the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI. No. 272 of 2009) (i.e., clarify the extent of the mixing zone).

Modelling of the effluent discharge from the WWTP outfall into the Blackwater Estuary has been carried out, and the results compared to the relevant standards for transitional waters in the Environmental Quality Objectives (Surface Waters) Regulations (SI No. 272 of 2009) where both modelling of substances and environmental standards are available.

Table 9 of the Regulations identifies a 95%ile concentration for Biochemical Oxygen Demand in a Transitional Water Body of 4.0 mg/l. Modelling of the discharge has not identified any areas of the Blackwater Estuary or Youghal Harbour with BOD concentrations in excess of this limit other than at the discharge. The mixing zone can therefore be said to be confined to the immediate vicinity of the discharge, in compliance with Section 51(1) of the Regulations.

EQS data is included as Annex D

9) With regard to the additional information submitted in relation to the *Ecological Report & Article 6' Appropriate Assessment Screening Report,* demonstrate how the Department of the Environment, Heritage and Local Government circular **L8/08** dealing with Appropriate Assessments has been addressed in relation to the discharge to surface water. Submit the results of the L8/08 screening, detailing the response to each question. If the result of the screening is to 'Assess Impacts' submit the relevant updated information.

Cork County Council Response
A revised Appropriate Assessment is attached in Annex E.

Further Works

10)
(i) Provide a summary of the scope of the proposed works to be carried out in the Youghal agglomeration under the 20010 2012 Water Services Investment Programme funding (network and wastewater treatment plant). Provide an update on these proposed works, including clarification of the proposed start date and completion date of the various works to be carried out, as applicable.

It is proposed to carry out the proposed works to the Youghal agglomeration under two separate, parallel contracts as follows;

- Network Upgrade Contract:
  - New storm water and foul water drainage gravity and pressure sewers in streets in Youghal town
  - Repairs to existing network
  - New pumping station at Green Park
  - Decommissioning and demolition of Cork Hill comminutor station
  - Structural works to Strand Pumping Station
  - Minor works to Strand holding tank
  - Mechanical and electrical works to Summerfield Pumping Station, Strand Pumping Station and new Green Park Pumping Station
  - Ancillary Works

10)

(i)

- Wastewater Treatment Plant Design Build Operate Maintain (DBOM) Contract
  - Upgrade to the existing Dunn's Park Pumping Station,
  - Construction of a new rising main from Dunn's Park pumping station to the proposed WWTP site at Mudlands
  - New WWTP and access road,
  - New outfall pipeline from the WWTP to Green's Dock and into the Blackwater Estuary.

Contract documents have been prepared for the Works and are currently awaiting approval from the Department of the Environment Heritage & Local Government. As such, the timescale for the commencement of the Contract works is uncertain. However, it is currently anticipated that Works could commence in late 2011 or early 2012 with an estimated contract duration of less than 2 years.

(ii) Where storm water overflows do not comply with the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows, 1995', give details of the plans for improvement and include the proposed timeframe for compliance.

Storm water overflows which do not comply with DoEHLG standards will be upgraded or decommissioned as part of the Network Upgrade Contract outlined at 10(i). Works to be carried out to overflows are as follows:

Overflow Name	Reference	Proposed Works
Summerfield B	SW10Yghl	Decommission
Kilcoran	SW09Yghl	Decommission
Green Park	SW06Yghl	Upgrade to compliant storm water overflow
Dunn's Park	SW07Yghl	Upgrade to compliant emergency overflow
Foxhole	SW03Yghl	Existing secondary discharge to be decommissioned
Foxhole	SW08Yghl	Existing storm water overflow to be upgraded to emergency overflow

A revised non-technical summary which reflects the information supplied above is enclosed.

Yours sincerely,

Noel O'Keeffe
County Engineer

ANNEX A

YOUGHAL LAND FILL LEACHATE

Youghal landfill site.
Leachate results 2010.

Date	Location	P.h.	B.O.D.	C.O.D.	Suspended Solids.	Ammonia NH3-N	Sulphates
08/01/10	Lagoon No1	7.96	380	3450	396	1380	
15/01/10	Lagoon No1	7.64	430	4230	554	1460	
29/01/10	Lagoon No1	7.92	465	4110	468	1840	
12/02/10	Lagoon No1	7.78	520	5020	584	1640	
19/01/10	Lagoon No1	7.59	460	5200	463	1250	
26/02/10	Lagoon No1	7.61	490	4790	338	1630	
01/04/10	Lagoon No1	7.42	630	7440	538	1650	
09/04/10	Lagoon No1	7.88	290	5720	550	1260	
21/04/10	Lagoon No1	7.92	320	5190	1940	1580	
25/05/10	Lagoon No1	7.86	280	4650	1760	1400	
01/06/10	Lagoon No1	7.57	350	5165	1760	1440	
04/06/10	Lagoon No1	7.70	360	5095	1710	1610	
17/06/10	Lagoon No1	7.92	480	5100	2200	1450	
24/06/10	Lagoon No1	8.29	370	5750	2150	1550	
19/08/10		8.34		3600	640	2400	
25/08/10		8.86		4450	510	1650	
08/09/10		7.72	1648	4700	310	2200	
23/09/10		7.68	874	7480	230	1520	
28/09/10		8.68	778	4300	330	2000	
26/10/10		7.88	480	7000	87	1900	
04/11/10		7.97		2340	80	1800	
12/11/10		7.57	330	2060	320	1500	
18/11/10		7.76	340	2490	430	1500	
25/11/10		7.78	190	3270	200	1500	
15/12/10		7.70		2950	120	930	

Youghal Landfill – Volumes of leachate removed from site to Carrigtohill WWTP

2010	9,631 m^3
2009	13,159 m^3
2008	12,785 m^3
2007	18,295 m^3
2006	24,789 m^3
2005	19,018 m^3
2004	20,908 m^3
2003	26,136 m^3

ANNEX B

REVISED DRAWINGS

Youghal WWTP Waste Water Discharge Application Reg. No D0050-01

Schedule of Alterations to Drawings

Drawing No	Drawing Title	Revision and date	Revision and date
Drawing 1	Section B1 Agglomeration Boundary	Rev 0 Date: 16.09.09	Rev 1 Date: 24.03.11
Drawing 3	Section B3 Primary Discharge Point	Rev 0 Date: 16.09.08	Rev 1 Date: 24.03.11

N

Drawing Status

FINAL

0 10 Millimetres 50

Client

Cork County Council
County Hall
Cork

Rev	Description	By	Date	Chk'd	Auth
1	Revised Agglomeration Boundary	AF	24.03.11	AF	JN

ATKINS

Project

YOUGHAL WASTE WATER
DISCHARGE LICENCE

Drawing Title

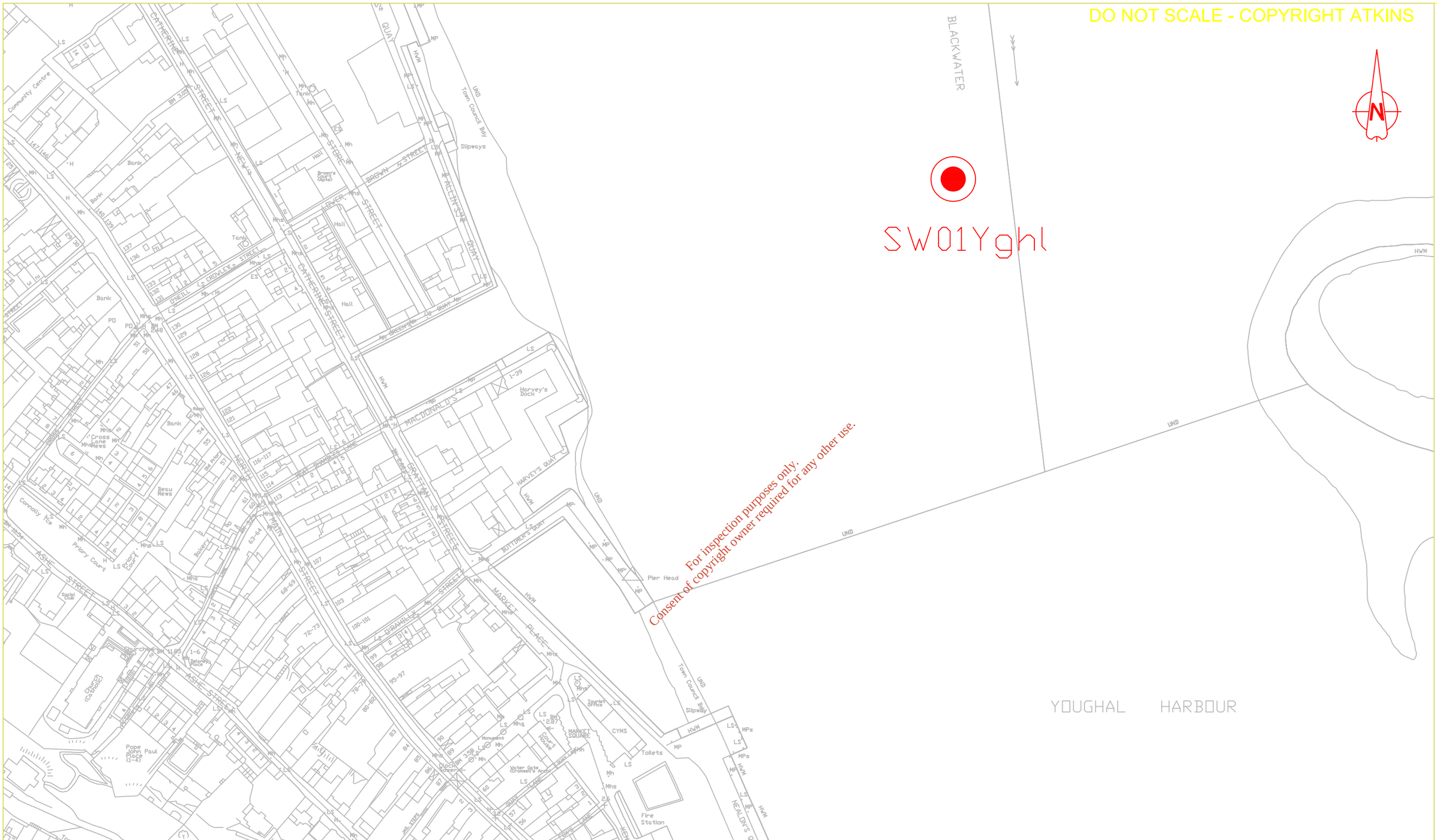
SECTION B.1
AGGLOMERATION BOUNDARY

Original Scale	Drawn	Checked	Authorised	Size
1:20000	PC	AF	KM	A3
	Date 16.09.08	Date 16.09.08	Date 16.09.08	

Drawing Number

DRAWING 1

Revision 1



0 10 Millimetres 50

Drawing Status: FINAL

Client

Cork County Council
County Hall
Cork

Rev	Description	By	Date	Chk'd	Auth
1	Revised Outfall Location	AF	14.03.11	PSM	JN

ATKINS

Project

YOUGHAL WASTE WATER
DISCHARGE LICENCE

Drawing Title

SECTION B.3
PRIMARY DISCHARGE POINT

Original Scale	Drawn	Checked	Authorised	Size
1:2000	PC	AF	KM	A3
	Date 16.09.08	Date 16.09.08	Date 16.09.08	

Drawing Number: DRAWING 3

Revision: 1

ANNEX C

REVISED SECTIONS C& D

ANNEX C1

REVISED SECTIONS C& D – EXISTING DISCHARGE

SECTION C: INFRASTRUCTURE & OPERATION

Advice on completing this section is provided in the accompanying Guidance Note.

C.1 Operational Information Requirements

Provide a description of the plant, process and design capacity for the areas of the waste water works where discharges occur, to include a copy of such plans, drawings or maps, (site plans and location maps, process flow diagrams), and such other particulars, reports and supporting documentation as are necessary to describe all aspects of the area of the waste water works discharging to the aquatic environment. Maps and drawings must be no larger than A3 size.

C.1.1 Storm Water Overflows

For each storm water overflow within the waste water works the following information shall be submitted:

- An assessment to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency, and
- Identify whether any of the storm water overflows are to be decommissioned, and identify a date by which these overflows will cease, if applicable.

C.1.1 Storm Water Overflows

An assessment to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows' (1995), was carried out using a hydraulic model of the network. The results of the assessment are detailed below.

Assessment of Storm Water Overflows

Overflow	Current Max Forward Flow	Spill Frequency (Per Bathing Season)	Approx. Annual Spill Volume ('000 m^3)	Operates at DWF	Service Level
Summerfield PStn Overflow	25	0 (max 3 allowable)	-	No	Satisfactory
Kilcoran Overflow	15	0 (max 3 allowable)	-	No	Satisfactory
Summerfield B Overflow	6	10 (max 3 allowable)	-	No	Unsatisfactory
Foxhole	9	0 (max 7 allowable)	-	No	Satisfactory
Dunn's Park	69	9 (max 7 allowable)	13	No	Unsatisfactory
Strand Holding Tank	100	<1 (max 3 allowable)	-	No	Satisfactory
Green Park Overflow	61	10 (max 7 allowable)	14	Yes – due to partially blocked weir plate	Unsatisfactory

Of the seven Combined Sewer Overflows (CSO's) that exist in the foul/combined sewer system that discharge into the Blackwater Estuary or other local watercourses, it has been determined that the

operation of three of the CSO's is currently unacceptable. The following works are proposed to the existing overflows as part of the Youghal Main Drainage Scheme.

Summerfield Pumping Station Overflow, Summerfield B Overflow, Kilcoran Overflow

Existing pumping and control systems in the Summerfield Pumping Station are to be upgraded as part of the Youghal Man Drainage Works. The Summerfield B and Kilcoran overflows are to be decommissioned. The remaining Summerfield Overflow will continue to operate as a compliant emergency overflow.

Green Park Overflow

The current overflow at Green Park is seen to spill significant volumes during all 200 bathing season events used in the hydraulic model, representing 20 years of historical rainfall data. This indicates that the frequency of spill is more than 10 times per bathing season, compared with the allowable seven at this location. This overflow is therefore considered unsatisfactory. In addition, this overflow operates in dry weather due to a partially blocked weir plate.

As part of the Youghal Main Drainage works, it is proposed to decommission the existing overflow weir on Lighthouse Hill and to direct all flows to the new Green Park Pumping Station. The existing Green Park Overflow pipework will be connected to an overflow from the wet well at the new pumping station. This overflow will operate in compliance with DoEHLG requirements. It is anticipated that this overflow will operate on 3 occasions per bathing season.

Dunn's Park Overflow

The overflow at Dunn's Park Pumping Station discharges to a channel draining the mudlands. This overflow operates on average nine times per bathing season, which is more than the allowable seven times and is therefore considered unsatisfactory.

As part of the Youghal Main Drainage Works, it is proposed to upgrade the existing pumping station at Dunn's Park. The existing primary discharge point will be converted to a compliant storm water overflow. The existing unsatisfactory discharge will be upgraded to act as an emergency overflow.

Paxe's Lane Secondary Discharge

All flows currently directed to the secondary discharge at Paxe's Lane are to be redirected to the new Green Park Pumping Station. The existing outfall at Paxe's Lane is to be connected to the new pumping station and will be utilised as an emergency overflow from the wet well.

Strand Holding Tank

The existing overflow at the strand holding tank will be upgraded to act as a compliant stormwater overflow including a screen. It is predicted to operate 2 times per bathing season.

Foxhole Overflow

The existing stormwater overflow at Foxhole will be upgraded to act as an emergency overflow. The existing secondary discharge will be decommissioned.

C.1.2 Pumping Stations

For each pump station operating within the waste water works, provide details of the following:

- Number of duty and standby pumps at each pump station;

- The measures taken in the event of power failure;
- Details of storage capacity at each pump station;
- Frequency and duration of activation of emergency overflow to receiving waters. Clarify the location where such discharges enter the receiving waters.

C.1.2 Pumping Stations

Summerfield Cross Pumping Station

At Summerfield Cross, the pumping capacity is currently 25 l/s. Flows which are in excess of the pump capacity are discharged via an emergency overflow into a small stream via the Summerfield Cross overflow (SW04Yghl). This stream discharges to the sea, adjacent to the beach at Claycastle. The sea off Claycastle beach is a designated bathing water.

The area of the pumping station wet well is estimated to be 6.2m^2 and the storage volume is estimated at 1.2m^3. The station contains two pumps which operate in a duty/standby arrangement.

As part of the Main Drainage project, it is proposed to upgrade the control and alarm systems. Connections will be provided for a back up generator in the event of loss of power. The station will be equipped with an automatic messaging service to the local curator and other relevant persons in the event of an emergency such as pump failure, power loss etc.

Front Strand Pumping Station

The current pump capacity at the Front Strand Pumping Station is 35 l/s for the foul flow pumps and 100 l/s for the combined operation of the low flow and high flow pumps. There is no overflow at this pumping station. However, flows in excess of the pump capacity back up into Strand Holding Tank and when the storage capacity of the tank is exceeded they are discharged untreated through a short outfall off the beach at Front Strand (SW05Yghl). The sea off Front Strand beach is a designated bathing water.

The area of the wet well at the Front Strand Pumping Station is estimated at 9.8m^2 and the storage volume is estimated at 6.4m^3. The pumping station contains four pumps, of which there are two low flow pumps and two high flow pumps. Only one low flow and one high flow pump can operate at any one time and these operate in a duty/assist arrangement. The pumps are manually changed over at regular intervals.

As part of the Youghal Main Drainage Scheme, it is proposed to upgrade the pumping system to provide 2 new 65 l/s low flow pumps (duty/standby), and 2 no. 75 l/s high flow pumps (duty/assist). Control and telemetry systems are also to be upgraded. Connections will be provided for a back up generator in the event of loss of power. The station will be equipped with an automatic messaging service to the local curator and other relevant persons in the event of an emergency such as pump failure, power loss etc.

The Front Strand storage tank, which provides storage upstream from the pumping station, is to be altered. The overflow level is to be altered to 1.85m OD(M) and an overflow screen installed. It is predicted that the overflow will operate 2 times per bathing season.

Dunn's Park Pumping Station

The current pump capacity at Dunn's Park Pumping Station is 69 l/s from a single pump. Flows in excess of pump capacity are discharged untreated into a drainage ditch within the mudlands (SW9). This in turn discharges into the estuary opposite Ferry Point which is within a designated 'Sensitive' area.

The area of the wet well at Dunn's Park Pumping Station is estimated at approximately 9.2m^2, and the storage volume is estimated at 7.4m^3. The pumping station contains two pumps, which normally operate in a duty/standby arrangement and are manually changed over at regular intervals.

As part of the Youghal Main Drainage Scheme, it is proposed to upgrade and extend the pumping station to act as the terminal pumping station for the entire scheme. It is intended to provide the following:

- *3 no. 100 l/s low flow pumps (duty/assist/standby) to new WWTP*
- *3 no. 100 l/s high flow pumps (duty/assist/standby) to new WWTP*
- *2 no. 100 l/s overflow pumps (duty/assist) to overflow discharging to Blackwater Estuary (SW01Yghl)*
- *150 m^3 additional storage capacity*
- *Upgraded telemetry, power and control systems*

The existing structure is to be utilised as far as is practicable and the second pumping station wet well/storage tank is to be constructed adjacent to the existing wet well, as an off line tank intended to service the high flow and overflow pumps only. This proposed wet well/storage tank is to contain an overflow weir and screens to be connected to the overflow pumps and the existing Dunn's Park Overflow Outfall (SW01Yghl) which discharges to the Blackwater Estuary.

The existing wet well will serve only the low flow pumps with an interconnecting overflow to the new tank. The existing overflow from this tank to the Mudlands is to be removed and a new overflow is to be constructed. This new overflow is to be connected to the existing pipe discharging to the Mudlands (SW07Yghl).

All overflow discharges are to be screened in accordance with the requirements of the UWWTR.

Connections will be provided for a back up generator in the event of loss of power. The station will be equipped with an automatic messaging service to the local curator and other relevant persons in the event of an emergency such as pump failure, power loss etc.

