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 Signed: Sonia Smith Date: 15/04/2014

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	Dara Lynott, Director	
From:	Loretta Joyce	Environmental Licensing Programme
Date:	15 th April 2014	
RE:	Application for a Waste Water Discharge Licence from Irish Water for the Ballingeary agglomeration, Co. Cork, Reg. No. D0431-01.	

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 500 to 1000
Licence application received:	22/06/2009
Notices under Reg. 18(3)(b) issued:	31/05/2010
Information under Reg.18(3)(b) received:	23/06/2010, 30/09/2010
Notices under Reg. 12 issued:	22/07/2009
Information under Reg. 12 received:	15/07/2011
Site notice check:	13/07/2009
Site visit:	17/10/2013
Submissions Received:	None

1. Agglomeration

This application relates to the Ballingeary agglomeration in County Cork. The application was originally made by Cork County Council and subsequently transferred to Irish Water on 1st January 2014 under the Water Services (No. 2) Act 2013.

The Ballingeary agglomeration had a population equivalent (p.e.) of 650 in 2012 and the design capacity of the waste water treatment plant (WWTP) is 600p.e. A projected increase of 20% is used in the mass balance calculation below. There are no identified sources of industrial waste water in the agglomeration.

The agglomeration is served by a primary level WWTP and consists of a septic tank built in the 1930s. There is no flow meter or final effluent composite sampler in place at the WWTP. The applicant stated that when the Bunsheelin River floods, the septic tank is completely covered which can cause a backflow in the pipe network and the overflow of raw sewage on to the road.

The applicant has prepared a preliminary report for an upgraded WWTP at a new location, discharging to the River Lee, with a design capacity of 1,300 p.e and effluent standards of 20mg/l BOD, 30mg/l Suspended Solids, 1 mg/l Total Phosphorus and 10mg/l Ammonia. The proposed WWTP would consist of inlet works, 2 no. diffused aeration tanks, 2 no. final settlement tanks, phosphorus dosing facility, storm water

holding tank and sludge thickening. The preliminary report also concluded that the existing sewer network requires upgrading. Funding has not yet been secured for the upgrade. Ballingearry Sewerage Scheme was listed on the Water Services Investment Programme (WSIP) 2007 – 2009 but is not listed on WSIP 2010 - 2012. The licence applicant did not identify the proposed primary discharge point to the River Lee, therefore the proposed emission point cannot be assessed or authorised by this recommended licence. The licensee shall apply for a licence review prior to relocation of the primary discharge to the River Lee.

2. Discharges to waters

Primary Discharge

The primary discharge (SW001) is the piped outfall from the septic tank to the Bunsheelin River, 50m from the septic tank. At 95%ile flow in the Bunsheelin River (0.099 m³/sec), there are approximately 26.8 dilutions available for the projected normal waste water discharge (0.0037 m³/day). The 95%ile river flow was provided by the Office of Environmental Assessment. The applicant's 2009 treated effluent monitoring results are shown in Table 1. The results show that the WWTP performs to a very poor standard with little/no treatment taking place.

Table 1. WWTP monitoring results 2009 (average based on 1 grab sample)

Parameter	BOD (mg/l)	COD (mg/l)	Suspended solids (mg/l)	Ammonia (mg/l)	Orthophosphate (mg/l)
Effluent result	320	695	250	-	10

Secondary Discharges

There are no secondary waste water discharges from the agglomeration.

Storm water overflows

There is one storm water overflow (SW002) from the septic tank, which discharges to a man-made ditch adjacent to the septic tank.

Emergency overflows

There are no emergency overflows from the agglomeration.

3. Receiving waters and impact

The receiving water is the Bunsheelin River which is located in the South Western River Basin District. The following table summarises the main considerations in relation to the receiving waters.

Table 2. Receiving waters

Characteristic	Description	Comment
Receiving water name and type	Bunsheelin River IE_SW_19_927	Converges with the River Lee, 140m downstream
Relevant designations within 10km	River Lee, 140m d/s is a Salmonid River	
Drinking water abstraction within 10 km d/s	None.	
EPA monitoring stations & Biological quality rating (Q value)	None.	
WFD status	Good	2009

WFD Risk Category	1a, water body at significant risk of failing objectives.	2008
WFD Objective	Protect good status	2015
WFD protected areas	RPA drinking water groundwater	

Ambient water quality monitoring data for the Bunsheelin River supplied by the applicant in the licence application is summarised in Table 3 below. The results, based on only one sample, show that Ammonia levels downstream of the primary discharge deteriorate and do not comply with the good status water quality standards in the Environmental Objectives Regulations 2009, as amended.

