



OFFICE OF CLIMATE, LICENSING, RESOURCES & RESEARCH

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	Dara Lynott, Director	
From:	Máire Buckley	Environmental Licensing Programme
Date:	3 rd July 2015	
RE:	Application for a Waste Water Discharge Licence from Irish Water , for the agglomeration named Bandon , Reg. No. D0136-01.	

Application & Agglomeration Details

Agglomeration Name:	Bandon
County:	Cork
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 2,001 to 10,000
Licence application received:	22 nd September 2008
Notices under Regulation 18(3)(b) ¹ issued:	21 st August 2009 & 20 th August 2010
Information under Regulation 18(3)(b) received:	02 nd November 2009 & 22 nd October 2010
Site notice check:	17 th October 2008
Site Visit:	06 th May 2015
Submissions Received:	<ol style="list-style-type: none"> 1. Clare Fitzgerald – 16th January 2014 2. Michael McPartland, IFI – 27th August 2014 3. Jason Nash, Bandon Angling Association – 6th November 2014
Design Population Equivalent:	20,000
Actual Population Equivalent:	8,200
Type of treatment:	Secondary
Wastewater treatment plant (WWTP) description:	The plant consists of primary settlement, followed by secondary treatment, where two thirds of the wastewater is treated by an activated sludge process and one third is treated by a percolating filter

¹ Waste Water Discharge (Authorisation) Regulations, 2007, as amended.

The original WWTP was constructed in the 1960s and was upgraded in 1993. The majority of the agglomeration is served by a combined sewer system. There is a further upgrade of the system serving Bandon planned, and is listed on the 2014-2016 Irish Water Improvement Programme as Bandon Sewerage Scheme - review scope & commence construction. This upgrade will apply to both the WWTP and the sewer network serving the Bandon agglomeration.

The WWTP accepts waste water from domestic, commercial and trade premises, including leachate from Derryconnell landfill (Cork County Council - W0089-02), which is imported via tankers. Approximately 80m³/day of this leachate is treated at the WWTP.

1. Discharges to waters

The following table outlines the main considerations in relation to discharges to waters from this agglomeration.

Table 1: Discharges to waters

Primary discharge point	
Receiving water name	River Bandon
Type of receiving water	Freshwater
Normal flow	1,476m ³ /day
Storm water overflows	
Storm water overflows	Yes (14)
Receiving water names	River Bandon – Freshwater (8) River Bridewell – Freshwater (6)
Emergency overflows	
Emergency overflow(s)	Yes (4) One at three of the four pumping stations; one at the WWTP

Schedule A: Discharges & Discharge Monitoring of the recommended licence (RL) specifies the Emission Limit Values (ELVs) to which the discharge from the Bandon agglomeration must conform. Monitoring of the discharges will take place as per this schedule of the RL.

2. Receiving waters and impact

The WWTP discharges into the River Bandon (WFD Code: SW_020_2230_2), which then flows into the transitional waters of the Upper Bandon Estuary (WFD Code: SW_080_0300) 5km downstream of the primary discharge point; into the Lower Bandon Estuary (WFD Code: SW_080_0100) 9.5km downstream of the primary discharge point; and into the coastal waters of Kinsale Harbour (WFD Code: SW_080_0000) 24km downstream of the WWTP.

The following table summarises the main considerations in relation to the River Bandon downstream of the primary discharge.

Table 2: Receiving waters

Characteristic	Classification	Comment
Receiving water name	River Bandon	WFD Code: IE_SW_20_2230_2
Designations	None However there are a number of designated areas downstream of the Primary Discharge Point	Designations downstream include: <ul style="list-style-type: none"> - Pearl Mussel location (not a designated pearl mussel habitat) ~ 2.75 km downstream - Nutrient sensitive estuary - Upper Bandon Estuary ~ 5km downstream - Kinsale Shellfish Area (PA2_0062) ~ 19km downstream - Sovereign Islands SPA (Site Code 004124) ~ 29 km downstream - Old Head of Kinsale SPA (Site Code 004021) 38km downstream
Receiving water monitoring stations	Bandon – Footbridge Bandon (EPA RS Code: RS20B020770) Bandon – French’s Wood (EPA RS Code: RS20B020850)	1.7km upstream of SW001 on River Bandon 1.85km downstream of SW001 on River Bandon
Biological quality rating (Q value)	Q4 (unpolluted) RS20B020700 (2012) Q4 (unpolluted) RS20B020900 (2012) Potentially eutrophic (2010-2012) (TW05003169BN1001)	7km upstream of WWTP on River Bandon 5km downstream of WWTP on River Bandon Upper Bandon estuary (transitional waters), 5km downstream of WWTP
WFD status	Good	Objective: To protect good status

The Bandon / Stick Water Management Unit Action Plan (WMUAP) identifies the WWTP in Bandon as a point pressure on the Bandon / Stick catchment.