Foxhole Pumping Station

The existing pump capacity at Foxhole Pumping Station is 9 l/s. Flows in excess of pump capacity are discharged untreated into the adjacent Ballinvarrig contour drain (SW08Yghl). This channel discharges into the estuary, adjacent to the Youghal Landfill site. This area of the estuary is a designated 'Sensitive' area.

As part of the Youghal Main Drainage Scheme, it is proposed to upgrade the pumping system in the station to provide 2 no 40 l/s capacity pumps on a duty/standby arrangement. The existing overflow (SW08Yghl) will be retained. This overflow will operate as an emergency overflow only. The existing secondary discharge point will be decommissioned.

Green Park Pumping Station

It is proposed as part of the Youghal Main Drainage Scheme to construct a pumping station at Green Park in the existing comminutor station building. The new station will have the following characteristics:

- 107 m^3 storage
- 2 no. 100l/s storm pumps (duty/standby)
- 2 no. 85 l/s foul pumps (duty/standby)

Connections will be provided for a back up generator in the event of loss of power. The station will be equipped with an automatic messaging service to the local curator and other relevant persons in the event of an emergency such as pump failure, power loss etc.

The pumping station will be provided with 2 screened overflows. The lower overflow will discharge to the existing Green Park outfall (SW06Yghl) and is predicted to operate 3 times per bathing season.

The upper overflow will act as an emergency overflow, discharging to the existing Paxe's Lane outfall (SW02Yghl).

Attachment C.1 should contain supporting documentation with regard to the plant and process capacity, systems, storm water overflows, emergency overflows, etc., including flow diagrams of each with any relevant additional information. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, D.2, E.3 and F.2.

Attachment included	**Yes**	**No**
		√

C.2 Outfall Design and Construction

Provide details on the primary discharge point & secondary discharge points and storm overflows to include reference, location, design criteria and construction detail.

Type of Discharge	Primary Discharge (750mm diameter)
Unique Point Code	SW01Yghl
Location	Dunn's Park
Grid ref (6E, 6N)	210513, 078480

Type of Discharge	Secondary Discharge (450mm diameter)
Unique Point Code	SW02Yghl
Location	Paxes Lane
Grid ref (6E, 6N)	210996, 077419

Type of Discharge	Secondary Discharge (180mm diameter)
Unique Point Code	SW03Yghl
Location	Foxhole
Grid ref (6E, 6N)	210128, 080410

Type of Discharge	Emergency Overflow
Unique Point Code	SW04Yghl
Location	Summerfield Cross
Grid ref (6E, 6N)	209253, 076191

Type of Discharge	Stormwater Overflow (750mm diameter)
Unique Point Code	SW05Yghl
Location	Front Strand
Grid ref (6E, 6N)	210517, 076042

Type of Discharge	Stormwater Overflow (450mm diameter)
Unique Point Code	SW06Yghl
Location	Green Park
Grid ref (6E, 6N)	210956, 077117

Type of Discharge	Stormwater Overflow (750mm diameter)
Unique Point Code	SW07Yghl
Location	Dunn's Park
Grid ref (6E, 6N)	210262, 078412

Type of Discharge	Stormwater Overflow (300 mm diameter)
Unique Point Code	SW08Yghl
Location	Foxhole
Grid ref (6E, 6N)	209723, 079912

Type of Discharge	Stormwater Overflow
Unique Point Code	SW09Yghl
Location	Kilcoran
Grid ref (6E, 6N)	209244, 076218

Type of Discharge	Stormwater Overflow
Unique Point Code	SW10Yghl
Location	Summerfield B
Grid ref (6E, 6N)	209405, 076152

Attachment C.2 should contain any supporting documentation on the design and construction of any and all discharge outfalls, including stormwater overflows, from the waste water works.

Attachment included	**Yes**	**No**
		√

SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT

Advice on completing this section is provided in the accompanying Guidance Note.

Give particulars of the source, location, nature, composition, quantity, level and rate of discharges arising from the agglomeration and, where relevant, the period or periods during which such emissions are made or are to be made.

Details of all discharges of waste water from the agglomeration should be submitted via the following web based link: http://78.137.160.73/epa_wwd_licensing/. ***The applicant should address in particular all discharge points where the substances outlined in Tables D.1(i), (b) & (c) and D.1(ii), (b) & (c) of Annex 1 are emitted.***

Where it is considered that any of the substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are being discharged from the waste water works or are seen to be present in the receiving water environment downstream of a discharge from the works (as a result of any monitoring programme, e.g., under the Water Framework Directive Programme of Measures) the applicant shall screen the discharge for the relevant substance.

D.1 Discharges to Surface Waters

Details of all discharges of waste water from the agglomeration should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables D.1(i)(a), (b) & (c), should be completed for the primary discharge point from the agglomeration and Tables D.1(ii)(a), (b) & (c) should be completed for **each** secondary discharge point, where relevant. Table D.1(iii)(a) should be completed for **each** storm water overflow. Individual Tables must be completed for each discharge point.

Where monitoring information is available for the influent to the plant this data should also be provided in response to Section D.1.

Supporting information should form **Attachment D.1**

Attachment included	Yes	No
	√	

D.2 Tabular Data on Discharge Points

Applicants should submit the following information for each discharge point:

Table D.2:

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING
Point Code Provide label ID's	Point Type (e.g., Primary/ Secondary/ Storm Water Overflow)	Local Authority Name (e.g., Donegal County Council)	Receiving Water Body Type (e.g., River, Lake, Groundwater, Transitional, Coastal)	Receiving Water Body Name (e.g., River Suir)	Protected Area Type (e.g., SAC, candidate SAC, NHA, SPA etc.)	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference

An individual record (i.e. row) is required for each discharge point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, E.3 and F.2.

Attachment D.1

Discharges to Surface Waters

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

Discharge Point Code: SW01Yghl

Source of Emission:	Primary Discharge
Location:	Dunn's Park
Grid Ref. (12 digit, 6E, 6N):	210513, 078480
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive, SPA (Site Code 004028)
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted			
Normal/day	3960 m^3	Maximum/day	7920 m^3
Maximum rate/hour	330 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.0153 m^3/sec		

TABLE D.1(i)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (Primary Discharge Point)

Discharge Point Code: SW01Yghl

Number	Substance	As discharged	
		Max. daily average	
1	pH	7.1	
2	Temperature	Not available	
3	Electrical Conductivity(@25°C)	8.02	
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids	371	1469
5	Ammonia (as N)	23.7	93.72
6	Biochemical Oxygen Demand	422.7	1674
7	Chemical Oxygen Demand	1043.5	4132
8	Total Nitrogen (as N)	49.5	196
9	Nitrite (as N)	0.0071	0.028116
10	Nitrate (as N)	<0.4	Below LOD
11	Total Phosphorus (as P)	7.99	32
12	Orthophosphate (as P)[Note 1]	3.68	15
13	Sulphate (SO_4)	202.6	802
14	Phenols (sum) [Note 2] (ug/l)	<0.1	Below LOD

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Below LOD: Result below level of detection for given parameter

TABLE D.1(i)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Primary Discharge Point - Characteristics of the emission

Discharge Point Code: SW01Yghl

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine	<0.01	Below LOD (0.01µg/l)	Below LOD (0.01µg/l)
2	Dichloromethane	<1.0	Below LOD (1.0µg/l)	Below LOD (1.0µg/l)
3	Simazine	<0.01	Below LOD (0.01µg/l)	Below LOD (0.01µg/l)
4	Toluene	<1.0	Below LOD (1.0µg/l)	Below LOD (1.0µg/l)
5	Tributyltin	<0.02	Below LOD (0.02µg/l)	Below LOD (0.02µg/l)
6	Xylenes	<1.0	Below LOD (1.0µg/l)	Below LOD (1.0µg/l)
7	Arsenic	9	0.0356	13.02
8	Chromium	91	0.36	131.6215
9	Copper	41	0.16236	59.30199
10	Cyanide	<5	Below LOD (5µg/l)	Below LOD (5µg/l)
11	Fluoride	560	2.2176	809.978
12	Lead	54	0.21384	78.10506
13	Nickel	100	0.0396	14.4639
14	Zinc	109	0.43164	157.6565
15	Boron	766	3.0334	1107.935
16	Cadmium	100	0.0396	14.4639
17	Mercury	<0.2	Below LOD (0.2µg/l)	Below LOD (0.2µg/l)
18	Selenium	34	0.135	49.18
19	Barium	21.5	0.08514	31.1

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW02Yghl

Source of Emission:	Secondary Discharge
Location:	Paxe's Lane
Grid Ref. (12 digit, 6E, 6N):	210996, 077420
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)
(Secondary Discharge Point)

Discharge Point Code: SW02Yghl

Number	Substance	As discharged	
		Max. daily average	
1	pH	7.5	
2	Temperature	Not available	
3	Electrical Conductivity (@25°C)	1052	
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids	146	Not available
5	Ammonia (as N)	27	Not available
6	Biochemical Oxygen Demand	213	Not available
7	Chemical Oxygen Demand	339	Not available
8	Total Nitrogen (as N)	38	Not available
9	Nitrite (as N)	0.007	Not available
10	Nitrate (as N)	1.35	Not available
11	Total Phosphorus (as P) Note 1	5.4	Not available
12	Orthophosphate (as P)	3.53	Not available
13	Sulphate (SO_4)	51.6	Not available
14	Phenols (sum) Note 2 (ug/l)	<0.1	Not available

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: SW02Yghl

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine	<0.01	Not available	Not available
2	Dichloromethane	<1	Not available	Not available
3	Simazine	<0.01	Not available	Not available
4	Toluene	<1.0	Not available	Not available
5	Tributyltin	<0.02	Not available	Not available
6	Xylenes	<1.0	Not available	Not available
7	Arsenic	2	Not available	Not available
8	Chromium	11.85	Not available	Not available
9	Copper	47.15	Not available	Not available
10	Cyanide	<5	Not available	Not available
11	Fluoride	380	Not available	Not available
12	Lead	5.75	Not available	Not available
13	Nickel	6.25	Not available	Not available
14	Zinc	43.15	Not available	Not available
15	Boron	92	Not available	Not available
16	Cadmium	5.25	Not available	Not available
17	Mercury	0.5	Not available	Not available
18	Selenium	5	Not available	Not available
19	Barium	34	Not available	Not available

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW03Yghl

Source of Emission:	Secondary Discharge
Location:	Foxhole
Grid Ref. (12 digit, 6E, 6N):	210128, 080410
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District
Designation of receiving waters:	Nutrient Sensitive, SPA (Site Code 004028)
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted			
Normal/day	134 m^3	Maximum/day	268 m^3
Maximum rate/hour	11 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.0052 m^3/sec		

TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)
(Secondary Discharge Point)

Discharge Point Code: SW03Yghl

Number	Substance	As discharged	
		Max. daily average	
1	pH	6.1	
2	Temperature	Not available	
3	Electrical Conductivity (@25°C)	2701	
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids	16	2.1
5	Ammonia (as N)	27	3.667
6	Biochemical Oxygen Demand	1.0	0.134
7	Chemical Oxygen Demand	460	61.68
8	Total Nitrogen (as N)	41.5	5.56
9	Nitrite (as N)	0.025	0.00335
10	Nitrate (as N)	4.17	0.559
11	Total Phosphorus (as P) Note 1	0.21	0.028
12	Orthophosphate (as P)	0.315	0.042
13	Sulphate (SO_4)	606.8	81.31
14	Phenols (sum) Note 2 (ug/l)	<0.1	Below LOD

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: SW03Yghl

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine	<0.01	Below LOD	Below LOD
2	Dichloromethane	<1.0	Below LOD	Below LOD
3	Simazine	<0.01	Below LOD	Below LOD
4	Toluene	<1.0	Below LOD	Below LOD
5	Tributyltin	<0.02	Below LOD	Below LOD
6	Xylenes	<1.0	Below LOD	Below LOD
7	Arsenic	<0.96	Below LOD	Below LOD
8	Chromium	0.01	0.00134	0.489
9	Copper	0.01	0.00134	0.489
10	Cyanide	5	0.00067	0.245
11	Fluoride	130	0.01742	6.36
12	Lead	0.01	0.00134	0.489
13	Nickel	0.01	0.00134	0.489
14	Zinc	0.106	0.01425	5.2
15	Boron	0.074	0.0099	3.62
16	Cadmium	0.01	0.00134	0.489
17	Mercury	0.6	0.00008	0.029
18	Selenium	1	0.000134	0.049
19	Barium	10	0.00134	0.489

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW04Yghl

Source of Emission:	Emergency Overflow
Location:	Summerfield Cross
Grid Ref. (12 digit, 6E, 6N):	209253, 076191
Name of receiving waters:	Youghal Bay
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Bathing Water
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)
(Secondary Discharge Point)

Discharge Point Code: SW04Yghl

Number	Substance	As discharged	
		Max. daily average	
1	pH	Not available	
2	Temperature	Not available	
3	Electrical Conductivity (@25°C)	Not available	
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids	Not available	Not available
5	Ammonia (as N)	Not available	Not available
6	Biochemical Oxygen Demand	Not available	Not available
7	Chemical Oxygen Demand	Not available	Not available
8	Total Nitrogen (as N)	Not available	Not available
9	Nitrite (as N)	Not available	Not available
10	Nitrate (as N)	Not available	Not available
11	Total Phosphorus (as P) Note 1	Not available	Not available
12	Orthophosphate (as P)	Not available	Not available
13	Sulphate (SO_4)	Not available	Not available
14	Phenols (sum) Note 2 (ug/l)	Not available	Not available

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: SW04Yghl

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine	Not available	Not available	Not available
2	Dichloromethane	Not available	Not available	Not available
3	Simazine	Not available	Not available	Not available
4	Toluene	Not available	Not available	Not available
5	Tributyltin	Not available	Not available	Not available
6	Xylenes	Not available	Not available	Not available
7	Arsenic	Not available	Not available	Not available
8	Chromium	Not available	Not available	Not available
9	Copper	Not available	Not available	Not available
10	Cyanide	Not available	Not available	Not available
11	Fluoride	Not available	Not available	Not available
12	Lead	Not available	Not available	Not available
13	Nickel	Not available	Not available	Not available
14	Zinc	Not available	Not available	Not available
15	Boron	Not available	Not available	Not available
16	Cadmium	Not available	Not available	Not available
17	Mercury	Not available	Not available	Not available
18	Selenium	Not available	Not available	Not available
19	Barium	Not available	Not available	Not available

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW05Yghl

Source of Emission:	Storm Water Overflow
Location:	Front Strand
Grid Ref. (12 digit, 6E, 6N):	210517, 76042
Name of receiving waters:	Youghal Bay
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Bathing Water
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)
(Secondary Discharge Point)

Discharge Point Code: SW05Yghl

Number	Substance	As discharged	
		Max. daily average	
1	pH	7.3	
2	Temperature	Not available	
3	Electrical Conductivity (@25°C)	384	
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids	60	Not available
5	Ammonia (as N)	22.1	Not available
6	Biochemical Oxygen Demand	104	Not available
7	Chemical Oxygen Demand	450	Not available
8	Total Nitrogen (as N)	31	Not available
9	Nitrite (as N)	Not available	Not available
10	Nitrate (as N)	Not available	Not available
11	Total Phosphorus (as P) Note 1	8.23	Not available
12	Orthophosphate (as P)	2.4	Not available
13	Sulphate (SO_4)	328	Not available
14	Phenols (sum) Note 2 (ug/l)	<0.1	Not available

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: SW05Yghl

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine	<0.01	Not available	Not available
2	Dichloromethane	<1	Not available	Not available
3	Simazine	<0.01	Not available	Not available
4	Toluene	<1	Not available	Not available
5	Tributyltin	Not available	Not available	Not available
6	Xylenes	<1	Not available	Not available
7	Arsenic	1	Not available	Not available
8	Chromium	Not available	Not available	Not available
9	Copper	Not available	Not available	Not available
10	Cyanide	<5	Not available	Not available
11	Fluoride	Not available	Not available	Not available
12	Lead	Not available	Not available	Not available
13	Nickel	Not available	Not available	Not available
14	Zinc	Not available	Not available	Not available
15	Boron	Not available	Not available	Not available
16	Cadmium	Not available	Not available	Not available
17	Mercury	0.3	Not available	Not available
18	Selenium	2	Not available	Not available
19	Barium	Not available	Not available	Not available

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW06Yghl

Source of Emission:	Storm Water Overflow
Location:	Green Park
Grid Ref. (12 digit, 6E, 6N):	210517, 76042
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted			
Normal/day	1598 m^3	Maximum/day	3197 m^3
Maximum rate/hour	133 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.006 m^3/sec		

TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)
(Secondary Discharge Point)

Discharge Point Code: SW06Yghl

Number	Substance	As discharged	
		Max. daily average	
1	pH	Not available	
2	Temperature	Not available	
3	Electrical Conductivity (@25°C)	Not available	
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids	Not available	Not available
5	Ammonia (as N)	Not available	Not available
6	Biochemical Oxygen Demand	Not available	Not available
7	Chemical Oxygen Demand	Not available	Not available
8	Total Nitrogen (as N)	Not available	Not available
9	Nitrite (as N)	Not available	Not available
10	Nitrate (as N)	Not available	Not available
11	Total Phosphorus (as P) Note 1	Not available	Not available
12	Orthophosphate (as P)	Not available	Not available
13	Sulphate (SO_4)	Not available	Not available
14	Phenols (sum) Note 2 (ug/l)	Not available	Not available

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: SW06Yghl

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine	Not available	Not available	Not available
2	Dichloromethane	Not available	Not available	Not available
3	Simazine	Not available	Not available	Not available
4	Toluene	Not available	Not available	Not available
5	Tributyltin	Not available	Not available	Not available
6	Xylenes	Not available	Not available	Not available
7	Arsenic	Not available	Not available	Not available
8	Chromium	Not available	Not available	Not available
9	Copper	Not available	Not available	Not available
10	Cyanide	Not available	Not available	Not available
11	Fluoride	Not available	Not available	Not available
12	Lead	Not available	Not available	Not available
13	Nickel	Not available	Not available	Not available
14	Zinc	Not available	Not available	Not available
15	Boron	Not available	Not available	Not available
16	Cadmium	Not available	Not available	Not available
17	Mercury	Not available	Not available	Not available
18	Selenium	Not available	Not available	Not available
19	Barium	Not available	Not available	Not available

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW07Yghl

Source of Emission:	Stormwater Overflow
Location:	Dunn's Park
Grid Ref. (12 digit, 6E, 6N):	210262, 078412
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive, SPA (Site Code 004028)
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)
(Secondary Discharge Point)

Discharge Point Code: SW07Yghl

Number	Substance	As discharged	
		Max. daily average	
1	pH	Not available	
2	Temperature	Not available	
3	Electrical Conductivity (@25°C)	Not available	
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids	Not available	Not available
5	Ammonia (as N)	Not available	Not available
6	Biochemical Oxygen Demand	Not available	Not available
7	Chemical Oxygen Demand	Not available	Not available
8	Total Nitrogen (as N)	Not available	Not available
9	Nitrite (as N)	Not available	Not available
10	Nitrate (as N)	Not available	Not available
11	Total Phosphorus (as P) Note 1	Not available	Not available
12	Orthophosphate (as P)	Not available	Not available
13	Sulphate (SO_4)	Not available	Not available
14	Phenols (sum) Note 2 (ug/l)	Not available	Not available

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: SW07Yghl

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine	Not available	Not available	Not available
2	Dichloromethane	Not available	Not available	Not available
3	Simazine	Not available	Not available	Not available
4	Toluene	Not available	Not available	Not available
5	Tributyltin	Not available	Not available	Not available
6	Xylenes	Not available	Not available	Not available
7	Arsenic	Not available	Not available	Not available
8	Chromium	Not available	Not available	Not available
9	Copper	Not available	Not available	Not available
10	Cyanide	Not available	Not available	Not available
11	Fluoride	Not available	Not available	Not available
12	Lead	Not available	Not available	Not available
13	Nickel	Not available	Not available	Not available
14	Zinc	Not available	Not available	Not available
15	Boron	Not available	Not available	Not available
16	Cadmium	Not available	Not available	Not available
17	Mercury	Not available	Not available	Not available
18	Selenium	Not available	Not available	Not available
19	Barium	Not available	Not available	Not available