Table 3. Water Quality in the Bunsheelin River in 2009 (based on only 1 sample)

Parameter (mg/l)	aSW-1u, 340m u/s of SW001	aSW-1d, 70m d/s of SW001	Water Quality Standards ^{Note 1}
BOD	1	1	≤ 1.5 mg/l (mean)
Orthophosphate (as P)	<0.05	<0.05	≤ 0.035 mg/l (mean)
Ammonia (as N)	<0.1	0.1	≤ 0.065 mg/l (mean)

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

Table 4 below summarises the mass balance calculations which show the impact of the primary discharge on the receiving water at a projected loading of 780 p.e. (650 p.e. plus 20%). The calculations use the 'notionally clean river' approach (a hypothetically clean stretch of river) provided by the Office of Environmental Assessment.

Table 4. Mass Balance Calculations

Parameter (mg/l)	Proposed ELVs for Primary discharge	Contribution from primary discharge	Contribution from notionally clean background ^{Note 1}	Predicted Downstream concentration	Water Quality Standards ^{Note 2}
BOD	20 (from 2015)	0.72	0.25	0.97	≤ 2.6
Orthophosphate (as P)	1.5 (from 2015)	0.054	0.005	0.059	≤ 0.075
Ammonia (as N)	2 (from 2015)	0.072	0.008	0.080	≤ 0.14

Note 1: The notionally clean background concentrations are 0.26 mg/l BOD, 0.005 mg/l ortho-phosphate (as P) and 0.008 mg/l ammonia (as N).

Note 2: Good status under the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

The calculations show that the predicted downstream concentrations of BOD, Orthophosphate as P and Ammonia as N, based on the ELVs included in the RL from 22nd December 2015, would comply with the good status standards in the Environmental Objectives Regulations 2009, as amended. However, WWTP upgrade is required to meet these ELVs, as identified above a new WWTP has been proposed

by the applicant. Interim emission limit values for Orthophosphate and Ammonia prior to 22nd December 2015 are not specified in the RL as there is only primary treatment at the existing WWTP.

The RL proposes an interim percentage reduction of at least a 20% reduction of the BOD in the incoming waste water and of at least a 50% reduction of the Suspended Solids in the incoming waste water. The RL requires ELVs of 20mg/l BOD, 125mg/l COD, 30mg/l Suspended Solids, 1.5mg/l Orthophosphate as P and 2mg/l Ammonia, from 22nd December 2015.

The proposed ELVs are similar to the proposed ELVs in the preliminary report prepared by Cork County Council, however the Ammonia ELV is significantly more stringent. The stringent ammonia ELV is deemed necessary as the licence assessment is based upon the Bunsheelin River, rather than the River Lee as proposed in the preliminary report. If the licensee proposes to relocate the primary discharge to the River Lee it would be necessary for a licence review application to be submitted to the Agency.

Ballingeary WWTP is identified as a point pressure in the Upper Lee Water Management Unit Action with risks related to 'insufficient existing assimilative capacity (BOD)'.

4. Site Visit

I visited the Ballingeary agglomeration on 17/10/2013 and met with a representative of Cork County Council. I visited the WWTP and observed the primary discharge point and receiving waters.

5. Ambient Monitoring

Schedule B.2 Receiving Water Monitoring of the RL specifies quarterly monitoring of the Bunsheelin River for a number of specified parameters.

- Upstream: The location identified by Cork County Council is aSW-1u (grid ref. 115132E 067194N) located approximately 340m upstream of SW001, has been included in *Schedule B.2* of the RL as a new National Monitoring Station (Station Code: RS19B050940).

Downstream: The location identified by Cork County Council is aSW-1d (grid ref. 115231E 066809N) approximately 70m downstream of SW001, has been included in *Schedule B.2* of the RL as a new National Monitoring Station (Station Code: RS19B050990).

