

This report has been cleared for submission to the Board
by Senior Inspector Dr Karen Creed.
Signed: *A. Creed* Date: *9/7/13*



OFFICE OF CLIMATE, LICENSING & RESOURCE USE.

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	Directors		
From:	Gavin Clabby	Environmental Licensing Programme	
Date:	23 rd July 2013		
RE:	Application for a Waste Water Discharge Licence from Cork County Council Western Division, for the agglomeration named Clonakilty and Environs, Reg. No. D0051-01.		

The Environmental Protection
Agency
10 JUL 2013
CORK

Application Details

Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of more than 10,000.
Licence application received:	14/12/2007
Notices under Regulation 18(3)(b) issued:	04/04/2008; 16/05/2013
Information under Regulation 18(3)(b) received:	20/06/2008; 07/07/2008; 15/10/2009; 29/05/2013
Site notice check:	11/01/2008
Site Inspection:	13/05/2013
Submission(s) Received:	None

1. Agglomeration

This application relates to the agglomeration named Clonakilty and Environs. Clonakilty is located on the south coast of County Cork (See map in Appendix).

The current WWTP was designed to cater for a population equivalent (P.E.) of 5,333. The existing summertime peak P.E. served by the wastewater works is approximately 16,000. The influent to the wastewater treatment plant (WWTP) consists of both domestic and industrial wastewater. The sewage system is a partially combined network with both gravity and pumped sections.

The WWTP provides secondary treatment. The plant consists of grit removal/classifier, screening, extended aeration (2 No. oxidation ditches), secondary sedimentation (2 No. circular hoppers) and sludge thickening/removal.

2. Discharges to waters

The final treated effluent discharges through the primary discharge point (SW001) to the estuarine channel of the River Feagle in Clonakilty Harbour. The harbour is designated as a sensitive area. The normal flow from the WWTP is 1,500 m³day, while the maximum discharge from the WWTP is 2,500 m³day. The final treated effluent quality from the WWTP for parts of 2011 was within the limits prescribed in the Urban Wastewater Treatment Regulations for sensitive waters (BOD 25 mg/l, COD 125 mg/l, suspended solids 35 mg/l, total phosphorous 2 mg/l, total nitrogen 15 mg/l). However, during times of peak tourist influx, when the plant was overloaded, the effluent quality was not within these limits. Overall, the average effluent monitoring results for 2011 were: BOD 29 mg/l, COD 105 mg/l, suspended solids 43 mg/l, total phosphorous 2.1 mg/l, total nitrogen 19 mg/l.

There are no secondary discharge points within the agglomeration.

There are five emergency overflows within the agglomeration each associated with a pumping station. The emergency overflows are located at Long Quay, Clarke Street, Inchydoney main, Inchydoney minor and Gallanes. The influent flows by gravity to the pump stations, from where it is pumped to the WWTP. Each pump station contains both duty and stand-by pumps. The main pump station at Inchydoney is over three kilometres from the WWTP; In order to avoid septicity in the Inchydoney rising main (due to long retention times) air is injected into it at the pump station and at another point one kilometre from the WWTP.

There are two stormwater overflows within the agglomeration. They are located at Long Quay and Clarke Street pumping stations and discharge to the estuarine channel of the Feagle River. The licence, as drafted, requires that the stormwater overflow must conform to the criteria set out in the DoECLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency. The programme of infrastructural improvements required under Condition 5.1 of the RL requires an assessment of all storm water overflows (Condition 5.2.3) and preparation of an implementation plan as necessary (Condition 5.3).

Schedule A: Discharges & Discharge Monitoring of the recommended licence (RL) specifies the Emission Limit Values (ELVs) to which the discharge from the Clonakilty and Environs agglomeration must conform. The ELVs are aimed at providing a high degree of protection to the receiving water body. Monitoring of the discharges will take place as per this schedule of the RL.