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW08Yghl

Source of Emission:	Stormwater Overflow
Location:	Foxhole
Grid Ref. (12 digit, 6E, 6N):	209723, 079912
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive, SPA (Site Code 004028)
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (1 table per discharge point)
(Secondary Discharge Point)

Discharge Point Code: SW08Yghl

Number	Substance	As discharged	
		Max. daily average	
1	pH	Not available	
2	Temperature	Not available	
3	Electrical Conductivity (@25°C)	Not available	
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids	Not available	Not available
5	Ammonia (as N)	Not available	Not available
6	Biochemical Oxygen Demand	Not available	Not available
7	Chemical Oxygen Demand	Not available	Not available
8	Total Nitrogen (as N)	Not available	Not available
9	Nitrite (as N)	Not available	Not available
10	Nitrate (as N)	Not available	Not available
11	Total Phosphorus (as P) Note 1	Not available	Not available
12	Orthophosphate (as P)	Not available	Not available
13	Sulphate (SO_4)	Not available	Not available
14	Phenols (sum) Note 2 (ug/l)	Not available	Not available

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

TABLE D.1(ii)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Secondary Discharge Point - Characteristics of the emission (1 table per discharge point)

Discharge Point Code: SW08Yghl

Number	Substance	As discharged		
		Max. daily average (µg/l)	kg/day	kg/year
1	Atrazine	Not available	Not available	Not available
2	Dichloromethane	Not available	Not available	Not available
3	Simazine	Not available	Not available	Not available
4	Toluene	Not available	Not available	Not available
5	Tributyltin	Not available	Not available	Not available
6	Xylenes	Not available	Not available	Not available
7	Arsenic	Not available	Not available	Not available
8	Chromium	Not available	Not available	Not available
9	Copper	Not available	Not available	Not available
10	Cyanide	Not available	Not available	Not available
11	Fluoride	Not available	Not available	Not available
12	Lead	Not available	Not available	Not available
13	Nickel	Not available	Not available	Not available
14	Zinc	Not available	Not available	Not available
15	Boron	Not available	Not available	Not available
16	Cadmium	Not available	Not available	Not available
17	Mercury	Not available	Not available	Not available
18	Selenium	Not available	Not available	Not available
19	Barium	Not available	Not available	Not available

TABLE D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)

Discharge Point Code: SW09Yghl

Source of Emission:	Storm Water Overflow
Location:	Kilcoran
Grid Ref. (12 digit, 6E, 6N):	209244, 076218
Name of receiving waters:	Youghal Bay
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Bathing Water
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

TABLE D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)

Discharge Point Code: SW10Yghl

Source of Emission:	Storm Water Overflow
Location:	Summerfield (B)
Grid Ref. (12 digit, 6E, 6N):	209405, 076152
Name of receiving waters:	Youghal Bay
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Bathing Water
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

Attachment D.2

Tabular Data on Discharge Points

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING	VERIFIED
SW01Yghl	Primary	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive; SPA	210513	78480	No
SW02Yghl	Secondary	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive	210996	77419	No
SW03Yghl	Secondary	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive, SPA	210128	80410	No
SW04Yghl	Emergency Overflow	Cork County Council	Coastal	Youghal Bay	Bathing Water	209253	76191	No
SW05Yghl	Stormwater Overflow	Cork County Council	Coastal	Youghal Bay	Bathing Water	210517	76042	No
SW06Yghl	Stormwater Overflow	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive	210956	77177	No
SW07Yghl	Stormwater Overflow	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive, SPA	210262	78412	No
SW08Yghl	Stormwater Overflow	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive, SPA	209723	79912	No
SW09Yghl	Storm Water Overflow	Cork County Council	Coastal	Youghal Bay	Bathing Water	209244	76218	No
SW10Yghl	Storm Water Overflow	Cork County Council	Coastal	Youghal Bay	Bathing Water	209405	76152	No

ANNEX C2

REVISED SECTIONS C& D – PROPOSED DISCHARGE

SECTION C: INFRASTRUCTURE & OPERATION

Advice on completing this section is provided in the accompanying Guidance Note.

C.1 Operational Information Requirements

Provide a description of the plant, process and design capacity for the areas of the waste water works where discharges occur, to include a copy of such plans, drawings or maps, (site plans and location maps, process flow diagrams), and such other particulars, reports and supporting documentation as are necessary to describe all aspects of the area of the waste water works discharging to the aquatic environment. Maps and drawings must be no larger than A3 size.

C.1.1 Storm Water Overflows

For each storm water overflow within the waste water works the following information shall be submitted:

- An assessment to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency, and
- Identify whether any of the storm water overflows are to be decommissioned, and identify a date by which these overflows will cease, if applicable.

C.1.1 Storm Water Overflows

An assessment to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows' (1995), was carried out using a hydraulic model of the network. The results of the assessment are detailed below.

Assessment of Storm Water Overflows

Overflow	Current Max Forward Flow	Spill Frequency (Per Bathing Season)	Approx. Annual Spill Volume ('000 m^3)	Operates at DWF	Service Level
Summerfield PStn Overflow	25	0 (max 3 allowable)	-	No	Satisfactory
Kilcoran Overflow	15	0 (max 3 allowable)	-	No	Satisfactory
Summerfield B Overflow	6	10 (max 3 allowable)	-	No	Unsatisfactory
Foxhole	9	0 (max 7 allowable)	-	No	Satisfactory
Dunn's Park	69	9 (max 7 allowable)	13	No	Unsatisfactory
Strand Holding Tank	100	<1 (max 3 allowable)	-	No	Satisfactory
Green Park Overflow	61	10 (max 7 allowable)	14	Yes – due to partially blocked weir plate	Unsatisfactory

Of the seven Combined Sewer Overflows (CSO's) that exist in the foul/combined sewer system that discharge into the Blackwater Estuary or other local watercourses, it has been determined that the

operation of three of the CSO's is currently unacceptable. The following works are proposed to the existing overflows as part of the Youghal Main Drainage Scheme.

Summerfield Pumping Station Overflow, Summerfield B Overflow, Kilcoran Overflow

Existing pumping and control systems in the Summerfield Pumping Station are to be upgraded as part of the Youghal Man Drainage Works. The Summerfield B and Kilcoran overflows are to be decommissioned. The remaining Summerfield Overflow will continue to operate as a compliant emergency overflow.

Green Park Overflow

The current overflow at Green Park is seen to spill significant volumes during all 200 bathing season events used in the hydraulic model, representing 20 years of historical rainfall data. This indicates that the frequency of spill is more than 10 times per bathing season, compared with the allowable seven at this location. This overflow is therefore considered unsatisfactory. In addition, this overflow operates in dry weather due to a partially blocked weir plate.

As part of the Youghal Main Drainage works, it is proposed to decommission the existing overflow weir on Lighthouse Hill and to direct all flows to the new Green Park Pumping Station. The existing Green Park Overflow pipework will be connected to an overflow from the wet well at the new pumping station. This overflow will operate in compliance with DoEHLG requirements. It is anticipated that this overflow will operate on 3 occasions per bathing season.

Dunn's Park Overflow

The overflow at Dunn's Park Pumping Station discharges to a channel draining the mudlands. This overflow operates on average nine times per bathing season, which is more than the allowable seven times and is therefore considered unsatisfactory.

As part of the Youghal Main Drainage Works, it is proposed to upgrade the existing pumping station at Dunn's Park. The existing primary discharge point will be converted to a compliant storm water overflow. The existing unsatisfactory discharge will be upgraded to act as an emergency overflow.

Paxe's Lane Secondary Discharge

All flows currently directed to the secondary discharge at Paxe's Lane are to be redirected to the new Green Park Pumping Station. The existing outfall at Paxe's Lane is to be connected to the new pumping station and will be utilised as an emergency overflow from the wet well.

Strand Holding Tank

The existing overflow at the strand holding tank will be upgraded to act as a compliant stormwater overflow including a screen. It is predicted to operate 2 times per bathing season.

Foxhole Overflow

The existing stormwater overflow at Foxhole will be upgraded to act as an emergency overflow. The existing secondary discharge will be decommissioned.

C.1.2 Pumping Stations

For each pump station operating within the waste water works, provide details of the following:

- Number of duty and standby pumps at each pump station;

- The measures taken in the event of power failure;
- Details of storage capacity at each pump station;
- Frequency and duration of activation of emergency overflow to receiving waters. Clarify the location where such discharges enter the receiving waters.

C.1.2 Pumping Stations

Summerfield Cross Pumping Station

At Summerfield Cross, the pumping capacity is currently 25 l/s. Flows which are in excess of the pump capacity are discharged via an emergency overflow into a small stream via the Summerfield Cross overflow (SW04Yghl). This stream discharges to the sea, adjacent to the beach at Claycastle. The sea off Claycastle beach is a designated bathing water.

The area of the pumping station wet well is estimated to be 6.2m^2 and the storage volume is estimated at 1.2m^3. The station contains two pumps which operate in a duty/standby arrangement.

As part of the Main Drainage project, it is proposed to upgrade the control and alarm systems. Connections will be provided for a back up generator in the event of loss of power. The station will be equipped with an automatic messaging service to the local curator and other relevant persons in the event of an emergency such as pump failure, power loss etc.

Front Strand Pumping Station

The current pump capacity at the Front Strand Pumping Station is 35 l/s for the foul flow pumps and 100 l/s for the combined operation of the low flow and high flow pumps. There is no overflow at this pumping station. However, flows in excess of the pump capacity back up into Strand Holding Tank and when the storage capacity of the tank is exceeded they are discharged untreated through a short outfall off the beach at Front Strand (SW05Yghl). The sea off Front Strand beach is a designated bathing water.

The area of the wet well at the Front Strand Pumping Station is estimated at 9.8m^2 and the storage volume is estimated at 6.4m^3. The pumping station contains four pumps, of which there are two low flow pumps and two high flow pumps. Only one low flow and one high flow pump can operate at any one time and these operate in a duty/assist arrangement. The pumps are manually changed over at regular intervals.

As part of the Youghal Main Drainage Scheme, it is proposed to upgrade the pumping system to provide 2 new 65 l/s low flow pumps (duty/standby), and 2 no. 75 l/s high flow pumps (duty/assist). Control and telemetry systems are also to be upgraded. Connections will be provided for a back up generator in the event of loss of power. The station will be equipped with an automatic messaging service to the local curator and other relevant persons in the event of an emergency such as pump failure, power loss etc.

The Front Strand storage tank, which provides storage upstream from the pumping station, is to be altered. The overflow level is to be altered to 1.85m OD(M) and an overflow screen installed. It is predicted that the overflow will operate 2 times per bathing season.

Dunn's Park Pumping Station

The current pump capacity at Dunn's Park Pumping Station is 69 l/s from a single pump. Flows in excess of pump capacity are discharged untreated into a drainage ditch within the mudlands (SW9). This in turn discharges into the estuary opposite Ferry Point which is within a designated 'Sensitive' area.

The area of the wet well at Dunn's Park Pumping Station is estimated at approximately 9.2m^2, and the storage volume is estimated at 7.4m^3. The pumping station contains two pumps, which normally operate in a duty/standby arrangement and are manually changed over at regular intervals.

As part of the Youghal Main Drainage Scheme, it is proposed to upgrade and extend the pumping station to act as the terminal pumping station for the entire scheme. It is intended to provide the following:

- *3 no. 100 l/s low flow pumps (duty/assist/standby) to new WWTP*
- *3 no. 100 l/s high flow pumps (duty/assist/standby) to new WWTP*
- *2 no. 100 l/s overflow pumps (duty/assist) to overflow discharging to Blackwater Estuary (SW01Yghl)*
- *150 m^3 additional storage capacity*
- *Upgraded telemetry, power and control systems*

The existing structure is to be utilised as far as is practicable and the second pumping station wet well/storage tank is to be constructed adjacent to the existing wet well, as an off line tank intended to service the high flow and overflow pumps only. This proposed wet well/storage tank is to contain an overflow weir and screens to be connected to the overflow pumps and the existing Dunn's Park Overflow Outfall (SW01Yghl) which discharges to the Blackwater Estuary.

The existing wet well will serve only the low flow pumps with an interconnecting overflow to the new tank. The existing overflow from this tank to the Mudlands is to be removed and a new overflow is to be constructed. This new overflow is to be connected to the existing pipe discharging to the Mudlands (SW07Yghl).

All overflow discharges are to be screened in accordance with the requirements of the UWWTR.

Connections will be provided for a back up generator in the event of loss of power. The station will be equipped with an automatic messaging service to the local curator and other relevant persons in the event of an emergency such as pump failure, power loss etc.

Foxhole Pumping Station

The existing pump capacity at Foxhole Pumping Station is 9 l/s. Flows in excess of pump capacity are discharged untreated into the adjacent Ballinvarrig contour drain (SW08Yghl). This channel discharges into the estuary, adjacent to the Youghal Landfill site. This area of the estuary is a designated 'Sensitive' area.

As part of the Youghal Main Drainage Scheme, it is proposed to upgrade the pumping system in the station to provide 2 no 40 l/s capacity pumps on a duty/standby arrangement. The existing overflow (SW08Yghl) will be retained. This overflow will operate as an emergency overflow only. The existing secondary discharge point will be decommissioned.

Green Park Pumping Station

It is proposed as part of the Youghal Main Drainage Scheme to construct a pumping station at Green Park in the existing comminutor station building. The new station will have the following characteristics:

- 107 m^3 storage
- 2 no. 100l/s storm pumps (duty/standby)
- 2 no. 85 l/s foul pumps (duty/standby)

Connections will be provided for a back up generator in the event of loss of power. The station will be equipped with an automatic messaging service to the local curator and other relevant persons in the event of an emergency such as pump failure, power loss etc.

The pumping station will be provided with 2 screened overflows. The lower overflow will discharge to the existing Green Park outfall (SW06Yghl) and is predicted to operate 3 times per bathing season.

The upper overflow will act as an emergency overflow, discharging to the existing Paxe's Lane outfall (SW02Yghl).

Attachment C.1 should contain supporting documentation with regard to the plant and process capacity, systems, storm water overflows, emergency overflows, etc., including flow diagrams of each with any relevant additional information. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, D.2, E.3 and F.2.

Attachment included	**Yes**	**No**
		√

C.2 Outfall Design and Construction

Provide details on the primary discharge point & secondary discharge points and storm overflows to include reference, location, design criteria and construction detail.

Type of Discharge	Primary Discharge (minimum 450mm diameter) (proposed Outfall)
Unique Point Code	SW01Yghl
Location	Green's Dock
Grid ref (6E, 6N)	210513, 078480

Type of Discharge	Storm Water Overflow (750mm diameter) (existing Outfall)
Unique Point Code	SW01Yghl
Location	Dunn's Park
Grid ref (6E, 6N)	210513, 078480

Type of Discharge	Emergency Overflow (450mm diameter)
Unique Point Code	SW02Yghl
Location	Paxes Lane
Grid ref (6E, 6N)	210996, 077419

Type of Discharge	Decommissioned
Unique Point Code	SW03Yghl
Location	Foxhole
Grid ref (6E, 6N)	210128, 080410

Type of Discharge	Emergency Overflow
Unique Point Code	SW04Yghl
Location	Summerfield Cross
Grid ref (6E, 6N)	209253, 076191

Type of Discharge	Stormwater Overflow (750mm diameter)
Unique Point Code	SW05Yghl
Location	Front Strand
Grid ref (6E, 6N)	210517, 076042

Type of Discharge	Stormwater Overflow (450mm diameter)

Unique Point Code	SW06Yghl
Location	Green Park
Grid ref (6E, 6N)	210956, 077117

Type of Discharge	Emergency Overflow (750mm diameter)
Unique Point Code	SW07Yghl
Location	Dunn's Park
Grid ref (6E, 6N)	210262, 078412

Type of Discharge	Emergency Overflow (300 mm diameter)
Unique Point Code	SW08Yghl
Location	Foxhole
Grid ref (6E, 6N)	209723, 079912

Type of Discharge	Decommissioned
Unique Point Code	SW09Yghl
Location	Kilcoran
Grid ref (6E, 6N)	209244, 076218

Type of Discharge	Decommissioned
Unique Point Code	SW10Yghl
Location	Summerfield B
Grid ref (6E, 6N)	209405, 076152

Attachment C.2 should contain any supporting documentation on the design and construction of any and all discharge outfalls, including stormwater overflows, from the waste water works.

Attachment included	**Yes**	**No**
		√

SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT

Advice on completing this section is provided in the accompanying Guidance Note.

Give particulars of the source, location, nature, composition, quantity, level and rate of discharges arising from the agglomeration and, where relevant, the period or periods during which such emissions are made or are to be made.

Details of all discharges of waste water from the agglomeration should be submitted via the following web based link: http://78.137.160.73/epa_wwd_licensing/. ***The applicant should address in particular all discharge points where the substances outlined in Tables D.1(i), (b) & (c) and D.1(ii), (b) & (c) of Annex 1 are emitted.***

Where it is considered that any of the substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are being discharged from the waste water works or are seen to be present in the receiving water environment downstream of a discharge from the works (as a result of any monitoring programme, e.g., under the Water Framework Directive Programme of Measures) the applicant shall screen the discharge for the relevant substance.

D.1 Discharges to Surface Waters

Details of all discharges of waste water from the agglomeration should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables D.1(i)(a), (b) & (c), should be completed for the primary discharge point from the agglomeration and Tables D.1(ii)(a), (b) & (c) should be completed for **each** secondary discharge point, where relevant. Table D.1(iii)(a) should be completed for **each** storm water overflow. Individual Tables must be completed for each discharge point.

Where monitoring information is available for the influent to the plant this data should also be provided in response to Section D.1.

Supporting information should form **Attachment D.1**

Attachment included	Yes	No
	√	

D.2 Tabular Data on Discharge Points

Applicants should submit the following information for each discharge point:

Table D.2:

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING
Point Code Provide label ID's	Point Type (e.g., Primary/ Secondary/ Storm Water Overflow)	Local Authority Name (e.g., Donegal County Council)	Receiving Water Body Type (e.g., River, Lake, Groundwater, Transitional, Coastal)	Receiving Water Body Name (e.g., River Suir)	Protected Area Type (e.g., SAC, candidate SAC, NHA, SPA etc.)	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference

An individual record (i.e. row) is required for each discharge point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, E.3 and F.2.

Attachment D.1

Discharges to Surface Waters

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

Discharge Point Code: SW01Yghl

Source of Emission:	Primary Discharge
Location:	Green's Quay
Grid Ref. (12 digit, 6E, 6N):	210852, 078125
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive, SPA (Site Code 004028)
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted			
Normal/day	4,500 m^3	Maximum/day	25,920 m^3
Maximum rate/hour	1080 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.042m^3/sec		

TABLE D.1(i)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of the emission (Primary Discharge Point)

Discharge Point Code: SW01Yghl

Number	Substance	Proposed discharge @ Normal Flow 4500m3/day	
		Max. daily average	
1	pH	Not available	
2	Temperature	Not available	
3	Electrical Conductivity(@25°C)	Not available	
		Max. daily average (mg/l)	**kg/day**
4	Suspended Solids	35	161
5	Ammonia (as N)	Not available	
6	Biochemical Oxygen Demand	25	115
7	Chemical Oxygen Demand	125	575
8	Total Nitrogen (as N)	15	69
9	Nitrite (as N)	Not available	
10	Nitrate (as N)	Not available	
11	Total Phosphorus (as P)	2	9.2
12	Orthophosphate (as P)[Note 1]	Not available	
13	Sulphate (SO_4)	Not available	
14	Phenols (sum) [Note 2] (ug/l)	Not available	

Note 1: For waste water samples this monitoring should be undertaken on a sample filtered on 0.45µm filter paper.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Below LOD: Result below level of detection for given parameter

TABLE D.1(i)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS

Primary Discharge Point - Characteristics of the emission

Discharge Point Code: SW01Yghl

Number	Substance	As discharged		
		Max. daily average (µg/l)	**kg/day**	**kg/year**
1	Atrazine	In accordance with WATER QUALITY (DANGEROUS SUBSTANCES) REGULATIONS, 2001		
2	Dichloromethane			
3	Simazine			
4	Toluene			
5	Tributyltin			
6	Xylenes			
7	Arsenic			
8	Chromium			
9	Copper			
10	Cyanide			
11	Fluoride			
12	Lead			
13	Nickel			
14	Zinc			
15	Boron			
16	Cadmium			
17	Mercury			
18	Selenium			
19	Barium			

Below LOD: Concentration result below level of detection for given parameter, unable to calculate loading.

