This memo has been cleared for submission to the Board by the Senior Inspector Karen Creed
Signed: _____ Date: 20-01-11
Máire Buckley

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

OFFICE OF CLIMATE, LICENSING & RESOURCE USE.

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	DIRECTORS		
From:	**Gavin Clabby**	**Environmental Programme**	**Licensing**
Date:	20th January 2011		
RE:	Application for a Waste Water Discharge Licence from Cork County Council for the Castletownbere Agglomeration, Reg. No. D0297-01		

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 1,001 to 2,000
Licence application received:	27th February 2009
Notices under Regulation 18(3)(b) issued:	20th April 2010
Information under Regulation 18(3)(b) received:	21th June, 26th August, 8th October 2010
Site notice check:	20th March 2009
Site visit:	12th October 2010
Submission(s) Received:	One: Marine Institute, 19th August 2009

1. Background

1.1 Agglomeration

The Castletownbere Agglomeration constitutes the urban development of Castletownbere town; a coastal harbour town located by Bearhaven on northern shore of Bantry Bay. The town is the largest white fish port in Ireland and is also a key local services and tourist centre. Bearhaven (much of which is a designated area under the quality of Shellfish Waters Regulations, as amended) is approximately 14 km^2 in area and is protected from the exposed coastal seas of Bantry Bay by Bear Island. Bantry Bay is a regionally important fisheries resource and tourist amenity.

This licence application was made by Cork County Council (Western Division) which is the Water Services Authority (WSA) for the Castletownbere agglomeration.

1.2 Waste Water Collection System

The agglomeration's collection system does not convey storm water; a separate storm sewer runs through the town. It also operates entirely by gravity. Therefore, there are no storm water overflows or pumping stations located within the agglomeration. The applicant considers that the wastewater collected by this system is domestic and that the amount of industrial wastewater would be negligible. There are no EPA licensed facilities within the agglomeration. Fish processing, with a subsequent discharge to the harbour, is carried out on Dinish Island; however, Dinish Island and the discharge are outside the bounds of the agglomeration.

1.3 Waste Water Treatment

The existing wastewater treatment system for the agglomeration comprises of five septic tanks located throughout the town. However, less than 20% of the total load from the agglomeration is treated by this series of septic tanks; the remaining 80% of the load is discharged untreated into the harbour. This system gives rise to six separate discharge points and is summarised in table 1.3 below.

Table 1.3

	SW01	SW02	SW03	SW04	GW05	GW06
Discharge location	Inner Harbour	Brandyhall Bridge	Hospital	Cametringane	Drom North	Foildarrig
Discharge to	Harbour	Harbour	Harbour	Harbour	Soakpit	Soakpit
Discharge type	Coastal	Coastal	Coastal	Coastal	Ground	Ground
Treatment level	untreated	primary	primary	primary	primary	primary
Dwellings	Not available	10	37+hospital	8	6	6
Load (p.e.)	1050	30	160	24	18	18
Design p.e.	Not applicable	30	241	115	28	28

A new wastewater treatment plant (WWTP) is proposed for Castletownbere and is included in the Water Services Investment Programme 2010-2012 under the Schemes at Planning Stage. According to the applicant the scheme will be included in Cork County Council's Assessments of Needs for 2013-2015 to proceed to construction. Consultation with the DoEHLG Water Services Section indicates that the construction of the WWTP would be prioritised in light of the current discharge's proximity to, and the probable impact on, the designated Castletownbere Shellfish Waters, and would likely be commissioned in 2015. This date shall be used as a reference in setting any ELV's for proposed discharges.

1.4 Population Equivalent – Agglomeration

The population equivalent (p.e.) of the agglomeration was estimated at 1300. The p.e. for the purposes of this application is 2,000; being, at the time of application, the estimated p.e. at the end of the licence's lifetime. As the application is for 1,001 to 2,000 p.e. a review of the licence will be required to accommodate a loading of over 2,000 p.e.