3. Receiving waters and impact

The following table summarises the main considerations in relation to the receiving water, the estuarine channel of Clonakilty Harbour, downstream of the primary discharge. At low tide this receiving water is essentially entirely constituted by the freshwater inputs from the River Feagle. At high tide, the river channel, and the surrounding mudflats and sandflats, are flooded by the incoming seawater. The channel is classified under the Water Framework Directive (WFD) as a 'transitional water' and identified under the WFD as part of Clonakilty Harbour.

Table 1: Receiving waters

Characteristic	Classification	Comment
Receiving water name and type	Clonakilty Harbour (transitional)	(WFD Code: IE_SW_100_0100)
Applicable Regulations	UWWT Regulations ^{Note 1} Surface Water Regulations ^{Note 2} Bathing Water Regulations ^{Note 3}	nutrient reduction required for UWWT discharges to Clonakilty Harbour by 22/12/2016 In compliance In compliance
Designations	Nutrient Sensitive Water cSAC, Site code: 91 pSPA, Site Code: 4081 Also, bathing water designation in adjacent coastal waterbody	Clonakilty Harbour Clonakilty Bay Inchydoney
EPA monitoring stations	2nd Br d/s of Br ESE of Garralacka (EPA RS Code: RS20C020300) Opposite Youghals (EPA code: CY020)	Located 1.2 km u/s of SW001 on River Fealge/Clonakilty stream (Freshwater at this point) EPA estuarine monitoring station
Biological quality rating (Q value) of River Fealge	Q value: 4 (unpolluted) (2012)	RS20C020300
WFD status	Clonakilty Harbour – moderate (2013) River Fealge – Good (2011)	Restore date: 2021 Restore date: 2021
WFD Risk Category	Clonakilty Harbour – 1a (2008) River Fealge – 2a (2008)	Harbour at risk from WWTP overflows. River expected to achieve good status.

Note 1: Urban Wastewater Treatment Regulations, as amended, 2001.

Note 2: European Communities Environmental Objectives (Surface Water) Regulations 2009 (as amended).

Note 3: Bathing Water Quality Regulations 2008.

Clonakilty Harbour is designated a sensitive waters under the UWWT Regulations. Also, a section of the coastal waters outside the harbour are designated bathing waters under the Bathing Water Regulations. There are no designated shellfish areas in the vicinity. The wider Clonakilty Bay is also a designated SAC¹ and SPA². (The freshwater input to the harbour is the River Fealge, which is at good status. Applicant data shows that the levels of ammonia and orthophosphate in this stream are low and consistent with its Q4 status. The same data indicates that nitrate levels are elevated, with a mean of 6.3 mg/l NO₃ as N. The stream is identified as at risk from diffuse sources.)

The Transitional and Coastal Action Plan (TrAC) published by the South Western River basin District (SWRBD) lists Clonakilty Harbour as a waterbody at risk from land based point source pressures and identifies the overflows from the WWTP as a point source potentially putting this transitional waterbody at risk. The document also identified the waterbody as having moderate ecological status at present. This is an extrapolated status. The harbour is currently not given a status that is based on monitoring data.

The Office of Environmental Assessment (OEA), has however, carried out ambient monitoring in Clonakilty Harbour for the purposes of the trophic status assessment scheme (TSAS) 2010 to 2012. The assessment indicates that the harbour is Eutrophic. It is designated eutrophic upon the basis of 'fail' results for Winter DIN, opportunistic algae and % Dissolved Oxygen at the 95th percentile. The assessment assigns a 'pass' to the parameters of BOD and Orthophosphate. (In the European Communities Environmental Objectives (Surface Water) Regulations 2009, as amended, the key transitional water parameters are Biological Oxygen Demand and Orthophosphate.) The OEA have indicated that the appropriate current status of the receiving water is moderate (on the basis of opportunistic macro-algae) which reflects the extrapolated status given in the TrAC above.

The RL has set emission limit values (ELVs) 25 mg/l for cBOD, 125 mg/l for chemical oxygen demand (COD) and 35 mg/l for suspended solids (SS). These limits are in accordance with UWWT Regulations and are considered achievable by modern plant design standards. The current WWTP has extended aeration which can technically achieve these standards for the discharge while operating within its design capacity. Available monitoring data indicates these emission limit values are achievable for part of the year, but are not achievable during the peak tourist season, when the plant becomes overloaded. Furthermore, the above BOD limit combined with the good flushing ability of the tidal waters (as demonstrated by the applicant modelling) is seen as sufficient to ensure the EQS for BOD is achieved shall ensure that the WWTP does not contribute to any deterioration of the receiving water's status. In accordance with the UWWT Regulations, these limits shall apply from date of grant of licence.