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

Discharge Point Code: SW01Yghl

Source of Emission:	Emergency Overflow
Location:	Dunn's Park
Grid Ref. (12 digit, 6E, 6N):	210513, 078480
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive, SPA (Site Code 004028)
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	Normal/day	Normal/day	Normal/day
Maximum rate/hour	Maximum rate/hour	Maximum rate/hour	Maximum rate/hour
Dry Weather Flow	Dry Weather Flow	Dry Weather Flow	Dry Weather Flow

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW02Yghl

Source of Emission:	Emergency Overflow
Location:	Paxe's Lane
Grid Ref. (12 digit, 6E, 6N):	210996, 077420
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW03Yghl

Source of Emission:	Decommissioned
Location:	Foxhole
Grid Ref. (12 digit, 6E, 6N):	210128, 080410
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District
Designation of receiving waters:	Nutrient Sensitive, SPA (Site Code 004028)
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	Normal/day	Normal/day	Normal/day
Maximum rate/hour	Maximum rate/hour	Maximum rate/hour	Maximum rate/hour
Dry Weather Flow	Dry Weather Flow	Dry Weather Flow	Dry Weather Flow

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW04Yghl

Source of Emission:	Emergency Overflow
Location:	Summerfield Cross
Grid Ref. (12 digit, 6E, 6N):	209253, 076191
Name of receiving waters:	Youghal Bay
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Bathing Water
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW05Yghl

Source of Emission:	Storm Water Overflow
Location:	Front Strand
Grid Ref. (12 digit, 6E, 6N):	210517, 76042
Name of receiving waters:	Youghal Bay
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Bathing Water
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW06Yghl

Source of Emission:	Storm Water Overflow
Location:	Green Park
Grid Ref. (12 digit, 6E, 6N):	210517, 76042
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted			
Normal/day	1598 m^3	Maximum/day	3197 m^3
Maximum rate/hour	133 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.006 m^3/sec		

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW07Yghl

Source of Emission:	Emergency Overflow
Location:	Dunn's Park
Grid Ref. (12 digit, 6E, 6N):	210262, 078412
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive, SPA (Site Code 004028)
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(ii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Secondary Discharge Point) (1 table per discharge point)

Discharge Point Code: SW08Yghl

Source of Emission:	Emergency Overflow
Location:	Foxhole
Grid Ref. (12 digit, 6E, 6N):	209723, 079912
Name of receiving waters:	Lower Blackwater Estuary
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Nutrient Sensitive, SPA (Site Code 004028)
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow (Tidal currents varying from 0.02 – 0.89 $m.sec^{-1}$)

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr
Dry Weather Flow	m^3/sec		

TABLE D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)

Discharge Point Code: SW09Yghl

Source of Emission:	Decommissioned
Location:	Kilcoran
Grid Ref. (12 digit, 6E, 6N):	209244, 076218
Name of receiving waters:	Youghal Bay
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Bathing Water
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

TABLE D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS
(Storm Water Overflow) (1 table per discharge point)

Discharge Point Code: SW10Yghl

Source of Emission:	Decommissioned
Location:	Summerfield (B)
Grid Ref. (12 digit, 6E, 6N):	209405, 076152
Name of receiving waters:	Youghal Bay
River Basin District:	South Western River Basin District (SWRBD)
Designation of receiving waters:	Bathing Water
Flow rate in receiving waters:	Not applicable $m^3.sec^{-1}$ Dry Weather Flow Not applicable $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume emitted – **Not available**			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3	Period of emission (avg)	_____min/hr _____hr/day _____day/yr

Attachment D.2

Tabular Data on Discharge Points

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING	VERIFIED
SW01Yghl Proposed	Primary	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive; SPA	210852	78125	No
SW01Yghl Existing	Stormwater Overflow	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive; SPA	210513	78480	No
SW02Yghl	Emergency Overflow	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive	210996	77419	No
SW03Yghl	Decommissioned	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive, SPA	210128	80410	No
SW04Yghl	Emergency Overflow	Cork County Council	Coastal	Youghal Bay	Bathing Water	209253	76191	No
SW05Yghl	Stormwater Overflow	Cork County Council	Coastal	Youghal Bay	Bathing Water	210517	76042	No
SW06Yghl	Stormwater Overflow	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive	210956	77177	No
SW07Yghl	Emergency Overflow	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive, SPA	210262	78412	No
SW08Yghl	Emergency Overflow	Cork County Council	Transitional	Lower Blackwater Estuary	Nutrient Sensitive, SPA	209723	79912	No
SW09Yghl	Decommissioned	Cork County Council	Coastal	Youghal Bay	Bathing Water	209244	76218	No
SW10Yghl	Decommissioned	Cork County Council	Coastal	Youghal Bay	Bathing Water	209405	76152	No

ANNEX D

REVISED ATTACHMENT E4

Youghal WWTP Waste Water Discharge Application D0139-01

Environmental Quality Standards			Sampling Results			
Physico-chemical conditions	**Transitional Water Body**		**Dunn's Park - Primary Discharge**	**Paxes Lane - Secondary Discharge**	**Foxhole - Secondary Discharge**	**Blackwater Estuary 2009**
Oxygenation conditions Table 9	**Transitional Water Body**		mean analytical result*	mean analytical result	mean analytical result	mean analytical result**
Biochemical Oxygen Demand BOD (mg/l)	4.0 mg/l		423 mg/l	212.7	1.5	1.25 mg/l
Acidification Status Table 9						
pH (individual values)	No limit		7.1	7.5	6.1	
Specific Pollutants table 10	**Other surface water bodies AA-EQS (g/l)**	**Other surface water bodies MAC EQS (g/l)**				
Arsenic	20	-	9 mg/l	2mg/l	<0.96 µg/l	
Chromium VI	0.6	32	0.091 mg/l	0.0137mg/l	<0.02 mg/l	
Copper	5	32	0.041 mg/l	0.047 mg/l	<0.02 mg/l	
Cyanide	10	-	<5.0 mg/l	<5.0 mg/l	5 µg/l	
Flouride	1500	-	560 µg/l	380 µg/l	130 µg/l	
Phenol	8	46	<1.0 µg/l	<0.1 µg/l	<0.1 µg/l	
Toluene	10	-	<1.0 µg/l	<1.0 µg/l	<1.0 µg/l	
Xylenes	10	-	<1.0 µg/l	<1.0 µg/l	<1.0 µg/l	
hardness)	40		0.109 mg/l	0.043 mg/l	0.11 µg/l	
Priority Substances Table 11	**Other surface water bodies AA-EQS (g/l)**	**Other surface water bodies MAC EQS (g/l)**				
Atrazine	0.6	2	<0.01 µg/l	<0.01 µg/l	<0.01 µg/l	
Dichloromethane	20	n/a	<1.0 µg/l	<1.0 µg/l	<1.0µg/l	
Lead and its compounds	7.2	n/a	0.054 mg/l	<0.03 mg/l	<0.02 µg/l	
Nickel & its compounds	20	n/a	<0.02 mg/l	<0.02 mg/l	<0.02 µg/l	
Priority Hazardous Substances Table 12	**Other surface water bodies AA-EQS**	**Other surface water bodies MAC EQS**				
Cadmium and its compounds	0.2	0.45 (class 1)	<0.02 mg/l	<0.02 mg/l	<0.02 µg/l	
Mercury and its compounds	0.05	0.07	<0.2 mg/l	0.5 mg/l	<0.6 µg/l	

* Mean of analytical results contained in appendix E4

** Mean of sampling results taken by EPA in 2009 at the following locations:

BR210	51° 59' 1.450" N	7° 51' 54.249" W	Ardsallagh House / Youghal Bridge
BR220	51° 57' 58.376" N	7° 50' 47.395" W	d/s Old Bridge / Youghal Landfill
BR230	51° 56' 53.646" N	7° 50' 30.286" W	Coastguard

Revised Attachment E Table E4 Youghal Data Set D0139-01

Location	SW01 Green Quay Dunnes Car Park				Tides Car Park				Foxehole					Paxes Lane				
Sample Date	03/04/2008	10/07/2008	17/07/2008		03/04/2008	10/07/2008	17/07/2008		03/04/2008	10/07/2008	17/07/2008			04/03/2008	10/07/2008	17/07/2008		
Sample	Outfall	Outfall	Outfall	Average		TANK	TANK	Average	Outfall	Outfall	Outfall	Average		Outfall	Outfall	Outfall	Average	
Sample Code	GS276	GS650	GS692			GS648	GS694		GS275	GS649	GS691			GS277	GS651	GS693		
Flow M^3/Day	*	*	*	*	*		*		*	*	*	*		*	*	*	*	
pH	*	*	7.1	7.1	*		7.3	7.3	*	*	6.1	6.1		*	*	7.5	7.5	
Temperature °C	*	*	*	*	*		*		*	*	*	*		*	*	*	*	
Cond 20°C	4160	16400	3500	8020	2850	765	765	1460	2850	3280	1974	2701.333		781	1389	985	1051.667	
SS mg/L	*	299	443	371	9	78	111	66	9	12	26	15.66667		174	122	142	146	
NH_{3-N} mg/L	22.1	23	25.9	23.66667	13.5	50.3	30.7	31.5	13.5	23.8	44.8	27.36667		17.3	29.8	34	27.03333	
BOD mg/L	636	154	478	422.6667	1.5	135	206	114.1667	1.5	*	<1.0	1.5		132	360	146	212.6667	
COD mg/L	1091	*	996	1043.5	441	265	460	388.6667	441	448	492	460.3333		326	312	380	339.3333	
TN mg/L	49	47	55	50.33333	31	37	33	33.66667	31	*	52	41.5		*	31	55	43	
Nitrite mg/L	*	*	0.0071	0.0071	*		0.0364	*	*	*	0.025	0.025		*	*	0.007	0.007	
Nitrate mg/L	*	*	<0.4	<0.4	*		0.357	*	*	*	4.17	4.17		*	*	1.35	1.35	
TP mg/L	8.48	6.63	8.85	7.986667	*	6.05	8.23	7.14	0.89	0.32	<0.2	0.605		*	5.45	5.35	5.4	
O-PO4-P mg/L	3.78	3.72	3.55	3.683333	0.58	4.61	4.23	3.14	0.58	<0.05	0.05	0.315		2.18	3.88	4.54	3.533333	
SO4 mg/L	221.4	*	183.8	202.6	606.8	*	49.6	328.2	606.8	*	472	539.4		50	*	53.2	51.6	
Phenols µg/L	*	*	<1.0	<1.0	*	*	<0.1	<0.1	*	*	<0.1	<0.1		*	*	<0.1	<0.1	
Atrazine µg/L	*	*	<0.01	<0.01	*	*	<0.01	<0.01	*	*	<0.01	<0.01		*	*	<0.01	<0.01	
Dichloromethane	*	*	<1.0	<1.0	*	*	<1	<1	*	*	<1.0	<1.0		*	*	<1.0	<1.0	
Simazine µg/L	*	*	<0.01	<0.01	*	*	<0.01	<0.01	*	*	<0.01	<0.01		*	*	<0.01	<0.01	
Toluene µg/L	*	*	<1.0	<1.0	*	*	<1	<1	*	*	<1.0	<1.0		*	*	<1.0	<1.0	
Tributyltin µg/L	*	*	<0.02**	<0.02	*	*	<0.02**	<0.02	*	*	<0.02**	<0.02		*	*	<0.02**	<0.02	
Xylenes µg/L	*	*	<1.0	<1.0	*	*	<1	<1	*	*	<1.0	<1.0		*	*	<1.0	<1.0	
Arsenic µg/L	*	*	9	9	*	*	1	1	*	*	<0.96	<0.96		*	*	2	2	
Chromium ug/L	*	<20	43	43	*	<20	<20	*	<20	<20	<20	<20		*	10	13.7	11.85	
Copper ug/L	*	32	50	41	*	<20	25	*	<20	<20	<20	<20		*	43	51.3	47.15	
Cyanide µg/L	*	*	<5.0	<5.0	*	*	<5	<5	*	*	5	5		*	*	<5.0	<5.0	
Fluoride µg/L	*	*	560	560	*	*	400	*	*	*	130	130		*	*	380	380	
Lead ug/L	*	22.5*	17.5*	20	*	<20	<20	*	<20	<20	<20	<20		*	<20	<30	<25	
Nickel ug/L	*	<20	<20	<20	*	<20	<20	*	<20	<20	<20	<20		*	<20	<5	<12.5	
Zinc ug/L	*	56	134	95	*	<20	59	*	55	166	98	106.3333		*	42	37.3	39.65	
Boron ug/L	*	726	368	547	*	<20	97	*	10	60	58	42.66667		*	84	10	47	
Cadmium ug/L	*	<20	<20	<20	*	<20	<20	*	<20	<20	<20	<20		*	<20	<1	<20	
Mercury µg/L	*	*	<0.2	<0.2	*	*	0.3	0.3	*	*	0.6	0.6		*	*	0.5	0.5	
Selenium µg/L	*	*	34	34	*	*	2	2	*	*	1	1		*	*	5	5	
Barium ug/L	*	24	33	28.5	*	<20	34	*	<20	<20	<20	<20		*	27	41	34	

**TBT SAMPLES COLLECTED ON 31/07/2008

half LOD for statistical purposes

saline interference

*result not confirmed at second analytical wavelength

Cadmium ug/L	actual results below LOD	<1ug/l	1ug/l
Nickel ug/L	actual results below LOD	5.0ug/l	4.6ug/l

ANNEX E

REVISED APPROPRIATE ASSESSMENT REPORT

ATKINS





Cork County Council

Youghal Main Drainage

Appropriate Assessment under Article 6(3) of the 'Habitats Directive'

March 2011

Plan Design Enable

ATKINS

Youghal Main Drainage

Appropriate Assessment under Article 6(3) of the 'Habitats Directive'

29th March 2011

Notice

This report was produced by Atkins for Cork County Council for the specific purpose of an Appropriate Assessment for the Youghal Main Drainage Project.

This report may not be used by any person other than Cork County Council without Cork County Council's express permission. In any event, Atkins accepts no liability for any costs, liabilities or losses arising as a result of the use of or reliance upon the contents of this report by any person other than Cork County Council.

Document History

JOB NUMBER: 2794			DOCUMENT REF: 2794-DG56- Youghal WWDL AA.doc			
0	Final	ED, TO'D & P.O'D	GS	POD	AF	29/03/11
Revision	Purpose Description	Originated	Checked	Reviewed	Authorised	Date

Contents

Section Page

List of Tables

List of Figures

Appendices

1. Introduction and Methods

Introduction

1.1 Youghal Town Council has successfully applied for planning approval for the construction of a wastewater treatment plant and associated pipe network on the Mudlands, north of Youghal, Co. Cork. Atkins is currently acting on behalf of the Local Authority to procure its construction as a Design Build Operate & Maintain (DBOM) project. As part of this project, Atkins is currently completing a wastewater discharge licence application to the Environmental Protection Agency (EPA). An *Ecological Report and Article 6 Appropriate Assessment Screening Report* (2794DG22; Atkins, 2009) was submitted in support of the wastewater discharge licence application.

1.2 In February 2011, the EPA issued a request for further information with respect to the wastewater discharge license application. Item 9 in the EPA letter is concerned with Appropriate Assessment of impacts to Natura 2000 sites: -

> *With regard to the additional information submitted in relation to the* Ecological Report & 'Article 6' Appropriate Assessment Screening Report*, demonstrate how the Department of the Environment, Heritage and Local Government circular L8/08 dealing with Appropriate Assessments has been addressed in relation to the discharge to surface water. Submit the results of the L8/08 screening, detailing the response to each question. If the result of the screening is to 'Assess Impacts' submit the relevant updated information.*

1.3 This report addresses the above request for information. Specifically, this report assesses whether significant impacts are likely on Natura 2000 sites as a result of treated waste water discharges from the Youghal wastewater treatment plant, in particular the Blackwater River candidate Special Area of Conservation (cSAC) and the River Blackwater Estuary Special Protection Area (SPA).

1.4 Special Areas of Conservation (SACs) and Special Protection Areas for birds (SPAs) are sites that form part of a network, known as Natura 2000 sites, designated across Europe in order to protect biodiversity within the EU. SACs are designated under the EU Habitats Directive (92/43/EEC and as amended), as transcribed into Irish law by the European Communities (Natural Habitats) Regulations, 1997, while SPAs are designated under the EU Birds Directive (79/4089/EEC and amendments as consolidated in 2009/47/EC).

1.5 Article 6(3) of the EU Habitats Directive states that: "Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives." Such an assessment is known as an Appropriate Assessment (AA).

Methodology

1.6 The Appropriate Assessment process begins with Stage 1 - Screening to determine if a plan or project is likely to have an impact on a Natura 2000 site. If impacts are likely or uncertain, Stage 2 – Appropriate Assessment is required. Methodology used to complete this Appropriate Assessment process follows best practice guidance, including: -

- 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.

- European Commission (2007). Guidance document on Article 6(4) of the 'Habitats Directive' 92/49/EEC; clarification of the concepts of: Alternative solutions, Imperative reasons of overriding public interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.

- Environmental Protection Agency (2009). Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007(S.I. No. 684 of 2007).

- Department of the Environment Heritage and Local Government (2008). Circular L8/08 Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments.

- Department of the Environmental Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities.

1.7 Locations and boundaries of all Natura 2000 sites within the immediate environs of the proposed development were identified using the National Parks and Wildlife Service (NPWS) online map viewer (www.npws.ie). Boundary *shapefiles* were also downloaded from this site. NPWS were contacted to obtain information on conservation objectives, conditions and threats to the Natura 2000 sites. Natura 2000 site synopses prepared by NPWS were also reviewed.

1.8 Additional information is available from previous studies, including an Environmental Impact Statement, including a full Ecological Impact Assessment (EcIA), which was published in 2001. This included consideration of terrestrial and marine ecology. A habitat / botanical survey of the site was undertaken by *Roger Goodwillie & Associates* in April 2001; this included some consideration of fauna, including terrestrial mammals and birds. A marine ecology assessment of the coastal areas adjacent to Youghal was undertaken by *Ecological Consultancy Services Ltd. (EcoServe)* in May 2001. Whilst predating Irish guidance on Appropriate Assessment noted above, the EIS did consider the potential for negative impacts on adjoining Natura 2000 sites. Best practice guidance at the time stated that "*Where an assessment for the purposes of Article 6(3) takes the form of an assessment under Directive 85/337/EEC* (i.e. the EIS Directive)*, this will provide obvious assurances in terms of records and transparency".*

1.9 Further surveys were completed in 2009, including a full Ecological Report and an AA screening report (Natura Impact Screening Statement) (Atkins, 2009). This document was prepared prior to the publication by the DoEHLG in 2009 of *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities*. The Appropriate Assessment did, however, assess the impacts of the project against the conservation objectives of the nearby Natura 2000 sites, i.e. the Blackwater River cSAC and the Blackwater Estuary SPA and to ascertain whether it would adversely affect the integrity of those designated sites. The March 2011 document was compiled in order to present the original assessment in a format and structure compatible with guidance published by the EPA and DoEHLG; as noted these were published following preparation of the original AA by Atkins in 2009 (Atkins, 2009).