1.5 Design Population Equivalent - WWTP

As previously referred to, the current treatment works only treat a portion of the agglomeration's total load. The total design p.e. of the five septic tanks is 250, with the remaining load of 1050 p.e. being discharged untreated to the harbour. It is stated in the application that the proposed new WWTP will cater for a population equivalence of 4,000.

1.6 Site Visit

A site inspection was undertaken on the 12th October 2010, followed by a meeting with Niall O'Mahony, Orla O'Brien and Ger Murphy of Cork County Council at their offices in Skibbereen, Co. Cork, to discuss and clarify issues arising from this licence application assessment, with particular regards to monitoring requirements and the progress of the proposed works.

2. Discharges to waters

2.1 Existing Discharges.

The primary discharge, SW01, discharges untreated effluent into the harbour below the high water mark. The first three secondary discharges, SW02, SW03 and SW03, are from septic tanks which all have outfalls into Castletownbere harbour. GW04 and GW05 are the two remaining secondary discharges. They are from two septic tanks serving the small council housing estates which discharge to groundwater via adjacent soak pits. (The main water supply in Castletownbere is from Glenbeg Lake, which is approximately seven km to the north of the town.)

2.2 Proposed Discharges.

According to the hydrodynamic study which forms part of the preliminary report, the favoured location for the new primary discharge is located further west along the shoreline at a point known as Doctor's Rock (See appendix). Storm water overflows in the upgraded sewerage scheme may be necessary. Condition 4.10 requires the licensee to submit to the Agency an assessment of the requirement for storm water overflows in the agglomeration. The design of any required SWO's shall be in accordance with in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995 and any other guidance as may be specified by the Agency. *Schedule A.3* of the RL requires that all current secondary discharges shall cease by 31st December 2015.

2.3 Discharges - Urban Waste Water Treatment Regulations

The existing (and proposed) discharges are to coastal waters from an agglomeration of less than 2,000 p.e. (1300). Under Article 7 of the Urban Waste Water Treatment Regulations (UWWT), 2001, the WSA is (for this agglomeration type and size) required to provide, what is defined therein as, 'Appropriate Treatment'. The WSA is not necessarily required to provide secondary treatment, and therefore, the discharge limits listed in part one of the second schedule in the above regulations do not automatically apply. Bearhaven is not designated a Sensitive Water, as listed in UWWT Regulations, as amended. Therefore, the requirements of Part Two of the Second Schedule do not apply.

'Appropriate Treatment' is defined in the UWWT Regulations as the: *"treatment of urban waste water by any process and/or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives and the relevant provisions of the Directive and of other Community Directives"*. The relevant directives, as transposed into Irish law, for this receiving water, are the Surface Waters Regulations 2009 and the Shellfish Waters Regulations 2006, as amended. Therefore, the discharge shall be regarded as appropriately treated provided the quality of the receiving waters is in compliance with Surface Waters Regulations and the Shellfish Regulations. Appropriate Treatment, therefore,

may include secondary or tertiary treatment, including disinfection. *Conditions 3.1, 3.3 and 5.2* of the RL requires the licensee to identify appropriate improvements to the sewerage system, including the waste water treatment plant, that are necessary to ensure all discharge(s) from the agglomeration contribute towards achieving at least good status in accordance with the European Communities Environmental Objectives (Surface Waters) Regulations 2009 and/or the European Communities Environmental Objectives (Groundwater) Regulations 2010, as well as any other relevant water quality objectives.

3. Receiving waters and impact

The waters of Castletownbere Harbour and Berehaven are designated as Coastal by the South Western River Basin District (SWRBD). Hence, for the purposes of this report, the assessment of the quality of the receiving water will be in the context of full salinity. The following table summarises the main considerations in relation to Berehaven of the primary discharge.