Mass balance calculations were carried out using the monitoring information provided by the Office of Environmental Assessment (OEA). The mass balance calculations are based on the 95thile flow in the receiving water, the mean background concentration of each parameter in the receiving water, the normal effluent discharge rate and the maximum permitted concentration of the parameter in the effluent (Table 3).

The 95thile flow in the river at Bandon WWTP primary discharge point is 1.4m³/s.

Table 3: Mass Balance Calculations.

Parameter	Background Concentration (mg/l)	Proposed ELVs for discharge (mg/l)	Contribution from discharge (mg/l)	Predicted downstream concentration (mg/l)	Relevant standard (mg/l)
BOD	1.04	25	0.2204	1.2513	2.6 ^{Note 1}
Orthophosphate	0.021	3	0.0265	0.0473	0.075 ^{Note 1}
Total Ammonia	0.079	3	0.0265	0.1048	0.14 ^{Note 1}

Note 1: European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

The presence of the Freshwater Pearl Mussel (*Margaritifera margaritifera*) is noted downstream of the WWTP discharge point. Following consultation with the National Parks & Wildlife Service (NPWS), good status water quality standards were used in the mass balance calculations. NPWS have not deemed this part of the River Bandon a suitable habitat for the pearl mussel. It is noted that this part of the River Bandon is not a designated Freshwater Pearl Mussel habitat under the Environmental Objectives (Freshwater Pearl Mussel) Regulations, S.I. No. 296 of 2009.

Whilst there is a designated nutrient sensitive area downstream (Nutrient sensitive estuary - Upper Bandon Estuary) of the discharge point, the p.e. of the agglomeration is less than 10,000 p.e., therefore, ELVs for Total Phosphorus and Total Nitrogen were not applied in this case.

The European Communities Environmental Objectives (Surface Water) Regulations, 2009, as amended, set environmental quality objectives for the receiving water for orthophosphate (0.075mg/l), ammonia (0.14mg/l) and BOD (2.6mg/l). An emission limit value of 3 mg/l is recommended for orthophosphate, 3mg/l for ammonia and 25mg/l for BOD in the RL. The limits are set based on the mass balance calculations. The WWTP has conventional activated sludge and trickling filters which can achieve standards of 15 – 25 mg/l for BOD, 4.5 – 9 mg/l for orthophosphate and 2 – 10 mg/l for ammonia in the discharge. Based on this information the emission limit values for BOD and ammonia in the RL are achievable with the current treatment. However, the applicant will need to carry out improvement works in order to achieve the orthophosphate ELV. The ELV for BOD shall apply from date of grant of licence. The ELVs for orthophosphate and ammonia will apply from 31/12/2015. This is to ensure that the River Bandon maintains good status by 2015, in accordance with the requirements of the European Communities Objectives (Surface Water) Regulations, 2009, as amended.

Schedule C: Specified Improvement Programme of the RL requires the provision of nutrient removal and for appropriate works be completed to ensure compliance with the emission limit values as set out in *Schedule A: Discharges & Discharge Monitoring* of the RL by 31/12/2015.

The RL has set emission limit values (ELVs) 25 mg/l for cBOD, 125 mg/l for chemical oxygen demand (COD), 35 mg/l for suspended solids (SS). These limits are in accordance with UWWT Regulations, 2001, as amended.

As the WWTP accepts 80m³/day of leachate from a landfill, the RL includes a condition requiring the applicant to put in place a management system for the treatment of this leachate.

3. Ambient Monitoring

Schedule B: 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: 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.

4. Combined Approach

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

5. Programme of Improvements

There is a programme of improvements in place for the agglomeration. There is an upgrade of the WWTP / sewer line serving Bandon planned, and is listed in the 2014-2016 Irish Water Improvement Programme. The works to be carried out include an upgrade of the WWTP and network serving the Bandon agglomeration. The RL, as drafted, requires that appropriate works be completed by 31/12/2015 in order to ensure compliance with the emission limit values as set out in *Schedule A: Discharges & Discharge Monitoring of the RL*.

6. Compliance with EU Directives

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

Table 4: Compliance with EU Directives/Regulations

Compliance with Directives/Regulations	Description and Conditions in RL
Urban Waste Water Treatment Directive [91/271/EEC]	Compliant in 2013.
Water Framework Directive [2000/60/EC]	Good status to be protected (2015).
EC Environmental Objectives (Surface Water) Regulations 2009 (S.I. No. 272 of 2009), as amended	Schedule A of RL sets ELVs to maintain the environmental quality objectives.
Drinking Water Abstraction Regulations	There is a drinking water abstraction 4.5km downstream. Condition 4 requires risk assessment for the protection of downstream abstraction points.
Bathing Water Directive [2006/7/EC]	No bathing waters present.
Dangerous Substances Directive [2006/11/EC]	Condition 4 requires screening for priority substances.
Environmental Impact Assessment Directive [85/337/EEC]	An EIS was not required for Bandon WWTP.
Environmental Liability Directive	Condition 7.2 of RL.