2. Screening

2.1 The AA presented below follows the EPA's (2009) *Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007)* and DEHLG's circular L8/08. AA is completed over two stages: Screening and Appropriate Assessment: -

- Stage 1 – Screening
  - Step 1 – Management of the Site
  - Step 2 – Description of Plan or Project
  - Step 3 – Characteristics of Site
  - Step 4 – Assessment of Significance
- Stage 2 – Appropriate Assessment
  - Step 1 – Information Required
  - Step 2 – Impact Prediction
  - Step 3 – Conservation Objectives
  - Step 4 – Mitigation Measures

Step 1 – Management of the Site

2.2 The project is not directly connected with or necessary to the management of a Natura 2000 site.

Step 2 – Description of Plan or Project

2.3 Following an appraisal of a number of sites in the vicinity of Youghal, the Mudlands area to the north of the town was selected as the most suitable site for the location of the proposed WWTP for the town with a discharge of the final treated effluent to the estuary (Atkins McCarthy, 2001). The WWTP will be procured using a Design Build Operate & Maintain contract. Thus all design proposals herein are subject to confirmation at detailed design stage. However, the proposed development comprises the following elements: -

- Site on the Youghal Mudlands for the proposed waste water treatment plant to be located in the western side of Field R3 as shown in Figure 3.1 of the 2009 the ecology assessment (Atkins, 2009) and reproduced here as Figure 2.2.
- An inflow & outflow pipe with an associated access road servicing the plant will run south from the plant to the public road, along the western side of fields R1 & R2 (see Figures 2.1 and 2.2; reproduced from Atkins, 2009).

2.4 Work on Mudlands is outside but adjacent to the Blackwater River cSAC (site code 2170) and the Blackwater Estuary SPA (site code 4028) (Figures 2.3 and 2.4). The proposed development is located approximately 5 km north of Ballymacoda Bay SPA and Ballymacoda (Clonpriest and Pillmore) cSAC, both of which are located on the western shores of Youghal Bay (Figures 2.3 and

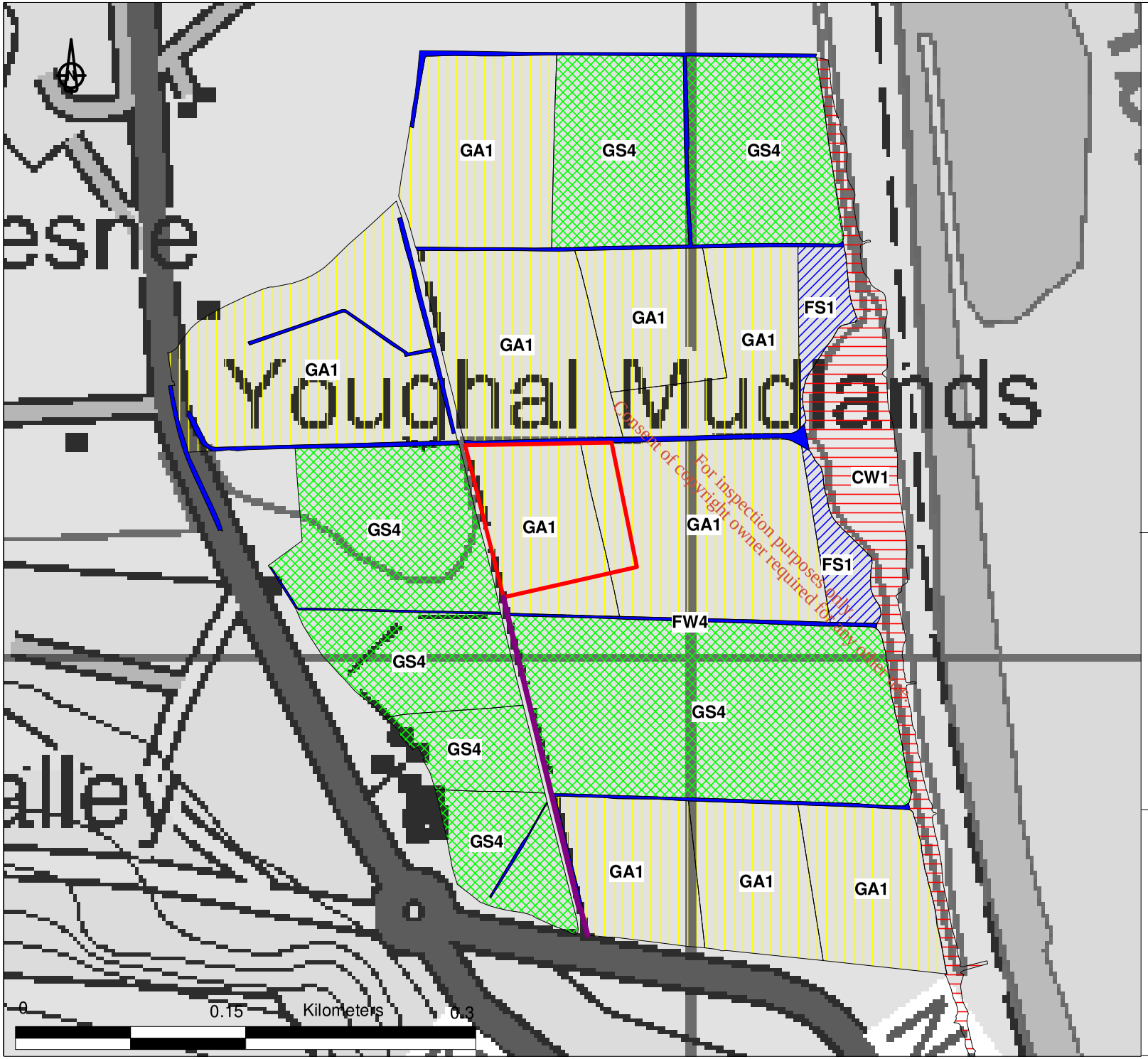
2.4). Note that Ballyvergan Marsh is a proposed Natural Heritage Area (pNHA) proposed for designation under the Wildlife Acts 1976 and 2000 and is therefore not considered under appropriate assessment or this report.

2.5 Proposed discharge from the created wastewater treatment plant would run through the Blackwater River cSAC and Blackwater Estuary SPA close to Ferry Point (exact location / extent to be confirmed at detailed design).

2.6 The Youghal Main Drainage Scheme will see the closure of three no. existing municipal overflows; most will, however, be retained to act as stormwater overflows. Approximately 6 no. private outfalls onto the shoreline will also remain. The proposed development will ensure that sewage will receive primary and secondary treatment as well as nutrient reduction for nitrogen. Provision will be made for phosphorus removal should it be required at a future date if studies indicate that it would be beneficial.

2.7 The proposed outfall will be located approximately 300m offshore and will consist of a 600mm diameter pipe. The outfall location is opposite Ferry Point, Youghal over 1km south of the WWTP site. Further dispersal modelling is underway to inform the selection of the final location of the proposed outfall, and the design of the diffuser. The pipeline will be buried throughout its length.

2.8 The construction period for the entire collection network upgrade works is estimated to be 12-18 months – including the construction of the WWTP and outfall pipeline. Details of the construction programme for individual project elements will not become available until the Design & Build contract has been awarded.



Habitat map following Fossitt (2000)

- CW1 Lagoons and saline lakes
- FS1 Reed and large sedge swamps
- FW4 Drainage ditch
- GA1 Improved agricultural grassland
- GS4 Wet grassland

Site Boundary

Proposed Access Road & Route of Pipeline

Project Name: Youghal Main Drainage

Project Number: 2794

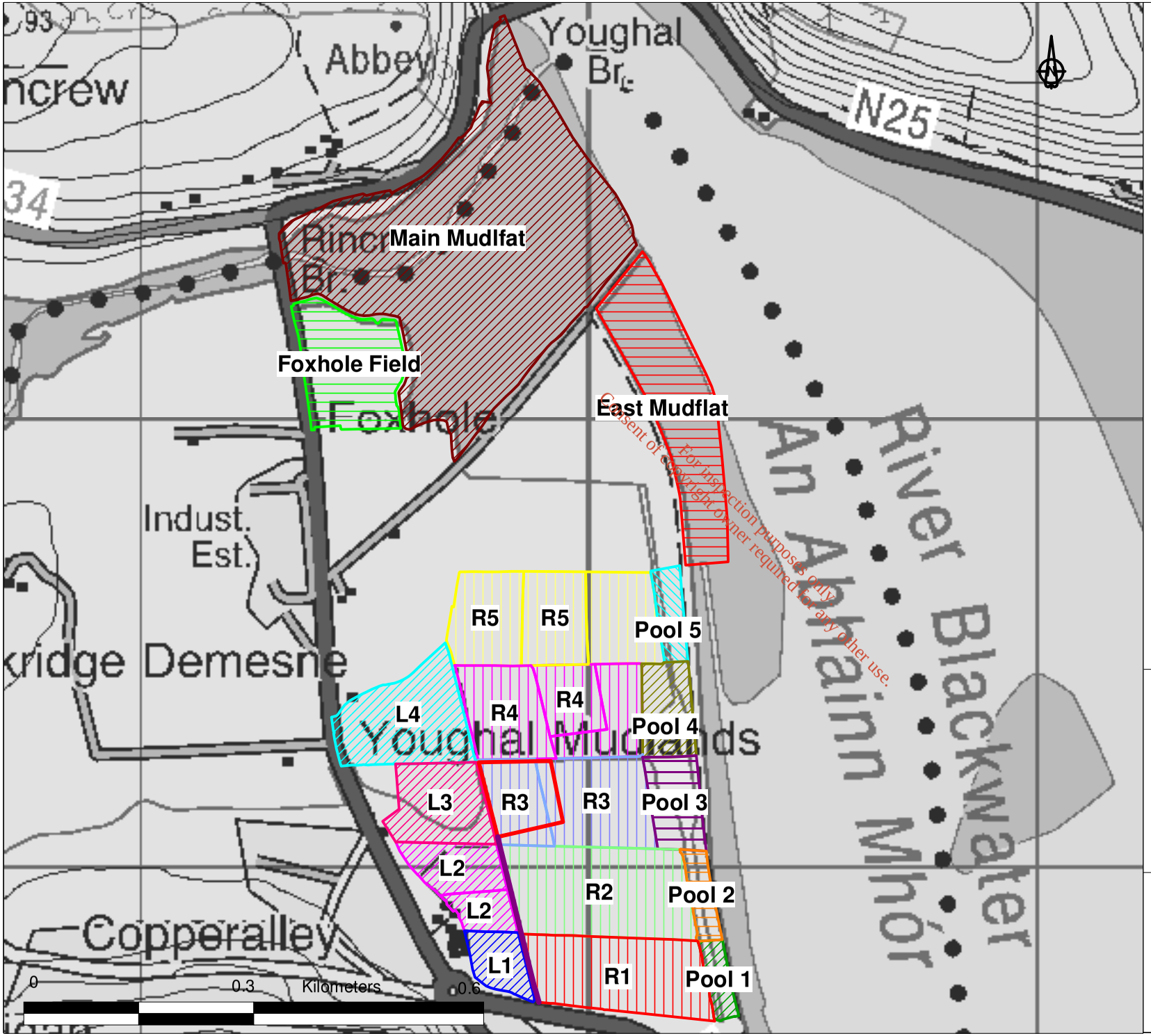
Figure No: 2.1
Title: Habitat Map

Issue Number: 1
Date: 29.03.2011

ATKINS

150-155 Airside Business Park,
Swords, Co. Dublin
Tel: 353 1 890 9000 Fax : 353 1 890 9001

Unit 2B, Cork Airport Business Park, Cork.
Tel: 353 21 4290300 Fax: 353 21 4290360



Bird Study count by field numbers

- East Mudflat
- Foxhole Field
- L1
- L2
- L3
- L4
- Main Mudlfat
- Pool 1
- Pool 2
- Pool 3
- Pool 4
- Pool 5
- R1
- R2
- R3
- R4
- R5
- Site Boundary
- Proposed Access Road & Route of Pipeline

Project Name: Youghal Main Drainage

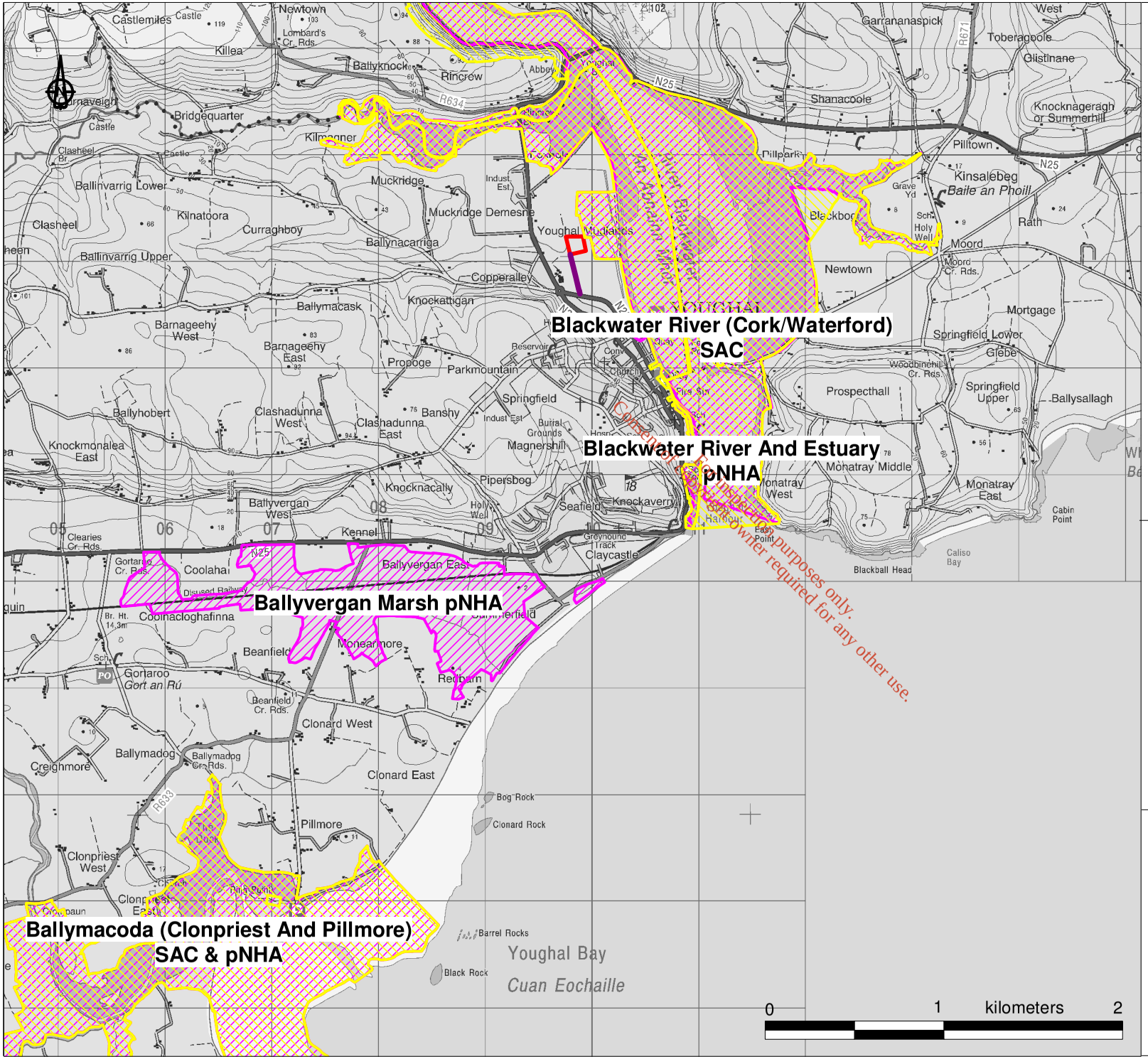
Project Number: 2794

Figure No: 2.2
Title: Bird Study

Issue Number: 1
Date: 29.03.2011

ATKINS
150-155 Airside Business Park,
Swords, Co. Dublin
Tel: 353 1 890 9000 Fax : 353 1 890 9001

Unit 2B, Cork Airport Business Park, Cork.
Tel: 353 21 4290300 Fax: 353 21 4290360



Legend

- Special Area of Conservation (SAC)
- Proposed National Heritage Area (pNHA)
- Site Boundary
- Proposed Access Road & Route of Pipeline

Project Name: Youghal Main Drainage

Project Number: 2794

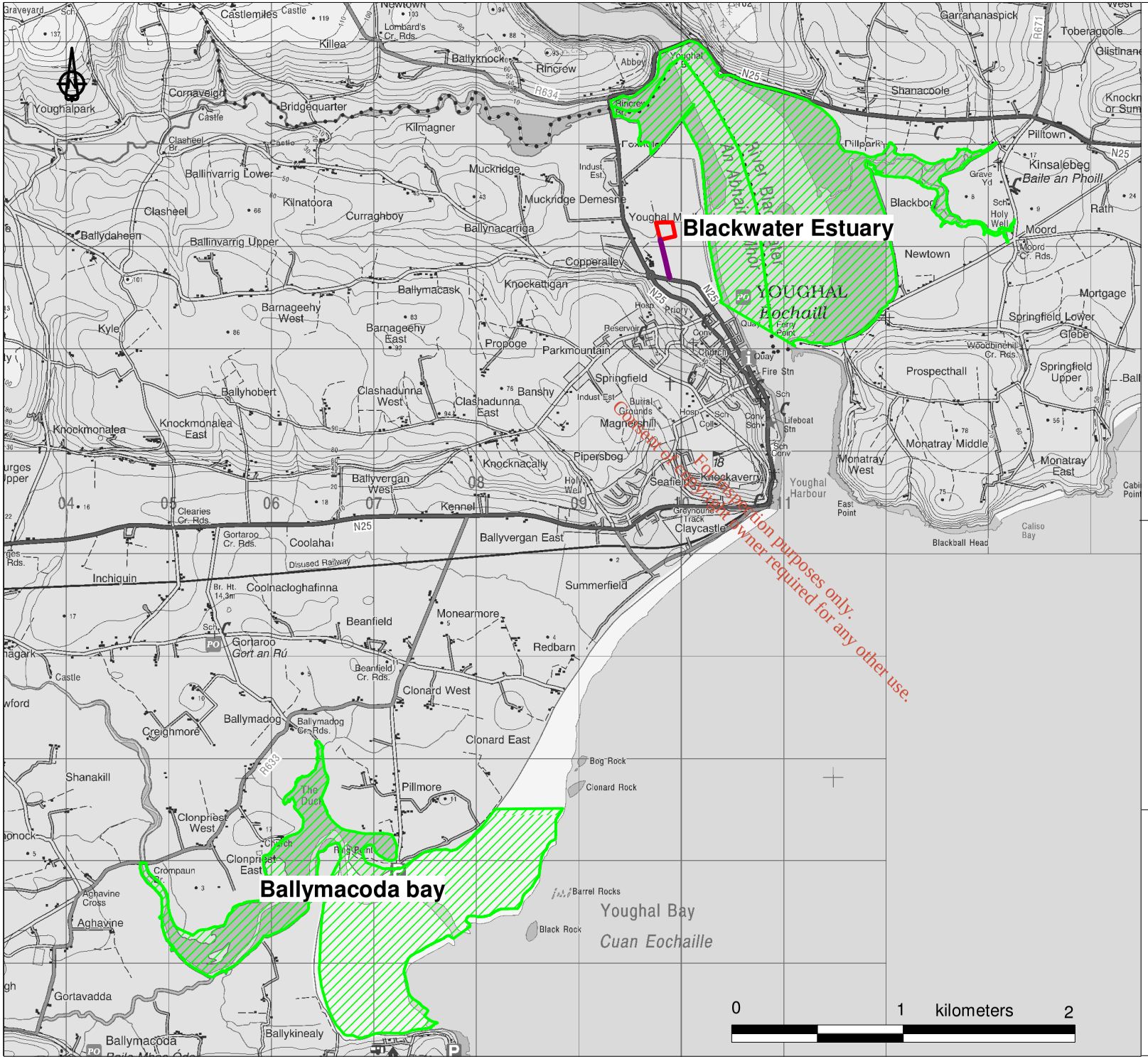
Figure No: 2.3
Title: Special Areas of Conservation & Natural Heritage Areas

Issue Number: 1
Date: 29.03.2011

ATKINS

150-155 Airside Business Park,
Swords, Co. Dublin
Tel: 353 1 890 9000 Fax : 353 1 890 9001

Unit 2B, Cork Airport Business Park, Cork.
Tel: 353 21 4290300 Fax: 353 21 4290360



Legend

- Special Protection Area for Birds (SPA)
- Site Boundary
- Proposed Access Road & Route of Pipeline

Project Name: Youghal Main Drainage

Project Number: 2794

Figure No: 2.4
Title: Special Protection Areas for Birds

Issue Number: 1
Date: 29.03.2011

ATKINS

150-155 Airside Business Park,
Swords, Co. Dublin
Tel: 353 1 890 9000 Fax : 353 1 890 9001

Unit 2B, Cork Airport Business Park, Cork.
Tel: 353 21 4290300 Fax: 353 21 4290360

Step 3 – Characteristics of the Site

2.9 The proposed development of a waste water treatment plant (WWTP) and associated network at the Mudlands, north of Youghal is not located within a site designated as being of conservation importance; however it does adjoin a section of the Blackwater River cSAC and Blackwater Estuary SPA, which in this location is characterised as rush-dominated improved agricultural grassland (GA1) (Figures 2.3 and 2.4). As noted above, the proposed outflow from the WWTP will be located opposite Ferry Point, Youghal, within the Blackwater River cSAC and the Blackwater Estuary SPA. Both these designations form part of the Natura 2000 network. Site synopses are reproduced in Appendix A.