The RL also requires that from the 22nd December 2016, the discharge shall meet standards of 15 mg/l for total nitrogen and 2 mg/l for total phosphorous, in order to meet the regulatory requirements for sensitive waters (See section 7). No orthophosphate limit is set in the RL as the above restrictive TP limit combined with the good flushing ability of the tidal waters is seen as sufficient to ensure the EQS for orthophosphate is achieved.

The designated bathing waters at Inchydoney are consistently compliant with the Bathing Water Regulations (and consistently achieve Blue Flag status). The applicant modelling for the proposed discharge (with no disinfection) indicates that the current discharge point is the optimum location for the protection the bathing waters (and the Blue Flag beach).

¹ SAC: Special Area of Conservation designated under the *Habitats Directive*, Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

² SPA: Special Protection Area designated under the *Birds Directive*, Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

Although not directly discharging to a coastal waterbody the agglomeration's discharges have an impact potential on the 'Clonakilty Bay' coastal waterbody on the seaward side of Clonakilty Harbour; In particular during ebb tide, when the discharges are conveyed more quickly down the estuarine channel to the bay. For this reason regard is had to the Dissolved Inorganic Nitrogen (DIN)³ EQS set for coastal waterbodies. The DIN standard for 'Good' status in coastal receiving waters is $\leq 0.17\text{mg/l}$ in accordance with European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended). The RL, however, does not set ELVs for DIN (or total oxidised nitrogen and ammonia). The restrictive TN limit (which includes DIN as a component⁴) combined with the good dispersion and dilutions available in the coastal water is regarded as contributing to the achievement of the good status standard for DIN in the coastal waterbody.

Tidal Barrage

It should be noted that Cork County Council received planning permission for the construction of a tidal barrage about 1 km downstream of the discharge point. The purpose of the barrage is to prevent the flooding of the town during extreme weather/tidal conditions. In addition to modelling the WWTP discharge, the applicant also included modelling for the effect of the proposed barrage on tidal movements. The modelling indicates the open barrage will not affect the amplitude (extent) of the tides but rather, will slightly affect the timings of the tides in the inner harbour.

The modelling indicates that when the barrage is closed the concentration of contaminants rises in the enclosed inner estuary but dissipates quickly back to normal levels after re-opening. Barrage closures are proposed to be in the order of one tidal cycle (approximately six hours).

Given the above, it is considered that the presence of the barrage will not impact on the discharge's compliance with the WFD objectives, or with any relevant standards, for the relevant waterbodies.

4. Ambient Monitoring

Schedule B.2: Ambient Monitoring of the RL specifies the parameters, analysis method and frequency for which ambient monitoring of the primary discharge shall be carried out. The requirements for ambient monitoring, in *Schedule B.2: Ambient Monitoring*, are sufficient to ensure that there will be no deterioration in the status of the receiving water as a result of the discharge.

5. Combined Approach

The Wastewater Discharge (Authorisation) Regulations (2007, as amended) specify that a 'combined approach' in relation to licensing of waste water works must be taken, whereby the emission limits for the discharge are established on the basis of the stricter of either or both, the limits and controls required under the Urban Waste Water Treatment Regulations (2001, as amended) and the limits determined under statute or Directive for the purpose of achieving the environmental objectives established for surface waters, groundwater or protected areas for the water body into which the discharge is made. The RL as drafted

³ DIN is the sum of the concentrations of nitrate, nitrite and ammonia.

⁴ In secondary treatment systems which incorporate N reduction, DIN typically constitutes 65-75% of the TN component.

gives effect to the principle of the Combined Approach as defined in Wastewater Discharge (Authorisation) Regulations (2007, as amended).