Birds Directive [2009/147/EC] & Habitats Directive [92/43/EEC]

The Bandon WWTP does not discharge directly into any SACs² or SPAs³. However, the Sovereign Islands SPA (Site Code 004124) and the Old Head of Kinsale SPA (Site Code 004021) are located approximately 29 km and 38km downstream of the discharge point respectively. These sites are designated as SPAs under the Birds Directive for the conservation of wild birds. A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects, is likely to have a significant effect on a European Sites. In this context, particular attention was paid to the European sites at the Old Head of Kinsale SPA, and the Sovereign Islands SPA. The Agency considered, for the reasons set out below,

that the activity is not directly connected with or necessary to the management of the site as a European site and that it can be excluded, on the basis of objective information, that the activity, individually or in combination with other plans or projects will have a significant effect on a European site, and accordingly the Agency determined that an Appropriate Assessment of the activity was not required.

The distance from the primary discharge to the boundary of the nearest downstream European sites (Sovereign Islands SPA, and Old Head of Kinsale SPA); the water quality status of the downstream receiving waters under the Water Framework Directive (Bandon River (IE_SW_20_2230_2) - Good Status, Kinsale Harbour (IE_SW_080_0000) - Good Status, Western Celtic Sea (IE_SW_010_0000) - High Status)); and the level of treatment provided at the waste water treatment plant (secondary treatment), support the assessment that Appropriate Assessment is not required.

7. Cross Office Liaison

Advice and guidance issued by the Waste Water Technical Working Group (WWTWG) was followed in the assessment of this application. Advice and guidance issued by the WWTWG 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 WWTWG for use by licensing inspectors in the assessment of wastewater discharge licence applications.

8. Submissions

Three submissions were received in relation to this licence. The submissions received were submitted by: Claire Fitzgerald; Inland Fisheries Ireland; and Bandon Angling Association. The issues raised in the submissions are summarised in below., however, the original submission should be referred to at all times for greater detail and expansion of particular points.

1- Claire Fitzgerald

In the submission, Claire Fitzgerald attributes recent health complaints in her family (including bronchial infections, and ear / nose / throat infections) to the proximity of her house to the WWTP. She also states that her house and garden are at times unusable due to the odours from the WWTP. She further states that she has been informed by employees at the WWTP that it is not functioning normally and repairs are not being made for monetary reasons. She objects to the granting of a licence until the WWTP is functioning correctly.

² 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.

³ 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.

The legislation governing this licence relates specifically to, and is restricted to, the regulation and control of waste water discharges from the agglomeration. Therefore any odour issues that may be associated with the waste water works including the treatment plant cannot be addressed by this licence. Schedule C of the RL, as drafted, requires the applicant comply with the ELVs. A copy of this submission has been forwarded to the EPA's Office of Environmental Enforcement, and is being treated as a complaint.

2- Inland Fisheries Ireland

In their submission, Inland Fisheries Ireland provided a summary table of water monitoring carried out by them in the River Bandon upstream and downstream of the WWTP, noting increased nutrients in the river, highlighting phosphorus. The submission concludes with a request that the WWTP be licenced urgently, to ensure remedial measures are put in place to minimise any nutrient loading to the river.

Once the discharge is licenced, the applicant will have to comply with the conditions in the RL, and with the ELVs in the licence, including orthophosphate. Whilst there is no specific ELV in the RL for Phosphorus, in order to meet the other ELVs, the applicant is required to provide improvement works including nutrient removal. Schedule C of the RL, as drafted, requires the applicant to comply with the ELVs, which have been set in order to ensure the receiving water maintains good status, in accordance with the European Communities Objectives (Surface Water) Regulations, 2009.

3- Bandon Angling Association

In their submission, Bandon Angling Association question the effectiveness of the WWTP. They include monitoring results at various locations along the receiving water, the River Bandon. They provide monitoring and photographs of the river close to the primary discharge pipe which appear to demonstrate discolouration of the river in the vicinity of the primary discharge outflow pipe. They ask that the issues be addressed during the licensing process and that the WWTP be upgraded to provide tertiary treatment.