2.10 The Blackwater River cSAC is of considerable conservation significance and is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. The peaty nature of the upper reaches of the river and some of its tributaries give the water a pronounced dark colour. The mouth of the river occurs at Youghal Harbour, where the river empties into the Atlantic Ocean. The site synopsis is reproduced in Appendix A.2.

2.11 The Blackwater Estuary SPA is of high ornithological importance for wintering waterfowl and provides good quality feeding areas for an excellent diversity of waterfowl species. The site supports an internationally important population of Black-tailed Godwit (634), and has a further seven species with nationally important population of Wigeon (834), Golden Plover (3,098), Lapwing (3988), Dunlin (1,430), Curlew (1,041), Redshank (489) and Greenshank (25) (Crowe, 2005; 5 year average counts from 1994/95 to 2000/01). A population of Bar-tailed Godwit (peak count of 286) has also on occasion exceeded the threshold for national importance. This site has been well studied, with detailed monthly counts extending back to 1974. Boland *et al*. (2008) report a summed annual maxima of each species (excluding gulls and terns) of 7,739 birds counted during I-WeBS bird counts within the Blackwater Estuary. Totals are derived from across all months September – March inclusive in each year (Boland *et al*., 2008). Under IWeBS the Blackwater Estuary site includes the Tourig Estuary. The site synopsis is reproduced in Appendix A.1.

2.12 The bird species found at the Youghal Mudlands during a site visit in April 2001 as part of the original EIS are shown in Table 3.1 of Atkins (2009). In order to provide a thorough analysis on the importance of Youghal Mudlands to birds and to assess the impact of the proposed development on the Blackwater Estuary SPA, a targeted bird survey was carried out. Bird counts were carried out in both January (15th & 16th) and March (2nd & 3rd) of 2009. These counts were carried out by Mr. Pat Smiddy to a standard agreed with Dr. O'Donoghue, Ornithologist and Principal Ecologist with Atkins (Ecology) Ireland. This included consideration of the Mudlands (including wetland birds, land birds and use of pools), adjoining mudflats and the Foxhole field. Counts were also undertaken at the Tourig Estuary for completeness.

2.13 The bird survey was designed in such a way as to evaluate usage of the site across the full tidal cycle in order to determine whether birds might be moving in and out of the Mudlands from elsewhere within the SPA. Consideration was given to the species, number and conservation status of birds observed. By targeting different tidal heights in January and March the survey also attempted to determine whether patterns of site use would alter depending on how much of the saltmarsh in the Tourig Estuary was exposed (as roosting areas) during high tide. Furthermore consideration was also given to use of the Foxhole (to the north), adjoining mudflats in the Blackwater Estuary and the pools inside the seawall. In this way the relationship between the Mudlands and the adjoining Blackwater Estuary SPA could be examined in full.

2.14 The data indicate that Fields R3 and R4 host the greatest diversity and number of birds; key species include Lapwing and Black-tailed Godwit, with maximum counts of 950 and 360, respectively. The national threshold for Lapwing is 2,100, while that of Black-tailed Godwit is 140 (Boland and Crowe, 2007). The 5-year average for Black-tailed Godwit in the Blackwater Estuary / Tourig Estuary is 634 (1996-2000) (Crowe, 2005). These birds were generally recorded close to high tide and concentrated very close to the pools along the sea wall away from the area proposed for development. No land birds of conservation concern were noted within the study area.

2.15 At high tide the birds roost along the shoreline and salt marsh fringe, especially in the Kinsalebeg area. A low-lying field at Blackbog, east of the Mudlands across the Blackwater River, is a favoured roost. These should however be sufficiently distant from proposed works to prevent negative impacts through disturbance.

2.16 As noted above, the proposed development is located approximately 5 km north of Ballymacoda Bay SPA and Ballymacoda (Clonpriest and Pillmore) cSAC, both of which are located on the western shores of Youghal Bay. The proposed development will not pose any impacts either direct or indirect on the latter two designated sites as surface water impacts are highly unlikely to be transmitted 5 km across the bay.

Step 4 – Assessment of Significance

2.17 According to the EPA (2009) guidelines, the assessment of the likelihood of significant effects of a proposed or existing wastewater discharge project on a European Site should be completed by referring to the department of the Environment Circular L8/08 '*Water Services Investment and Rural Water Programmes –Protection of Natural Heritage and National Monuments*').

2.18 Figure 2.5 displays the flow diagram from Circular L8/08. If the conclusion of the below process is to "ASSESS IMPACTS", then an Appropriate Assessment must be completed. Table 2.1 outlines the workings of the flow chart in Figure 2.5.

Figure 2.5 - Flow chart for screening water services infrastructure projects (Source: DoELHG, 2008).

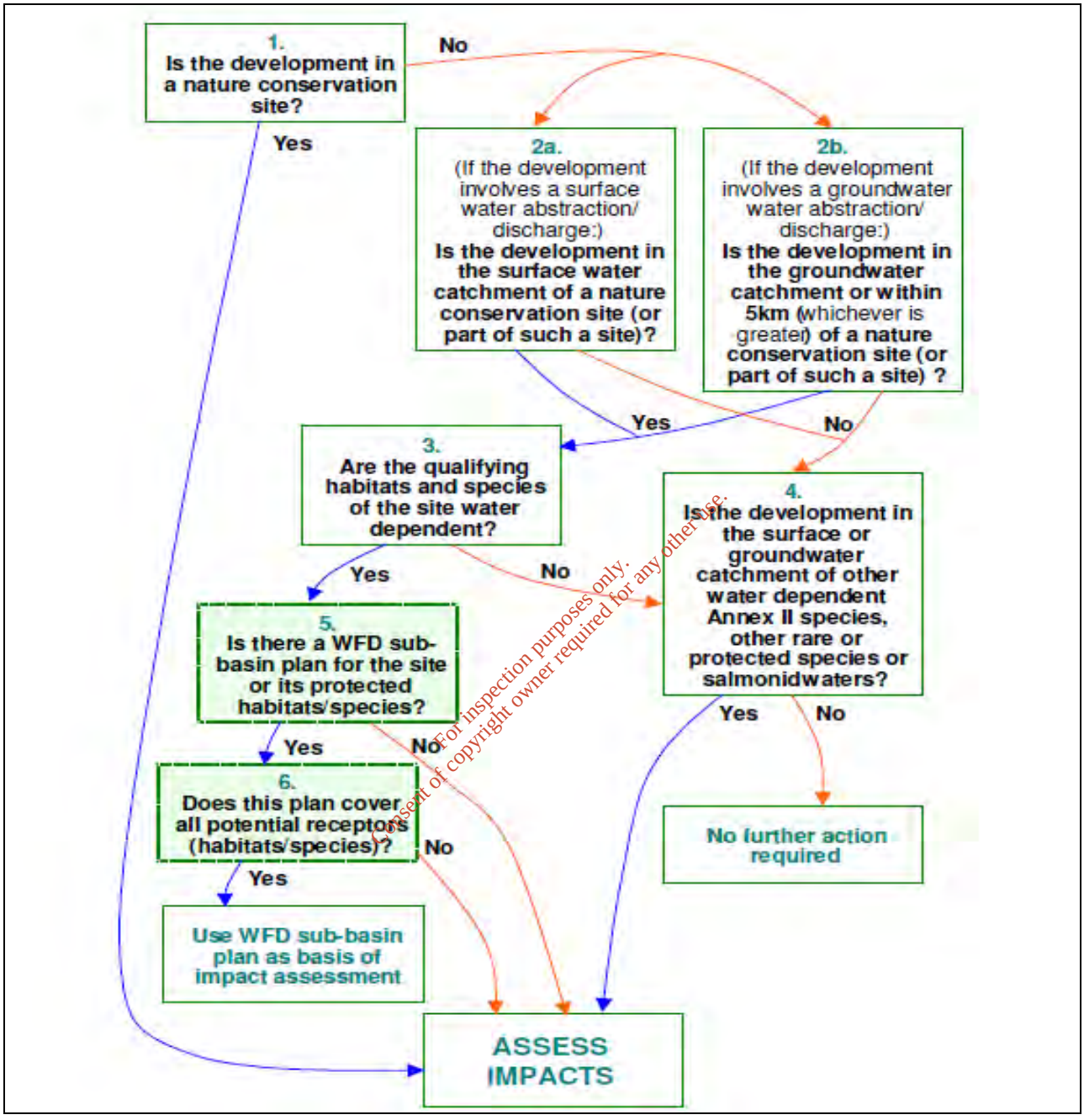


Table 2.1 – Flow chart stages for Youghal Main Drainage Scheme.

Flow chart stage	Answer
Stage 1 - Is the development in a nature conservation site?	No
Stage 2a - Is the development in the surface water catchment of a nature conservation site (or part of such as site)?	Yes
Stage 3 - Are the qualifying habitats and species of the site water dependent?	Yes
Stage 5 – Is there a WFD Sub-basin plan for the site or its protected species?	Yes[1]
Stage 6 –Does this plan cover all potential receptors?	No
As the answer to Stage 6 was "No" it is now needed to Assess Impacts on the Natura 2000 site(s).	

2.19 Given the fact that the results from the above flow chart have indicated that impacts must be assessed, it is deemed that Stage 2 Appropriate Assessment be completed.

[1] NS2 (2010) F*reshwater Pearl Mussel – Munster Blackwater Sub-Basin Management Plan.* 2nd draft. .

3. Appropriate Assessment

Step 1 - Information Required

3.1 Information regarding the proposed WWTP is outlined in Step 2 of the Screening assessment above (Sections 2.3-2.8). Further information on the nature of the discharges is included in the main wastewater discharge license application.

3.2 Information on Natura 2000 sites was acquired from NPWS, including standard Natura 2000 Data Forms for each site and up-to-date conservation objectives for each site. Further information is available in the original EIS (Atkins McCarthy, 2001) and the Ecological Report (Atkins, 2009). This information is outlined below as required.

Step 2 - Impact Prediction

Land-take/ distance from Natura 2000 site: -

3.3 The land take for the proposed WWTP is not located within a Natura 2000 site (Figures 2.3 and 2.4). Thus, work on the Mudlands will be entirely outside the SAC / SPA boundaries. Habitats within the Mudlands which would be impacted include wet grassland (GS4), dry grassland (GA1, GS2) and hedgerows (WL1) - none of these are comparable to habitats of European importance (Annex I of the EU Habitats Directive), nor are they habitats for which the Natura 2000 sites have been designated. In order to lay the outfall, a pipe will be laid in a buried trench through the Natura 2000 site. A trench will be dug for the pipeline during the construction phase. Once the pipeline is installed, this will be backfilled and it is expected that the habitat will return to its natural state in the short to medium term. Littoral and sublittoral habitats that would be impacted will include up to twenty biotopes, recorded from the littoral survey (Atkins McCarthy, 2001). The majority of these biotopes occurred on the narrow sea wall, vertical harbour walls and bedrock which back the shore along the western coast of the estuary. The wall along the Youghal Mudlands was found to support a range of biotopes. At the site of the proposed outfall (referred to as Option 1 in the original EIS, (Atkins McCarthy, 2001)) the vertical wall was covered by barnacles and limpets (ELR.BPat) with mussels and barnacles (ELR.MytB) in the zone below. The lower shore was dominated by serrated wrack (*Fucus serratus*) with mussels and green algae (*Enteromorpha* sp.) and red algae (*Chondrus crispus* and *Ceramium* sp.) on mixed gravel, boulders and mud (MLR.Myt.FR).

3.4 A total of nine dredges were taken in the Blackwater Estuary. Twenty-four species of higher taxa were recorded. The fauna was dominated by hydroids, polychaetes, crustaceans and molluscs. Opposite Youghal Town and adjacent to the north and centre of the Youghal Mudlands, the substratum was very soft anoxic mud with some sand, organic matter and shell debris. Few macrofauna species were recorded from these sites, although polychaetes, in particular tube worms were characteristic. To the north, south and opposite Ferrypoint the substratum was very coarse shell debris with sand. At the mouth of the harbour the substrata again changed and consisted of cobbles, pebbles and rocks and with a different macro-faunal community, characterised by hydroids, crustaceans and seaweeds.

3.5 None of these habitats are of marine conservation importance. The only Annex I habitat directly impacted by the proposed development that represents a conservation objective of the Blackwater River cSAC is Estuaries (1130) (see Step 3 below). No Mudflats or Sandflats (1140) are expected to be disturbed. As noted above, once the pipeline is installed, this will be backfilled and it is expected that the habitat will return to its natural state in the short to medium term. Furthermore,

the habitats through which the pipe will run do not represent areas of intertidal or sub-tidal habitat of significance for foraging waders / wildfowl for which the Blackwater Estuary SPA for birds has been designated.

Disturbance/excavations:

3.6 The use of the Mudlands and pools adjoining the sea wall by wintering birds is discussed at length in Chapter 3 of the Ecological Report (Atkins, 2009). These include Lapwing and Black-tailed Godwit; conservation objectives of the Blackwater Estuary SPA (see Step 3 below). The bird survey data therefore support the findings of the 2001 EIS with respect to the site. Broadly speaking, development of the plant at the western side of field R3 (and associated access track) should not result in a significant impact on bird species for which the Blackwater Estuary has been designated provided appropriate mitigation measures are put in place and the plant is adequately screened. As timing of works outside the winter months to effectively avoid disturbance of wintering birds is unlikely to be possible, some level of disturbance on wintering birds using the Mudlands is likely during construction of the WWTP. Over the longer term, as noted in the Ecological Report (Atkins, 2009), the Mudlands are not within the Blackwater Estuary SPA nor do they support significant concentrations of waders / wildfowl. The completed site is likely to be visually screened by a flood protection wall or berm (to be finalised at detailed design stage).

3.7 The successful Contractor shall be required to seek the advice of an appropriately qualified ecologist when finalising the timing of works and nature of screening in order to minimise impacts on waders and wildfowl using the site.

Emissions: -

3.8 Currently, sewage is discharged untreated into Youghal Harbour from a number of locations. Following completion of works, effluent will be treated effectively prior to discharge at a single sub-tidal outfall likely to be located opposite Ferry Point. Thus, the proposed WWTP will reduce emissions into the Natura 2000 sites.

3.9 During the course of works best practice will be followed with respect to site works and in particular how surface water runoff from the site is addressed. The successful Contractor will be required to prepare a Construction / Mitigation Method Statement (with input from an appropriately qualified ecologist) to be agreed with Cork County Council and NPWS in order to prevent any negative impacts on adjoining Natura 2000 sites.

Interference with the key relationships that define the structure & function of the site: -

3.10 In the medium term, there will be a reduced level of nutrient enrichment within the estuary as a whole due to more efficient treatment of discharge from Youghal and unrelated water quality improvement as required under the Water Framework Directive in watercourses contributing to the estuary. This may have medium to long term impacts on the carrying capacity of the estuary / SPA for species for which it has been designated. However, any such changes would arise from compliance with a number of EU Directives.

Reduction of habitat area: -

3.11 Temporary habitat loss will occur during the installation of the proposed outfall pipeline. Following back-filling of the trench accommodating the discharge pipe it is envisaged that natural estuarine behaviour is such that areas of disturbed sub-tidal habitat will be rapidly recolonised and revert to natural condition. As noted above none of these habitats are of marine conservation importance.

The only Annex I habitat directly impacted by the proposed development that represents a conservation objective of the Blackwater River cSAC is Estuaries (1130) (see Step 3 below). No Mudflats or Sandflats (1140) are expected to be disturbed. No significant changes to the Conservation objectives of the Natura 2000 site are therefore envisaged in this regard.

3.12 None of the works within the Mudlands are within the Natura 2000 sites.

Disturbance of key species: -

3.13 The proposed WWTP is located in close proximity to the SAC boundary. With the possible exception of otter, no disturbance of the key species for which the SAC was designated is expected. Disturbance of key species within the Natura 2000 site will occur during the installation of the proposed pipeline. This will particularly affect bird species in the area which are typically sensitive to disturbance; though as noted this area does not support significant populations of birds which comprise the conservation objectives of the SPA.

3.14 No significant loss of feeding grounds for avifauna in the vicinity of the pipeline laying works is likely to occur.

3.15 During the installation of the proposed pipeline within the estuary, there will be an increase in turbidity of the water during the construction of the pipeline trench due to release of sediment from the works area. However estuarine environments are typically sedimentary and species living in these environments have adapted to these conditions.

Reduction in species density: -

3.16 Some reduction in avian species density on the Mudlands adjoining the SAC / SPA is likely to occur during the construction phase due to disturbance. If the works are carried out during the summer period when the bird species for which the SPA was designated are absent, then no such disturbance impacts to the conservation objectives of the site will occur. However, we understand that it is unlikely that works can be restricted in such a way.

Cumulative impacts: -

3.17 Planning permission had been previously granted by Youghal Town Council for a marina at Green's Quay located immediately north of the likely outfall from the proposed WWTP. Planning on this has since lapsed but a new grant of planning may be pursued. If construction is carried out simultaneously, cumulative impacts may accrue in the short term as a result of this project in the absence of suitable mitigation. These would be in the form of disturbance to birds, if construction takes place during winter, or estuarine habitats. Such disturbances, however, would be temporary and relatively minor, and therefore not significant. As the proposed WWTP will result in a short to medium term positive impact on the adjacent Natura 2000 sites (due to the removal or upgrading of many outfalls supporting untreated water and the discharge of treatment of effluent into River Blackwater Estuary), this would cancel out any increases in emissions that may arise from the marina.

Step 3 - Conservation Objectives

3.18 The site is designated for a number of habitats and species listed on Annexes I and II, respectively, of the EU Habitats Directive. The conservation objectives of the Blackwater River cSAC, according to NPWS (2011a), are[2]:

- Freshwater pearl mussel (*Margaritifera margaritifera*) (1029);
- White clawed crayfish (*Austropotamobius pallipes*) (1092);
- Sea lamprey (*Petromyzon marinus*) (1095);
- Brook lamprey (*Lampetra planeri*) (1096);
- River lamprey (*Lampetra fluviatilis*) (1099);
- Twaite shad (Alosa fallax) (1103);
- Atlantic Salmon (*Salmo salar*, only in fresh water) (1106);
- Estuaries (1130);
- Mudflats and sandflats not covered by seawater at low tide (1140);
- Perennial vegetation of stony banks (1220);
- Salicornia and other annuals colonizing mud and sand (1310);
- Atlantic salt meadows (Glauco-Puccinellietalia maritimae) (1330);
- Otter *Lutra lutra* (1355);
- Mediterranean salt meadows (Juncetalia maritimi) (1410);
- Killarney fern (*Trichomanes speciosum*) (1421);
- Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation (3260);
- Old sessile oak woods with Ilex and *Blechnum* in the British Isles (91A0);
- * Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) (91E0);
- * *Taxus baccata* woods of the British Isles (91J0).