Table 3.0 Receiving waters

Characteristic	Classification	Comment
Receiving water name and type (for primary discharge)	Castletownbere Harbour, Bantry Bay, West Cork	Coastal Water (~35 psu). IE_SW_180_0000 Sheltered harbour opening to exposed coastal bay.
Resource use	Shellfish Harvesting	Mussels
Amenity value	Tourism	Ferry Point.
Applicable Regulations	Urban Waste Water Treatment Regulations 2001 (as amended) S.I. 254 of 2001 and S.I. 440 of 2004, SI 48 of 2010	No Sensitive Water designation.
	EC Environmental Objectives (Surface Water) Regulations 2009 S.I. 272 of 2009	Key Coastal Water Parameters: DO, DIN
	EC (Quality of Shellfish Waters) Regulations 2006 (as amended) S.I. 268 of 2006 and S.I. 55 of 2009	Shellfish Waters approx 1.4 km from existing primary discharge (using GIS). Key Parameter: Faecal Coliforms Key Pressures: Castletownbere WWTP, On-site WW Treatment Systems.
	EC Regulation 854/2004 and SI 335 of 2006	Seasonally classified A for Mussels from 11 Dec to 31 May; reverts to class B at other times (classification date: June 2010, SFPA).
Designations	Shellfish Waters	Castletownbere Shellfish Area and Pollution Reduction Programme (PRP).
WFD status	High	-
WFD Objective	Protect	Status Year: 2008
WFD Risk Category	at risk	Point Source: WWTP

3.1 Quality of Receiving Waters

According to the Transitional and Coastal Action Plan (TraC) published by the South Western River Basin District (SWRBD) in 2010, the overall status of the Castletownbere Harbour Transitional Waters is 'High', with the overall objective set as 'Protect' This overall status is not based on General Conditions (Dissolved Inorganic Nitrogen, Dissolved Oxygen etc) but on Biological Elements (Phytoplankton etc). The overall risk is set at 'at risk' on the basis of the Castletownbere agglomeration discharges.

According to the Castletownbere Pollution Reduction Programme (PRP) which was also issued in 2010, and in accordance with Shellfish Water Regulations, the results of monitoring undertaken for the purposes of these regulations indicate some faecal contamination within or in the vicinity of this shellfish area (This result is based on one sample from 2008, which is not sufficient for a definitive assessment, but is indicative nonetheless.). According to the Sea Fisheries Protection Authority, monitoring of shellfish flesh for the purposes of food hygiene indicates only low levels of faecal contamination in this shellfish area; the bivalve mollusc production areas in Castletownbere are seasonally classified as 'Class A' for the purposes of EC Regulation 854/2004. With regard to water quality, the PRP also states that results of WFD monitoring do not indicate any issues within / in the vicinity of this shellfish area.

Monitoring data supplied by the applicant was based on a single sample taken in October 2008, at a point 820 metres out into the harbour on the offshore side of Dinish Island (see appendix). The result for the key coastal General Condition parameter of Dissolved Inorganic Nitrogen (DIN) indicates non-compliance with the Surface Waters Regulations (There was no sample result for the other key General Condition parameter, Dissolved Oxygen.)

3.2 Impact of Discharge on Receiving Waters

For the purposes of determining impact, the value of the WSA monitoring data set is somewhat limited considering the monitoring point's remove from the primary discharge point It is further limited by virtue of the single sampling date. *Schedule B: Monitoring* and *Condition 4.14* of the Recommended Licence require the WSA to assess, and agree with the Agency, the requirements for ambient monitoring.

The Characterisation Report and PRP for Castletownbere states that the 'WWTP' is a key pressure affecting the Shellfish Waters. This suggests that the current discharges may be having an impact on the harbour; and possibly for the key parameter of faecal coliforms. The Castletownbere Characterisation Report and PRP state that there is also some microbiological shellfish flesh contamination in the general bay area; albeit seasonal and at low levels.

The preliminary report includes dispersion modelling for a number of proposed discharge locations. The report includes vector modelling which indicates that tidal movements seaward of Dinish Island are strong, and particularly so near the preferred proposed outfall (see appendix), providing good dispersion. The report concludes that secondary treated effluent (or tidal released untreated effluent) from the preferred discharge point would not have an adverse effect on the shellfish waters at the designated boundary. Some of the faecal coliform dispersion scenarios indicate poor bacteriological attenuation in the inner harbour. This would suggest that for the current discharge, a high bacteriological impact in the vicinity of the current discharge, but low at the shellfish waters boundary 1.7 km away (see appendix).