Once the discharge is licenced, the applicant will have to comply with the conditions in the RL, and with the ELVs set by the licence, including ammonia and ortho-phosphate. Schedule C of the RL, as drafted, requires the applicant to comply with the ELVs, which have been set in order to ensure the receiving water maintains good status, in accordance with the European Communities Objectives (Surface Water) Regulations, 2009. In order to specifically address the issues raised in this submission, regarding the provision of tertiary treatment, the applicant is required to complete improvement works, including nutrient removal, in order to meet the ELVs.

9. Charges

The RL sets an annual charge for the agglomeration at €3,016.50 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.

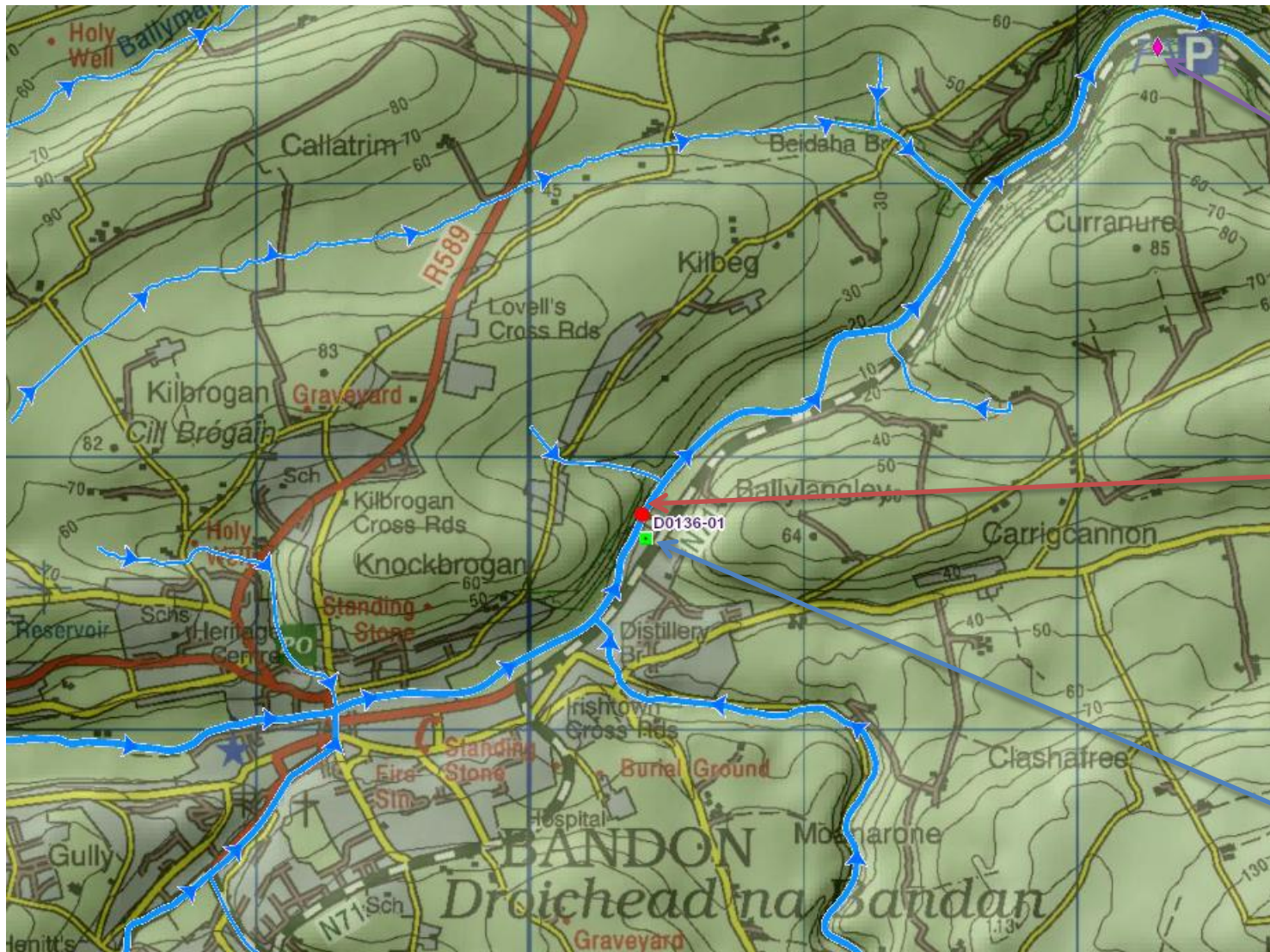
Signed



Máire Buckley

Environmental Licensing Programme

Appendix 1: Map showing location of Bandon WWTP and associated primary discharge point.



Pearl Mussel Location,
2.75km Downstream of
Discharge Point

D0136-01 Primary
Discharge Point

D0136-01 WWTP