6. Programme of Improvements

The local authority has in place a programme of improvements for the agglomeration. The programme of improvements will be funded by the Water Services Investment Programme (5,000,000 euros has been allocated under this programme.). The works to be carried out include increasing and improving the capacity at the WWTP (by increasing the design load from 5,333 P.E. to 20,500 P.E.), including the incorporation of nitrogen and phosphorous reduction. The improvement works will also include the general refurbishment at the WWTP, an upgrade of the Long Quay pumping station and the construction of a new pumping station at Ring Village. Following discussions with the DECLG⁵ inspector for the WWTP, it is expected that programme of improvements will be completed by mid-2015. The RL as drafted requires that these works be completed by 31st December 2015 in order to ensure compliance with the emission limit values as set out in *Schedule A: Discharges & Discharge Monitoring* of the RL.

7. Compliance with EU Directives

In considering the application, regard was had to the requirements of Regulation 6(2) of the Wastewater Discharge (Authorisation) Regulations (2007, as amended) notably:

Drinking Water Abstraction Regulations

There are no drinking water abstractions downstream of the agglomeration's discharges discharge from the Clonakilty and Environs WWTP.

Sensitive Waters

The Urban Waste Water Treatment Regulations 2001 (as amended) require that nutrient reduction must be provided by the 22 December 2016 for UWWT discharges to the sensitive waters of Clonakilty Harbour. However, as discussed above, the DECLG have indicated that nutrient reduction will be provided at the WWTP by mid-2015.

ELVs for Total Nitrogen and Total Phosphorus have been set in the RD to ensure compliance with these regulations.

Water Framework Directive [2000/60/EC]

The RL, as drafted, transposes the requirements of the Water Framework Directive. In particular, *Condition 3: Discharges* provides conditions regulating discharges to waters. *Schedule A: Discharges & Discharge Monitoring* specifies limit values for those substances contained within the waste water discharge. Those limits specified in the RL are determined with the aim of achieving good water quality status by 2015.

⁵ Department of the Environment, Community and Local Government.

European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended)

The ambient monitoring data supplied by the OEA demonstrates compliance in the receiving water with the European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended). The RL, as drafted, includes emission limit values to ensure that the treatment provided by the plant is sufficient to satisfy the European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended).

To further ensure that the requirements of these regulations are met the RL requires that the receiving water is monitored twice yearly for, *inter alia*, DIN (as ammonia and TON⁶) and orthophosphate, as well as BOD and DO. This monitoring schedule reflects the parameters used by the Agency's TSAS.

Urban Waste Water Treatment Directive [91/271/EEC]

The Clonakilty and Environs WWTP currently complies with the requirements of the Urban Waste Water Treatment Directive, in terms of the type of treatment provided. (However, the WWTP is seasonally overloaded.) Also, nitrogen and phosphorous reduction is required for discharges to sensitive waters. Statutory Instrument No. 48 of 2010 designated Clonakilty Harbour as nutrient sensitive, and requires that nutrient reduction is provided for urban waste water discharges to this harbour by the 22nd December 2016. The RL, as drafted, has regard to this requirement and the general requirements of the Urban Waste Water Treatment Directive.

Bathing Water Directive [2006/7/EC]

The west beach at Inchydoney is designated a bathing water. It is located 5 km from the primary discharge. The Agency's report on '*The Quality of Bathing Waters in Ireland, An overview for 2011*'; states that these bathing waters are in compliance with EU Mandatory and Guide Values (Good Quality) and National standards.

Dangerous Substances Directive [2006/11/EC]

The applicant has provided once-off sampling results for all of the 19 dangerous substances in the primary discharge for the purposes of the licence application. The measured concentrations in the primary discharge are not considered significant when compared to the Dangerous Substances Directive limits, which are for ambient water.

Condition 4.21 of the RL, as drafted, requires the licensee to identify the priority substances for monitoring by undertaking a risk-based assessment in accordance with "*Guidance on the Screening for Priority Substances for Waste Water Discharge Licences*" issued by the Agency. Monitoring for any identified priority substance shall be carried out as required by the Agency.