3.19 The site is designated for a number of wintering waterfowl and wader species listed on Annex I of the EU Birds Directive. The conservation objectives of the Blackwater Estuary SPA, according to NPWS (2011b), are:

- Wigeon (*Anas penelope*);

[2] Priority habitats are indicated with an asterisk (*).

- Golden plover (*Pluvialis apricaria*);
- Lapwing (*Vanellus vanellus*);
- Dunlin (*Calidris alpina*);
- Black-tailed Godwit (*Limosa limosa*);
- Bar-tailed Godwit (*Limosa lapponica*);
- Curlew (*Numenius arquata*);
- Redshank (*Tringa totanus*)

Step 4 -Mitigation Measures

Habitat Loss

3.20 The footprint of the proposed wastewater treatment plant will be fenced off during the pre-construction period. This will negate the possibility of needless disturbance and loss to habitats outside of the proposed construction area.

Water Quality

3.21 Best practice will be employed to ensure that no pollution impacts arise during the construction phase of the proposed development. The biggest threats of the proposed development potentially reside during the construction phase where sediments and hydrocarbons may be liberated, in particular in connection with soil excavation and storage in addition to sand and gravel storage. In order to ensure that no sediments or pollutants such a silt or hydrocarbons generated on site are transported to the nearby Natura 2000 sites, the successful contractor will be required to prepare a working Method Statement to outline how such impacts will be mitigated in line with industry best practice. Mitigation measures to be implemented to deal with the construction phase impacts and to alleviate any threats to the adjacent Natura 2000 sites should include the following. However, as noted in paragraph 3.23 the successful contractor will be required to prepare Construction Method Statement in agreement with Cork County Council, National Parks & Wildlife Service and Inland Fisheries Ireland. This shall prepare a full schedule of mitigation to minimise negative impacts.

- There is the potential for the mobilisation of suspended solids or particulate matter such as sand and silt following prolonged or heavy rainfalls. As a result, under no circumstances should works such as soil excavation, soil depositing or soil stripping be conducted during or immediately following periods of heavy or prolonged rainfall.
- Stockpile areas of sand, gravel and clay will be only be stored near the eastern and southern sections of the site on gently sloping ground. All stockpile areas of sand, gravels and soils will be covered during heavy rainfall periods in order to prohibit the mobilisation of sediment into the estuarine area.
- Works with concrete must be done during dry conditions for a period sufficient to cure the concrete (at least 48 hours). Concrete pours will occur in contained areas. Washing out of concrete trucks will not be permitted on or near the site.
- Fuels will be stored in bunded areas throughout the construction period. Refuelling will only be carried out within pre-determined hardstanding areas where all fuels will remain bunded.

Avifauna

3.22 It is our understanding that it will not be possible to complete construction phase works during the summer months (i.e. between April 1st and October 31st) to avoid disturbance impacts on over-wintering birds that may be using the nearby areas of the cSAC and the SPA. However, in designing the programme of works, every effort shall be made to maximise works during the summer months and to use this time to erect suitable screening to minimise disturbance from winter works. Programming works during the drier summer months would also help with control of surface water run-off to adjoining Natura 2000 sites.

Construction Method Statement

3.23 A Construction Method Statement will be drawn up by a suitably qualified ecologist and agreed by with the site contractor prior to the initiation of construction works. This will outline detailed mitigation measures and protocols to be carried out over the duration of the construction period. The above mentioned Method Statement will be prepared in agreement with Cork County Council, National Parks & Wildlife Service and Inland Fisheries Ireland.

Conclusions

3.24 It is not envisaged that there would be any significant negative impacts on Natura 2000 sites arising from the proposed works. While the full effects of the reduction in nutrient loading in Youghal Harbour are difficult to quantify, it is considered that this will have a positive impact on water quality within the estuary in the long term. The lands proposed for development do not host significant number of birds for which the SPA has been designated and adoption of best practice on site will help to minimise disturbance of birds using surrounding areas.

3.25 It is not envisaged that there would be any significant negative impacts on Natura 2000 sites arising from the proposed works, when the above mitigation measures are implemented. These include the requirement for the successful Contractor to prepare a Method Statement, with the assistance of an appropriately qualified ecologist and following consultation with Cork County Council, National Parks & Wildlife Service and Inland Fisheries Ireland to outline the nature of proposed works and appropriate mitigation measures to avoid impacts on Natura 2000 sites, such as impacts on water quality or disturbance of protected birds and other animals.

4. References

Atkins McCarthy (2001) *Youghal Main Drainage Scheme – Environmental Impact Statement*. EIS prepared for Cork County Council.

Atkins (2009) *Ecological Report and 'Article 6' Appropriate Assessment Screening Report*. 2794DG22. Report prepared for Cork County Council.

Boland. H. and Crowe, O. (2007). Irish Wetland Bird Survey: Results of waterbird monitoring in Ireland in 2005/06. *Irish Birds* 8, 167-178.

Boland, H., O. Crowe and A. Walsh. 2008. Irish Wetland Bird Survey: Results of waterbird monitoring in Ireland in 2006/07. *Irish Birds* 8, 341-350.

Crowe, O. (2005). *Ireland's Wetlands and their Waterbirds: Status and Distribution*. BirdWatch Ireland, Newcastle, Co. Wicklow.

Department of the Environment Heritage and Local Government (2008) Circular L8/08 Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments. DEHLG, Dublin.

Department of the Environmental Heritage and Local Government (2009). *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities*. DEHLG, Dublin.

Environmental Protection Agency (2009) Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007(S.I. No. 684 of 2007).

European Commission (2000) *Managing Natura 2000 Sites: the Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*. European Communities, Luxembourg.

European Commission (2001) *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. European Communities, Luxembourg.

European Commission (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/49/EEC; clarification of the concepts of: Alternative solutions, Imperative reasons of overriding public interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.

NPWS (2011a) *Conservation Objectives for Blackwater River (Cork/Waterford) SAC [002170].* Generic Version 2.0. Department of the Environment Heritage & Local Government, Dublin.

NPWS (2011b) *Conservation Objectives for Blackwater Estuary SPA [004028].* Generic Version 2.0. Department of the Environment Heritage & Local Government, Dublin.

NS2 (2010) F*reshwater Pearl Mussel – Munster Blackwater Sub-Basin Management Plan.* 2nd Draft. NPWS, Dublin.

Appendix A

A.1 Blackwater Estuary SPA Site Synopsis (004028)

A.1.1 The Blackwater Estuary SPA is a moderately-sized, sheltered south-facing estuary, which extends from Youghal New Bridge to the Ferry Point peninsula, close to where the river enters the sea. It comprises a section of the main channel of the River Blackwater. At low tide, intertidal flats are exposed on both sides of the channel. On the eastern side the intertidal channel extending as far as Kinsalebeg and Moord Cross Roads is included, while on the west side the site includes the estuary of the Tourig River.

A.1.2 The intertidal sediments are mostly muds or sandy muds reflecting the sheltered conditions of the estuary. Green algae (*Enteromorpha* spp. and *Ulva lactuca*) are frequent on the mudflats during summer, and Bladder Wrack (*Fucus vesiculosus*) occurs on the upper more stony shorelines. The sediments have a macrofauna typical of muddy sands, with polychaete worms such as Lugworm (*Arenicola marina*), Ragworm (*Hediste diversicolor*) and the marine bristle worm *Nephtys hombergii* being common. Bivalves are also well represented, especially Peppery Furrow-shell (*Scrobicularia plana*), but also Sand Gaper (*Mya arenaria*), Baltic Tellin (*Macoma balthica*) and Common Cockle (*Cerastoderma edule*). Among the brown seaweed on the shoreline, the Shore Crab (*Carcinus maenus*) and the Rough Periwinkle (*Littorina saxatilis*) are found. Salt marshes fringe the estuarine channels, especially in the sheltered creeks.

A.1.3 The Blackwater Estuary is of high ornithological importance for wintering waterfowl, providing good quality feeding areas for an excellent diversity of waterfowl species. At high tide, the birds roost along the shoreline and salt marsh fringe, especially in the Kinsalebeg area. A low-lying field at Blackbog is a favoured roost. Some birds may leave the site to roost in fields above the shoreline. The site supports an internationally important population of Black-tailed Godwit (934), and has a further eight species with nationally important populations (all figures are average peaks for the five winters 1995/96 to 1999/2000): Shelduck (151), Wigeon (1,232), Golden Plover (2,947), Lapwing (3,988), Dunlin (2,016), Curlew (1,194), Redshank (634) and Greenshank (30). A population of Bar-tailed Godwit (172) is very close to the threshold for national importance.

A.1.4 Other species which occur in significant numbers include Grey Heron (27), Teal (527), Mallard (148), Oystercatcher (508), Grey Plover (2,947), Knot (50) and Turnstone (56). The site is also notable for supporting large concentrations of gulls in autumn and winter. Principal species are Black-headed Gull (549), Common Gull (253), Lesser Black-backed Gull (602) and Great Black-backed Gull (227).

A.1.5 Little Egrets are a feature of the site throughout the year as there is a breeding colony upstream. The estuary provides an important feeding area for these birds (often more than 10).

A.1.6 The Blackwater Estuary SPA is an internationally important wetland site on account of the population of Black-tailed Godwit it supports. It is also of high importance in a national context, with eight species having populations which exceed the thresholds for national importance. The occurrence of Little Egret, Golden Plover and Bar-tailed Godwit is of particular note as these species are listed on Annex I of the E.U. Birds Directive. The site has been well-studied, with detailed monthly counts extending back to 1974.

[01.06.2004]

A.2 Blackwater River (Cork/Waterford) SAC Site Synopsis (002170)

A.2.1 The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. In times of heavy rainfall the levels can fluctuate widely by more than 12 feet on the gauge at Careysville. The peaty nature of the terrain in the upper reaches and of some of the tributaries gives the water a pronounced dark colour. The site consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond, the tidal stretches as far as Youghal Harbour and many tributaries, the larger of which includes the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The extent of the Blackwater and its tributaries in this site, flows through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. Towns along, but not in the site, include Rathmore, Millstreet, Kanturk, Banteer, Mallow, Buttevant, Doneraile, Castletownroche, Fermoy, Ballyduff, Rathcormac, Tallow, Lismore, Cappoquin and Youghal.

A.2.2 The Blackwater rises in boggy land of east Kerry, where Namurian grits and shales build the low heather-covered plateaux. Near Kanturk the plateaux enclose a basin of productive Coal Measures. On leaving the Namurian rocks the Blackwater turns eastwards along the northern slopes of the Boggeraghs before entering the narrow limestone strike vale at Mallow. The valley deepens as first the Nagles Mountains and then the Knockmealdowns impinge upon it. Interesting geological features along this stretch of the Blackwater Valley include limestone cliffs and caves near the villages and small towns of Killavullen and Ballyhooly; the Killavullen caves contain fossil material from the end of the glacial period. The associated basic soils in this area support the growth of plant communities which are rare in Cork because in general the county's rocks are acidic. At Cappoquin the river suddenly turns south and cuts through high ridges of Old Red Sandstone. The Araglin valley is predominantly underlain by sandstone, with limestone occurring in the lower reaches near Fermoy.

A.2.3 The site is a candidate SAC selected for alluvial wet woodlands and Yew wood, both priority habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for floating river vegetation, estuaries, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, perennial vegetation of stony banks and old Oak woodlands, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter and the Killarney Fern.

A.2.4 Wet woodlands are found where river embankments, particularly on the River Bride, have broken down and where the channel edges in the steep-sided valley between Cappoquin and Youghal are subject to daily inundation. The river side of the embankments was often used for willow growing in the past (most recently at Cappoquin) so that the channel is lined by narrow woods of White and Almond-leaved Willow (*Salix alba* and *S. triandra*) with isolated Crack Willow (*S. fragilis*) and Osier (*S. viminalis*). Grey Willow (*S. cinerea*) spreads naturally into the sites and occasionally, as at Villierstown on the Blackwater and Sapperton on the Bride, forms woods with a distinctive mix of woodland and marsh plants, including Gypsywort (*Lycopus europaeus*), Guelder Rose (*Viburnum opulus*), Bittersweet (*Solanum dulcamara*) and various mosses and algae. These wet woodlands form one of the most extensive tracts of the wet woodland habitat in the country.

A.2.5 A small stand of Yew (*Taxus baccata*) woodland, a rare habitat in Ireland and the EU, occurs within the site. This is on a limestone ridge at Dromana, near Villierstown. While there are some patches of the wood with a canopy of Yew and some very old trees, the quality is generally poor due to the dominance of non-native and invasive species such as Sycamore, Beech and Douglas Fir (*Pseudotsuga menzsisii*). However, the future prospect for this Yew wood is good as the site is proposed for restoration under a Coillte EU Life Programme. Owing to its rarity, Yew woodland is listed with priority status on Annex I of the EU Habitats Directive.

A.2.6 Marshes and reedbeds cover most of the flat areas beside the rivers and often occur in mosaic with the wet woodland. Common Reed (*Phragmites australis*) is ubiquitous and is harvested for thatching. There is also much Marsh Marigold (*Caltha palustris*) and, at the edges of the reeds, the Greater and Lesser Pond-sedge (*Carex riparia* and *C. acutiformis*). Hemlock Water-dropwort (*Oenanthe crocata*), Wild Angelica (*Angelica sylvestris*), Reed Canary-grass (*Phalaris arundinacea*), Meadowsweet (*Filipendula ulmaria*), Nettle (*Urtica dioica*), Purple Loosestrife (*Lythrum salicaria*), Marsh Valerian (*Valeriana officinalis*), Water Mint (*Mentha aquatica*) and Water Forget-me-not (*Myosotis scorpioides*).

A.2.7 At Banteer there are a number of hollows in the sediments of the floodplain where subsidence and subterranean drainage have created isolated wetlands, sunk below the level of the surrounding fields. The water rises and falls in these holes depending on the watertable and several different communities have developed on the acidic or neutral sediments. Many of the ponds are ringed about with Grey Willows, rooted in the mineral soils but sometimes collapsed into the water. Beneath the densest stands are woodland herbs like Yellow Pimpernel (*Lysimachia nemorum*) with locally abundant Starwort (*Callitriche stagnalis*) and Marsh Ragwort (*Senecio palustris*). One of the depressions has Silver Birch (*Betula pendula*), Ash (*Fraxinus excelsior*), Crab Apple (*Malus sylvestris*) and a little Oak (*Quercus robur*) in addition to the willows.

A.2.8 Floating river vegetation is found along much of the freshwater stretches within the site. The species list is quite extensive and includes Pond Water-crowfoot (*Ranunculus peltatus*), Water-crowfoot (*Ranunculus* spp.), Canadian Pondweed (*Elodea canadensis*), Broad-leaved Pondweed (*Potamogeton natans*), Pondweed (*Potamogeton* spp.), Water Milfoil (*Myriophyllum* spp.), Common Club-rush (*Scirpus lacustris*), Water-starwort (*Callitriche* spp.), Lesser Water-parsnip (*Berula erecta*) particularly on the Awbeg, Water-cress (*Nasturtium officinale*), Hemlock Water-dropwort, Fine-leaved Water-dropwort (*O. aquatica*), Common Duckweed (*Lemna minor*), Yellow Water-lily (*Nuphar lutea*), Unbranched Bur-reed (*Sparganium emersum*) and the moss *Fontinalis antipyretica*.

A.2.9 The grassland adjacent to the rivers of the site is generally heavily improved, although liable to flooding in many places. However, fields of more species-rich wet grassland with species such as Yellow-flag (*Iris pseudacorus),* Meadow-sweet, Meadow Buttercup (*Ranunculus acris*) and rushes (*Juncus* spp.) occur occasionally. Extensive fields of wet grassland also occur at Annagh Bog on the Awbeg. These fields are dominated by Tufted Hair-grass (*Deschampsia cespitosa*) and rushes.

A.2.10 The Blackwater Valley has a number of dry woodlands; these have mostly been managed by the estates in which they occur, frequently with the introduction of Beech (*Fagus sylvatica*) and a few conifers, and sometimes of Rhododendron (*Rhododendron ponticum*) and Laurel. Oak woodland is well developed on sandstone about Ballinatray, with the acid Oak woodland community of Holly (*Ilex aquifolium*), Bilberry (*Vaccinium myrtillus*), Greater Woodrush (*Luzula sylvatica*) and Buckler Ferns (*Dryopteris affinis, D. aemula*) occurring in one place. Irish Spurge (*Euphorbia hyberna*) continues eastwards on acid rocks from its headquarters to the west but there are many plants of richer soils, for example Wood Violet (*Viola reichenbachiana*), Goldilocks (*Ranunculus auricomus*), Broad-leaved Helleborine (*Epipactis helleborine*) and Red Campion (*Silene dioica*). Oak woodland is also found in Rincrew, Carrigane, Glendine, Newport and Dromana. The spread of Rhododendron is locally a problem, as is over-grazing. A few limestone rocks stand over the river in places showing traces of a less acidic woodland type with Ash, False Brome (*Brachypodium sylvaticum*) and Early-purple Orchid (*Orchis mascula*).

A.2.11 In the vicinity of Lismore, two deep valleys cut in Old Red Sandstone join to form the Owenashad River before flowing into the Blackwater at Lismore. These valleys retain something close to their original cover of Oak with Downy Birch (*Betula pubescens*), Holly and Hazel (*Corylus avellana*) also occurring. There has been much planting of Beech (as well as some of coniferous species) among the Oak on the shallower slopes and here both Rhododendron and Cherry Laurel (*Prunus laurocerasus*) have invaded the woodland.

A.2.12 The Oak wood community in the Lismore and Glenmore valleys is of the classical upland type, in which some Rowan (*Sorbus aucuparia*) and Downy Birch occur. Honeysuckle (*Lonicera periclymenum*) and Ivy (*Hedera helix*) cover many of the trees while Greater Woodrush, Bluebell (*Hyacinthoides non-scripta*), Wood Sorrel (*Oxalis acetosella*) and, locally, Bilberry dominates the ground flora. Ferns present on the site include Hard Fern (*Blechnum spicant*), Male Fern (*Dryopteris filix-mas*), Buckler Ferns (*D. dilatata, D. aemula*) and Lady Fern (*Athyrium felix-femina*). There are many mosses present and large species such as *Rhytidiadelphus* spp., *Polytrichum formosum, Mnium hornum* and *Dicranum* spp. are noticeable. The lichen flora is important and includes 'old forest' species which imply a continuity of woodland here since ancient times. Tree Lungwort (*Lobaria* spp.) is the most conspicuous and is widespread.

A.2.13 The Araglin valley consists predominantly of broadleaved woodland. Oak and Beech are joined by Hazel, Wild Cherry (*Prunus avium*) and Goat Willow (*Salix caprea*). The ground flora is relatively rich with Pignut (*Conopodium majus*), Wild Garlic (*Allium ursinum*), Garlic Mustard (*Alliaria petiolata*) and Wild Strawberry (*Fragaria vesca*). The presence of Ivy Broomrape (*Orobanche hederae*), a local species within Ireland, suggests that the woodland, along with its attendant Ivy is long established.

A.2.14 Along the lower reaches of the Awbeg River, the valley sides are generally cloaked with mixed deciduous woodland of estate origin. The dominant species is Beech, although a range of other species are also present, e.g. Sycamore (*Acer pseudoplatanus*), Ash and Horse-chestnut (*Aesculus hippocastanum*). In places the alien invasive species, Cherry Laurel, dominates the understorey. Parts of the woodlands are more semi-natural in composition, being dominated by Ash with Hawthorn (*Crataegus monogyna*) and Spindle (*Euonymus europaea*) also present. However, the most natural areas of woodland appear to be the wet areas dominated by Alder and willows (*Salix* spp.). The ground flora of the dry woodland areas features species such as Pignut, Wood Avens (*Geum urbanum*), Ivy and Soft Shield-fern (*Polystichum setiferum*), while the ground flora of the wet woodland areas contains characteristic species such as Remote Sedge (*Carex remota*) and Opposite-leaved Golden-saxifrage (*Chrysosplenium oppositifolium*).