6. Programme of Improvements

The applicant has prepared a proposal for an upgraded WWTP as discussed above. A new WWTP will be required to achieve ELVs of 20mg/l BOD, 30mg/l Suspended Solids, 1.5mg/l Orthophosphate and 2mg/L Ammonia from 22nd December 2015.

7. 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 5. Compliance with EU Directives / Regulations

Compliance with Directives/Regulations	Description and Conditions in RL
Urban Waste Water Treatment Directive [91/271/EEC]	Appropriate treatment was required by 31st December 2005.
Water Framework Directive [2000/60/EC]	Protect Good Status
EC Environmental Objectives (Surface Water) Regulations 2009 (S.I. No. 272 of 2009), as amended	Schedule A of RL sets ELVs to contribute towards achieving good status water quality standards
Drinking Water Abstraction Regulations	No drinking water abstractions present.
EC Freshwater Fish Directive [2006/44/EC]	River Lee 140m downstream of SW001 Bunsheelin is a designated salmonid river. Schedule A of RL sets ELV for Suspended Solids to comply with S.I. No. 293/1988.
Bathing Water Directive [2006/7/EC]	No bathing waters present
Shellfish Waters Directive [2006/113/EC]	No shellfish 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 Ballingearry WWTP.
Environmental Liability Directive	Condition 7.2 of RL

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

The Gearagh SAC (Site Code: 000108) and The Gearagh SPA (Site Code: 004109) are located 19km downstream of SW001.

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 Site(s). In this context, particular attention was paid to the European Sites at The Gearagh SAC (Site Code: 000108) and The Gearagh SPA (Site Code: 004109) and the Agency considered, for the reasons set out below, that the activity is not directly connected with or necessary to the management of those sites as European Sites and that it cannot be excluded, on the basis of objective scientific information following screening under this Regulation, that the activity, individually or in combination with other plans or projects, will have a significant effect on a European Site and accordingly determined that an Appropriate Assessment of the activity was required. It has been determined that the activity does have the potential for significant effects on a European Site due to poor effluent quality.

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 activity will not adversely affect the integrity of a European Site(s) in particular The Gearagh SAC (Site Code: 000108) and The Gearagh SPA (Site Code: 004109), having regard to its conservation objectives and will not affect the preservation of those sites at favourable conservation status.

In coming to this conclusion, the Agency is satisfied that it has identified all aspects of the activity which can, by themselves or in combination with other plans or projects, affect the conservation objectives of a European Site in particular The Gearagh SAC (Site Code: 000108) and The Gearagh SPA (Site Code: 004109), and is certain, in the light of the best scientific knowledge in the field, that the activity will not, if carried

out in accordance with this Recommended Licence and the conditions attached hereto, have lasting adverse effects on the integrity of those sites, will not hinder the preservation of those sites at a favourable conservation status, and will not hinder the lasting preservation of the constitutive characteristics of those sites that are connected to the presence of the habitat types, flora and fauna, whose preservation was the objective justifying the designation of those sites, will respect the strict protection of animal types and plant types listed in Annex IV of Council Directive 92/43/EEC, in particular the following bird and plant types, Whooper Swans, Wigeon, Teal and Mallard, Wood Club-rush, Bird Cheery, Buckthorn and Rough Horsetail, and will not cause any disturbance to those species or any deterioration in their conservation status.

The Agency is satisfied that no reasonable scientific doubt remains as to the absence of such effects for the following reasons: the distance from the identified European Sites; the RL requires WWTP upgrade and sets stringent ELVs which are applicable from 22nd December 2015, to contribute towards good status water quality standards required by the Environmental Objectives Regulations 2009, as amended; the RL requires quarterly ambient water quality monitoring and the limited volume of the discharge.

9. Submissions

No submissions were received in relation to this licence application.

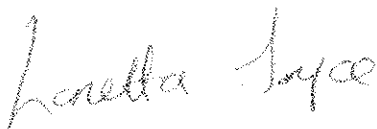
10. Charges

The RL sets an annual charge for the agglomeration at €2,962.77 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



Loretta Joyce
Inspector
Environmental Licensing Programme

Figure 1.0. Ballygeary Agglomeration D0431-01