Conditions 5.6 and 5.7 of the RL require the WSA, in consultation with designated public authorities, to assess the discharge's impacts on the Shellfish Waters, as well as assess the requirements for disinfection, where appropriate.

No appropriate monitoring was submitted with application to determine the impact of the two groundwater discharges. Condition 3.3 of the RL specifies that the WSA shall take measures, as are necessary to ensure that no deterioration in the quality of the receiving waters shall occur as a result of any discharges. Schedule A.3 require these septic tanks and any

percolation areas should be in accordance within the *Wastewater Treatment Manual, Treatment Systems -Treatment Systems for Small Communities, Business, Leisure Centres and Hotels*, published by the Environmental Protection Agency. *Schedule A.3 of the RL* requires the WSA to cease the secondary discharges to ground upon completion of the proposed network upgrade or by the 31st December 2015 at the latest. These requirements are considered appropriate to ensure that best practice is applied to the disposal of wastewater, and that prior to the completion of the proposed new collection and treatment system, the septic tanks are properly maintained and providing basic primary treatment.

With the increased level of wastewater treatment required in the RL, on the basis of Shellfish Regulation requirements rather that those of the UWWT Regulations, and a more open discharge location, the proposed discharge is very likely to improve the quality of Castletownbere harbour water and further reduce the risk to the Shellfish Waters and the WFD objectives.

4. Monitoring

4.1 Discharge

Due to the onerous nature of sampling and analysing raw effluent, as well as considering the relatively low value of the subsequent analysis data, there is no requirement in the RL for monitoring the current primary or secondary discharges. (As indicated in section 3.2 above, proper maintenance of the septic tank should be sufficient to ensure optimum primary treatment, at least for the secondary discharges.) Upon completion of the proposed WWTP, monitoring shall be in accordance with *Schedule B.1* of the RL.

4.2 Ambient

An improved level of ambient monitoring may be beneficial for the harbour for the remainder of the current WWTP's lifetime, as well as for the proposed WWTP and discharge. This may not only be helpful in ensuring the WFD objective of 'no deterioration', but also helpful in protecting and improving the current quality of the Shellfish Waters. Monitoring data from the WFD or Shellfish Directive Programmes may be sufficient for this purpose. The WSA must assess the requirements for monitoring, as provided for in *Schedule B.4* and *Condition 4.14* of the Recommended Licence.

5. Combined Approach

The Waste Water Discharge Authorisation Regulations, 2007 (S.I. No. 684 of 2007) 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 (S.I. No. 254 of 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 gives effect to the principle of the Combined Approach as defined in S.I. No. 684 of 2007.

6. Programme of Improvements

A proposed wastewater treatment plant (WWTP) is to be constructed. The new WWTP willl provide preliminary and secondary treatment or their equivalent, to achieve the discharge standards set in Schedule One of the Urban Waste Water Treatment Regulations, 2001. (S.I. No. 254/2001). The WWTP shall also provide disinfection, if required (as per *Conditions 5.6 and 5.7* of the RL). The Recommended Licence specifies that the WWTP and ancillary works shall be complete by 22nd December 2020, to help Castletownbere Harbour achieve 'good status' by the TraC Action Plan deadline of 2021.

7. Compliance with EU Directives

In considering the application, regard was held for the requirements of Regulation 6(2) of the Waste Water (Discharge) Authorisation, Regulations, 2007 (S.I. No. 684 of 2007) notably:

Drinking Water Abstraction Regulations

Castletownbere agglomeration discharges to coastal waters. Therefore, there are no water abstraction points and the above regulations do not apply.

Sensitive Waters

Castletownbere Harbour is not designated as a Sensitive Water under the UWWT Regulations (Amendment) 2004. Therefore, the UWWT Regulations, 2001 limits for Total Phosphorous and Total Nitrogen limits do not apply.