Birds Directive [79/409/EEC] & Habitats Directive [92/43/EEC]

The Clonakilty and Environs WWTP discharges directly into the Clonakilty Bay SAC. The site is protected for priority habitats listed under Annex 1 of the Habitats Directive. The qualifying habitats are: Mudflats and sandflats not covered by seawater at low tide; Annual vegetation of drift lines; Embryonic shifting dunes; Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes); Fixed coastal dunes with herbaceous vegetation (grey dunes); and Atlantic decalcified fixed dunes (*Calluno-Ulicetea*). Clonakilty Bay is also

⁶ TON (Total Oxidised Nitrogen) is the sum of the concentrations of nitrate and nitrite.

designated an SPA under the Birds Directive for the conservation of wild birds. The qualifying interests of the SPA are the internationally important numbers of black-tailed godwit, nationally important numbers of Shelduck, Dunlin and Curlew (Annex II of the Birds Directive) and the presence of four species listed on Annex I of the Birds Directive, namely, the Golden Plover, Bar-tailed Godwit *Limosa lapponica* and the Little Egret *Egretta garzetta*.

A screening (Stage 1) for Appropriate Assessment of the discharges from the agglomeration was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the discharge, individually or in combination with other plans or projects, is likely to have a significant effect on the European Sites.

It was determined that an appropriate assessment was required. The applicant submitted a Natura Impact Statement, as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011).

The Appropriate Assessment concluded that the consequent reduction in the discharge of nutrients from the WWTP due to the works upgrade will benefit the harbour and wider bay.

The Appropriate Assessment demonstrates that the proposed discharge will not adversely affect the integrity of the European Sites.

In accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), pursuant to Article 6(3) of the Habitats Directive, the discharge will not adversely affect the integrity, in terms of maintaining favourable conservation status of the qualifying interests of the European Sites, having regard to its conservation objectives. In particular, *Condition 3: Discharges* provides conditions regulating discharges to waters. *Schedule A: Discharges & Discharge Monitoring* specifies limit values for those substances contained within the waste water discharge, including limits for phosphorous and nitrogen reduction. Those limits specified in the RL are determined with the aim of achieving good water quality status, thereby maintaining favourable conservation status.

Environmental Impact Assessment Directive [85/337/EEC]

An EIS and a copy of the planning approval were submitted in accordance with the Wastewater Discharge (Authorisation) Regulations (2007, as amended). In assessing the application regard was had to the matters mentioned therein in so far as they related to the risk of environmental pollution of Clonakilty Harbour from the waste water discharges associated with this agglomeration. Should any further EIS be required as part of any programme of improvements, it will be dealt with as per Condition 1.8 of the RL.

Environmental Liabilities Directive [2004/35/EC]

Condition 7.2 of the RL satisfies the requirements of the Environmental Liabilities Directive in particular those requirements outlined in Article 3(1) and Annex II of 2004/35/EC.

8. Cross Office Liaison

Shane O'Boyle and Robert Wilkes of the Office of Environmental Assessment (OEA) provided a trophic status assessment for Clonakilty Harbour, as well as general guidance on estuary monitoring, which proved useful for the assessment of the receiving water quality and setting requirements in the RL.

Advice and guidance issued by the Technical Working Group (TWG) was followed in my assessment of this application. Advice and guidance issued by the TWG is prepared through a detailed cross-office co-operative process, with the concerns of all sides taken into account. The Board of the Agency has endorsed the advice and guidance issued by the TWG for use by licensing inspectors in the assessment of wastewater discharge licence applications.

9. Submissions

No submissions were received in relation to this application.

10. Charges

The RL sets an annual charge for the agglomeration at € 7,113.78 and is reflective of the monitoring and enforcement regime being proposed for the agglomeration.

11. Recommendation

I recommend that a Final Licence be issued subject to the conditions and for the reasons as set out in the attached Recommended Licence.

Signed

A handwritten signature in blue ink is written over a solid black horizontal line. The signature is stylized and appears to consist of the letters 'G' and 'C'.

Gavin Clabby

Environmental Licensing Programme

Appendix
Agglomeration map
(Agglomeration boundary marked in red)