A.2.15 In places along the upper Bride, scrubby, semi-natural deciduous woodland of Willow, Oak and Rowan occurs with abundant Great Woodrush in the ground flora.

A.2.16 The Bunaglanna River passes down a very steep valley, flowing in a north-south direction to meet the Bride River. It flows through blanket bog to heath and then scattered woodland. The higher levels of moisture here enable a vigorous moss and fern community to flourish, along with a well-developed epiphyte community on the tree trunks and branches.

A.2.17 At Banteer a type of wetland occurs near the railway line which offers a complete contrast to the others. Old turf banks are colonised by Royal Fern (*Osmunda regalis*) and Eared Willow (*Salix aurita*) and between them there is a sheet of Bottle Sedge (*Carex rostrata*), Marsh Cinquefoil (*Potentilla palustris*), Bogbean (*Menyanthes trifoliata*), Marsh St. John's-wort (*Hypericum elodes*) and the mosses *Sphagnum auriculatum* and *Aulacomnium palustre*. The cover is a scraw with characteristic species like Marsh Willowherb (*Epilobium palustre*) and Marsh Orchid (*Dactylorhiza incarnata*).

A.2.18 The soil high up the Lismore valleys and in rocky places is poor in nutrients but it becomes richer where streams enter and also along the valley bottoms. In such sites Wood Speedwell (*Veronica montana*), Wood Anemone (*Anemone nemorosa*), Enchanter's Nightshade (*Circaea lutetiana*), Barren Strawberry (*Potentilla sterilis*) and Shield Fern occur. There is some Wild Garlic, Three-nerved Sandwort (*Moehringia trinervia*) and Early-purple Orchid (*Orchis mascula*) locally, with Opposite-leaved Golden-saxifrage, Meadowsweet and Bugle in wet places. A Hazel stand at the base of the Glenakeeffe valley shows this community well.

A.2.19 The area has been subject to much tree felling in the recent past and re-sprouting stumps have given rise to areas of bushy Hazel, Holly, Rusty Willow (*Salix cinerea* subsp. *oleifoila*) and Downy Birch. The ground in the clearings is heathy with Heather (*Calluna vulgaris*), Slender St John's-wort (*Hypericum pulchrum*) and the occasional Broom (*Cytisus scoparius*) occurring.

A.2.20 The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. Very extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. The main expanses occur at the southern end of the site with the best examples at Kinsalebeg in Co. Waterford and between Youghal and the main bridge north of it across the river in Co. Cork. Other areas occur along the tributaries of the Licky in east Co. Waterford and Glendine, Newport, Bride and Killahaly Rivers in Waterford west of the Blackwater and large tracts along the Tourig River in Co. Cork. There are narrow bands of intertidal flats along the main river as far north as Camphire Island. Patches of green algae (filamentous, *Ulva* species and *Enteromorpha* sp.) occur in places, while fucoid algae are common on the more stony flats even as high upstream as Glenassy or Coneen.

A.2.21 The area of saltmarsh within the site is small. The best examples occur at the mouths of the tributaries and in the townlands of Foxhole and Blackbog. Those found are generally characteristic of Atlantic salt meadows. The species list at Foxhole consists of Common Saltmarsh-grass (*Puccinellia maritima*), small amounts of Greater Sea-spurrey (*Spergularia media*), Glasswort (*Salicornia* sp.), Sea Arrowgrass (*Triglochin maritima*), Annual Sea-blite (*Suaeda maritima*) and Sea Purslane (*Halimione portulacoides*) - the latter a very recent coloniser - at the edges. Some Sea Aster (*Aster tripolium*) occurs, generally with Creeping Bent (*Agrostis stolonifera*). Sea Couch-grass (*Elymus pycnanthus*) and small isolated clumps of Sea Club-rush (*Scirpus maritimus*) are also seen. On the Tourig River additional saltmarsh species found include Lavender (*Limoniun* spp.), Sea Thrift (*Armeria maritima*), Red Fescue (*Festuca rubra*), Common Scurvy-grass (*Cochlearia officinalis*) and Sea Plantain (*Plantago maritima*). Oraches (*Atriplex* spp.) are found on channel edges.

A.2.22 The shingle spit at Ferrypoint supports a good example of perennial vegetation of stony banks. The spit is composed of small stones and cobbles and has a well developed and diverse flora. At the lowest part, Sea Beet (*Beta vulgaris*), Curled Dock (*Rumex crispus*) and Yellow-horned Poppy (*Glaucium flavum*) occur with at a slightly higher level Sea Mayweed (*Tripleurospermum maritimum*), Cleavers (*Galium aparine*), Rock Samphire (*Crithmum maritimum*), Sandwort (*Honkenya peploides*), Spear-leaved Orache (*Atriplex prostrata*) and Babington's Orache (*A. glabriuscula*). Other species present include Sea Rocket (*Cakile maritima*), Herb Robert (*Geranium robertianum*), Red Fescue (*Festuca rubra*) and Kidney Vetch (*Anthyllis vulneraria*). The top of the spit is more vegetated and includes lichens and bryophytes (including *Tortula ruraliformis* and *Rhytidiadelphus squarrosus*).

A.2.23 The site supports several Red Data Book plant species, i.e. Starved Wood Sedge (*Carex depauperata*), Killarney Fern (*Trichomanes speciosum*), Pennyroyal (*Mentha pulegium*), Bird's-nest Orchid (*Neottia nidus-avis,* Golden Dock (*Rumex maritimus*) and Bird Cherry (*Prunus padus*). The first three of these are also protected under the Flora (Protection) Order 1999. The following plants, relatively rare nationally, are also found within the site: Toothwort (*Lathraea squamaria*) associated with woodlands on the Awbeg and Blackwater; Summer Snowflake (*Leucojum aestivum*) and Flowering Rush (*Butomus umbellatus*) on the Blackwater; Common Calamint (*Calamintha ascendens*), Red Campion (*Silene dioica*), Sand Leek (*Allium scorodoprasum*) and Wood Club-rush (*Scirpus sylvaticus*) on the Awbeg.

A.2.24 The site is also important for the presence of several Habitats Directive Annex II animal species, including Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*L. fluviatilis*), Twaite Shad (*Alosa fallax fallax*), Freshwater Pearl-mussel (*Margaritifera margaritifera*), Otter (*Lutra lutra*) and Salmon (*Salmo salar*). The Awbeg supports a population of White-clawed Crayfish (*Austropotamobius pallipes*). This threatened species has been recorded from a number of locations and its remains are also frequently found in Otter spraints, particularly in the lower reaches of the river. The freshwater stretches of the Blackwater and Bride Rivers are designated salmonid rivers.

A.2.25 The Blackwater is noted for its enormous run of salmon over the years. The river is characterised by mighty pools, lovely streams, glides and generally, a good push of water coming through except in very low water. Spring salmon fishing can be carried out as far upstream as Fermoy and is very highly regarded especially at Careysville. The Bride, main Blackwater upstream of Fermoy and some of the tributaries are more associated with grilse fishing.

A.2.26 The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. The bat species Natterer's Bat, Daubenton's Bat, Whiskered Bat, Brown Long-eared Bat and Pipistrelle, are to be seen feeding along the river, roosting under the old bridges and in old buildings.

A.2.27 Common Frog, a Red Data Book species that is also legally protected (Wildlife Act, 1976), occurs throughout the site. The rare bush cricket, *Metrioptera roselii* (Orthoptera: Tettigoniidae), has been recorded in the reed/willow vegetation of the river embankment on the Lower Blackwater River. The Swan Mussel (*Anodonta cygnea*), a scarce species nationally, occurs at a few sites along the freshwater stretches of the Blackwater.

A.2.28 Several bird species listed on Annex I of the E.U. Birds Directive are found on the site. Some use it as a staging area, others are vagrants, while others use it more regularly. Internationally important numbers of Whooper Swan (average peak 174, 1994/95-95/96) and nationally important numbers Bewick's Swan (average peak 5, 1996/97-2000/01) use the Blackwater Callows. Golden Plover occur in regionally important numbers on the Blackwater Estuary (average peak 885, 1984/85-86/87) and on the River Bride (absolute max. 2141, 1994/95). Staging Terns visit the site annually (Sandwich Tern (>300) and Arctic/Common Tern (>200), average peak 1974-1994). The site also supports populations of the following: Red Throated Diver, Great Northern Diver, Barnacle Goose, Ruff, Wood Sandpiper and Greenland White-fronted Goose. Three breeding territories for Peregrine Falcon are known along the Blackwater Valley. This, the Awbeg and the Bride River are also thought to support at least 30 pairs of Kingfisher. Little Egret now breed at the site (12 pairs in 1997, 19 pairs in 1998) and this represents about 90% of the breeding population in Ireland.

A.2.29 The site holds important numbers of wintering waterfowl. Both the Blackwater Callows and the Blackwater Estuary Special Protection Areas (SPAs) hold internationally important numbers of Black-tailed Godwit (average peak 847, 1994/95-95/96 on the callows, average peak 845, 1974/75-93/94 in the estuary). The Blackwater Callows also hold Wigeon (average peak 2752), Teal (average peak 1316), Mallard (average peak 427), Shoveler (average peak 28), Lapwing (average peak 880), Curlew (average peak 416) and Black-headed Gull (average peak 396) (counts from 1994/95-95/96). Numbers of birds using the Blackwater Estuary, given as the mean of the highest monthly maxima over 20 years (1974-94), are Shelduck (137 +10 breeding pairs), Wigeon (780), Teal (280), Mallard (320 + 10 breeding pairs), Goldeneye (11-97), Oystercatcher (340), Ringed Plover (50 + 4 breeding pairs), Grey Plover (36), Lapwing (1680), Knot (150), Dunlin (2293), Snipe (272), Black-tailed Godwit (845), Bar-tailed Godwit (130), Curlew (920), Redshank (340), Turnstone (130), Black-headed Gull (4000) and Lesser Black-backed Gull (172). The greatest numbers (75%) of the wintering waterfowl of the estuary are located in the Kinsalebeg area on the east of the estuary in Co. Waterford. The remainder are concentrated along the Tourig Estuary on the Co. Cork side.

A.2.30 The river and river margins also support many Heron, non-breeding Cormorant and Mute Swan (average peak 53, 1994/95-95/96 in the Blackwater Callows). Heron occurs all along the Bride and Blackwater Rivers - 2 or 3 pairs at Dromana Rock; *c.* 25 pairs in the woodland opposite; 8 pairs at Ardsallagh Wood and *c.* 20 pairs at Rincrew Wood have been recorded. Some of these are quite large and significant heronries. Significant numbers of Cormorant are found north of the bridge at Youghal and there are some important roosts present at Ardsallagh Wood, downstream of Strancally Castle and at the mouth of the Newport River. Of note are the high numbers of wintering Pochard (e.g. 275 individuals in 1997) found at Ballyhay quarry on the Awbeg, the best site for Pochard in County Cork.

A.2.31 Other important species found within the site include Long-eared Owl, which occurs all along the Blackwater River, and Barn Owl, a Red Data Book species, which is found in some old buildings and in Castlehyde west of Fermoy. Reed Warbler, a scarce breeding species in Ireland, was found for the first time in the site in 1998 at two locations. It is not known whether or not this species breeds on the site, although it is known to nearby to the south of Youghal. Dipper occurs on the rivers.

A.2.32 Landuse at the site is mainly centred on agricultural activities. The banks of much of the site and the callows, which extend almost from Fermoy to Cappoquin, are dominated by improved grasslands which are drained and heavily fertilised. These areas are grazed and used for silage production. Slurry is spread over much of this area. Arable crops are grown. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of Habitats Directive Annex II animal species within it. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the Blackwater and its tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. Other recreational activities such as boating, golfing and walking are also popular. Water skiing is carried out at Villierstown. Parts of Doneraile Park and Anne's Grove are included in the site: both areas are primarily managed for amenity purposes. There is some hunting of game birds and Mink within the site. Ballyhay quarry is still actively quarried for sand and gravel. Several industrial developments, which discharge into the river, border the site.

A.2.33 The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, overgrazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel.

A.2.34 Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively; furthermore it is of high conservation value for the populations of bird species that use it. Two Special Protection Areas, designated under the E.U. Birds Directive, are also located within the site - Blackwater Callows and Blackwater Estuary. Additionally, the importance of the site is enhanced by the presence of a suite of uncommon plant species.

[07.02.2007]

Atkins is one of the world's leading providers of professional, technology based consultancy services. With over 18,500 staff worldwide, Atkins has expanded in recent years from its historical base in traditional engineering into related technological consultancy services. In Ireland, Atkins can deliver the full range of services to clients in both the public and private sector.

Our clients are varied and include governments, local and regional authorities, funding agencies and commercial and industrial enterprises. We help our clients to realise their objectives by developing and delivering practical solutions, adding value to their businesses through the application of our experience, innovative thinking and state-of-the-art technology. Atkins in Ireland is an integral part of WS Atkins plc and employs over 160 staff at its offices in Dublin, Cork, Galway and Belfast. In addition, it is able to draw on the expertise of other Atkins divisions in the UK to provide appropriate staff on a project by project basis.

Atkins in Ireland provides a wide range of engineering, architectural, technical support and management services in the following key areas:-

- Roads (Highways & Bridges)
- Transportation & Planning Services
- Rail
- Water
- Architecture & Design
- Engineering
- Environment & Landscape
- Cost Management and Quantity Surveying

Unit 2B
2200 Cork Airport Business Park
Cork
Telephone +353 21 4290300
Fax +353 21 4290360

Atkins House
150-155 Airside Business Park
Swords, Co Dublin
Telephone +353 1 890 9000
Fax +353 1 890 9001

2nd Floor
Technology House
Parkmore Technology Park
Galway
Telephone +353 91 786050
Fax +353 91 779830

www.atkinsireland.ie
email: info.ie@atkinsglobal.com

Plan Design Enable

ANNEX F

REVISED NON TECHNICAL SUMMARY

SECTION A: NON-TECHNICAL SUMMARY

Advice on completing this section is provided in the accompanying Guidance Note.

A non-technical summary of the application is to be included here. The summary should identify all environmental impacts of significance associated with the discharge of waste water associated with the waste water works. This description should also indicate the hours during which the waste water works is supervised or manned and days per week of this supervision.

The following information must be included in the non-technical summary:

A description of:

- the waste water works and the activities carried out therein,
- the sources of emissions from the waste water works,
- the nature and quantities of foreseeable emissions from the waste water works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment,
- the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the waste water works,
- further measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused;
- measures planned to monitor emissions into the environment.

Supporting information should form **Attachment Nº A.1**

Youghal is located on the main Cork City (51km) to Waterford (72km) road (i.e. the N25) and is a port of considerable antiquity. Youghal Harbour lies approximately 30 km east of Cork Harbour and forms part of the lower estuary of the Blackwater River. The harbour and outer bay are popular tourist destinations, particularly during the summer months, and have a high level of recreational fishing, sailing and bathing activity.

The Blackwater Estuary was designated as 'sensitive' in 2001 under the Urban Waste Water Treatment Regulations, and is an area of significant recreational activity and is used for bathing. The Front Strand and Claycastle Beach are popular tourist attractions comprising 5km of sandy beach with Blue Flag status. The sea off these beaches is also a designated bathing water under the Bathing Water Regulations. Ballyvergan Marsh, to the rear of Claycastle Beach, is an important wetland area and a designated Special Area for Conservation (SAC).

The sewer network serving Youghal and environs has grown and expanded as the town developed through the mid and late 20th century. The foul/combined network drains to three main outfalls and for the purpose of this assessment is considered as three discrete sub-catchments, Knockaverry to the North, Strand to the South and Foxhole to the extreme North West. An overview of the catchments and outfalls is presented in Chapter 6, Figure 6.1.

Waste water from the town is currently discharged to the Blackwater Estuary and the sea via three main outfalls at Paxe's Lane near Green Park, Dunn's Park and Foxhole near the Youghal Landfill site. Parts of these flows are comminuted before being discharged.

Discharge	Function	Location	Receptor	Grid Reference
Primary	Major Outfall	Dunn's Park	Lower Blackwater Estuary	E210513 N078480
Secondary	Minor Outfall	Paxes Lane	Lower Blackwater Estuary	E210996 N077419
Secondary	Minor Outfall	Foxhole	Lower Blackwater Estuary	E210128 N080410
Secondary	Emergency Overflow	Summerfield (Cross)	Youghal Bay	E209253 N076191
Secondary	Stormwater Overflow	Summerfield B	Youghal Bay	E209045 N076152
Secondary	Stormwater Overflow	Kilcoran	Youghal Bay	E209244 N076218
Secondary	Stormwater Overflow	Front Strand	Youghal Bay	E210517 N076042
Secondary	Stormwater Overflow	Green Park	Lower Blackwater Estuary	E210956 N077117
Secondary	Stormwater Overflow	Dunn's Park	Lower Blackwater Estuary	E210262 N078412
Secondary	Stormwater Overflow	Foxhole	Lower Blackwater Estuary	E209723 N079912

The sewer networks within each of the three sub-catchments are mainly combined systems with some of the newer housing estates having been constructed with separate foul and surface water systems. Roof and road drainage generally discharges to the combined system, especially towards the historical centre of the town

Currently, there is no waste water treatment other than a holding tank and comminutors on the Dunn's Park and Paxe's Lane outfalls.

Knockaverry

The Knockaverry catchment contains the older parts of the sewer system and includes the historical centre of the town. The catchment drains to an outfall adjacent to Dunn's Park pumping station. Approximately half of the flow from this catchment discharges by gravity through this outfall (approximately a quarter of the flow discharging through this outfall is comminuted) and half is pumped. The existing flow arrangement is indicated schematically in Volume 3, Figure 7.

One combined sewer overflow (CSO) exists within the Knockaverry catchment at Dunn's Park pumping station. This discharges to a drainage channel across the mudlands.

Strand

Flows draining to the Summerfield Cross pumping station on the R633, west of Youghal, are pumped into the system draining to a holding tank and onward to the Strand pumping station.

Flows in the Strand catchment discharge to the Strand pumping station via a holding tank on Front Strand. These flows are pumped to Lighthouse Road and drain by gravity to the Green Park comminutor station and discharge into the estuary via the Paxe's Lane outfall.

Five combined sewer overflows (CSO's) exist in the Strand Catchment which discharge untreated waste water to the wetlands at Balleyvergan Marsh or to the Blackwater Estuary. In addition, a number of outfalls have been identified which discharge domestic waste water directly to the estuary.

The surface water drainage system is generally restricted to localised pipe networks in the vicinity of newer housing estates. Roof and road drainage discharges to nearby streams and watercourses although a significant proportion of the surface water system currently discharges into the foul/combined system.

The combined system contains a number of loops and bifurcations. In places, up to four combined sewers run along the R633, the main road into Youghal.

Foxhole

The Foxhole catchment to the north west of Youghal drains to a small pumping station on Old Bridge Road which discharges untreated waste water directly to the Blackwater Estuary. The overflow from the pumping station discharges to an existing surface water drainage channel serving the mudlands.

CSO's

Seven Combined Sewer Overflows (CSO's) exist in the foul/combined sewer system that discharge into the Blackwater Estuary or other local watercourses.

The operation of the CSO's has been assessed with reference to acceptable levels of service criteria based on guidelines issued by the Department of Environment and Local Government and it has been determined that the operation of three of the CSO's is currently unacceptable.

Wastewater Treatment Works

An upgrade and extension of the existing collection system is proposed along with the transfer of all foul/combined waste water to the new WWTW site immediately north of the town. The new WWTW would discharge treated effluent to Youghal Harbour.