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 water, while *Schedule A: Discharges,* specifies limit values for those substances contained within the wastewater discharge. Those limits specified in the RL are determined with the aim of restoring to good water quality status.

European Communities Environmental Objectives (Surface Water) Regulations 2009, S.I. No. 272 of 2009

Condition 5 and the ELV's set in *Schedule B* of the RD satisfy the requirements of the above regulations, in particular, Article 7 and the relevant parameters listed in Schedule 5 of said regulations.

European Communities Environmental Objectives (Groundwater) Regulations 2010, S.I. No. 9 of 2010

The requirements of *Schedule A.3* of the RD address the 'prevent or limit' objectives of the above regulations, in particular, Article 4 of said regulations.

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

The current and proposed WWTP, as required by Annex 1.D of the Urban Waste Water Treatment Directive, are required to provide appropriate treatment for the agglomeration. Castletownbere currently complies with the requirements of the Urban Waste Water Treatment Directive, in terms of the level of treatment provided (i.e. Appropriate Treatment is provided as all relevant receiving water objectives are met. See discussion on Appropriate Treatment in Section 2.3 above.). No ELV's or monitoring frequencies are specified in the Directive for an agglomeration of this type and size. The RL, as drafted, has regard to the requirements of the Urban Waste Water Treatment Directive.

Bathing Water Directive [2006/7/EC]

Castletownbere Harbour is not designated as a Bathing Water, although there is some bathing activity in the vicinity of the existing and proposed discharges. However, no further measures are required to comply with the above directive.

EC Freshwater Fish Directive [2006/44/EC]

The Castletownbere agglomeration discharges to coastal waters. Therefore, the above directive does not apply.

Shellfish Waters Directive [2006/113/EC]

The Castletownbere agglomeration discharges 1.7 km from the boundary of the Castletownbere designated Shellfish Waters. The Characterisation Report for Castletownbere includes the Castletownbere WWTP (septic tank) as a key pressure affecting the Shellfish Waters. This is reflected in the Castletownbere PRP, which has no requirement for upgrading the current WWTP as a basic measure. However, Conditions 4.14, 5.6 and 5.7 of the RL require the WSA, in consultation with designated public authorities, to further assess the discharge's impacts on the Shellfish Waters and to install UV disinfection where appropriate.

Dangerous Substances Directive [2006/11/EC]

The applicant has provided sampling results for 19 of the 19 dangerous substances in the primary discharge for the purposes of the licence application. The measured concentrations are not considered significant. The initial screen for the application is therefore considered sufficient and the agglomeration is compliant with the Dangerous Substances Directive.

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

There are no receiving water dependent SAC's or Special protected Areas (SPA's), in the vicinity of the harbour, Bearhaven or the entirety of Bantry Bay. Therefore, the above directives do not apply.

Cross Office Liaison

I consulted with Shane O'Boyle of the EPA's Office of Assessment in relation to the quality of the receiving waters. 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.

8. Submissions

One submission was received in relation to this licence from the Marine Institute (MI) on the 19th August 2009, and is briefly discussed below. However, the original submission should be referred to at all times for greater detail and expansion of particular points.

The MI states that the discharge standards for the proposed WWTP should be set with respect to Shellfish Waters Regulations. This has been discussed at length in Sections 2.3, 3.1, 3.2, and 5 of this IR and has been addressed in the RL by *Conditions 3.3,4. 14.4, 5.6, 5.7 and Schedule A.1*. The MI proposes that the impact of discharges should be determined in conjunction with other existing discharges and contamination sources. Such a determination would be addressed by *Conditions 4.14.4, 5.6, 5.7* of the R, as they require the assessment of the receiving waters, thereby encompassing all discharges to the receiving waters. The MI also states that licence conditions to be set to ensure no deterioration of Shellfish waters. Numerous conditions have been set in the RL to ensure no further deterioration of the receiving waters, including Shellfish Waters. These include *Conditions 3.1, 3.3, 5.6, 5.7*.

Furthermore, the MI states that the WSA should identify requirements to ensure compliance with the Shellfish Waters Regulations Guideline Values. Measures to ensure compliance with these regulations are included in *Conditions 4.14, 5.6, 5.7*. The MI further suggests that compliance with the regulations should be with whole shellfishery, rather than single monitoring point. All relevant conditions (3, 4.14. 5.6, 5.7 6) address waterbodies and not monitoring points. The MI believes that SWO events for proposed WWTP should be kept to a minimum. *Condition 4.10* requires that any SWOs are in compliance with relevant guidelines, thereby minimising overflow events. They also state that SWO and Emergency Overflow events should be recorded and reported to the relevant bodies. This is addressed by *Condition 6.4* of the RL. They also state that a Programme of Improvements should be developed to reduce or eliminate untreated discharges. This is discussed in section 6 of this report and is addressed in the RL by *Condition 5.2*.

The MI believes that there should be regular monitoring of influent and effluent for *F. Coli* and *E. Coli*. For reasons discussed in Section 4 above there shall be such monitoring for the current discharge. For the proposed WWTP monitoring requirements are addressed by *Condition 4.1* and Schedule B.1 of the RL. The MI also believes that the proposed discharge should not cause further deterioration of the Shellfish Waters. As discussed above, *numerous* conditions, including *3.1, 3.3, 5.6, 5.7* address this issue. Finally, the MI state that specific consideration should be given to establish risk of viral contamination to Shellfish Waters, with subsequent consideration for discharge disinfection. *Condition 5.6* of the RL requires the WSA to carry out a microbiological assessment (including viruses) of the Shellfish Waters.

In conclusion, it is considered all issues raised in the above submission are dealt with in this assessment of the application.

9. Charges

The RL sets an annual charge for the agglomeration at €1,504.92 and is reflective of the monitoring and enforcement regime being proposed for the agglomeration.

10. 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

Gavin Clabby

Office of Climate, Licensing and Resource Use

Appendix

Castletownbere primary discharge (SW01 Cast)

Secondary discharge to SW

Secondary discharge to GW

Current WSA Monitoring Point (SW01d)

Shellfish Regulations Monitoring Point

Agglomeration Boundary

Site of proposed primary discharge

Shellfish Water

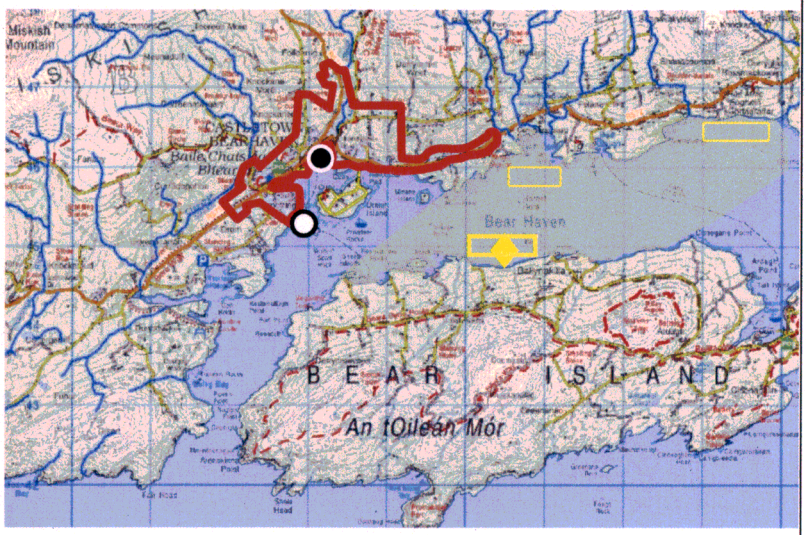
Licensed Aquaculture Beds (DAFF)

Strong Tidal Flow

Weak Tidal Flow

NB: Side of each square on map grids = 1 km

Map 1: Castletownbere Harbour, Bearhaven and Bear Island



Map 2: Detail of Castletownbere Harbour