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This memo has been cleared for submission to the Director by Senior Inspector, Patrick Byrne
Signed: Patrick Byrne 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 Doneraile & Environs agglomeration, Co. Cork, Reg. No. D0300-01.	

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 1,001 to 2,000
Licence application received:	27/02/2009
Notice under Regulation 18(3)(b) issued:	22/12/2009, 30/04/2010, 15/07/2010
Information under Reg.18(3)(b) received:	01/06/2010, 30/07/2010, 04/07/2011
Site notice check:	20/03/2009
Site visit:	05/03/2014
Submissions Received:	None

1. Agglomeration

This application relates to the Doneraile & Environs 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 The application was originally made by Cork County Council and subsequently transferred to Irish Water on 1st January 2014 under the Water Services (No. 2) Act 2013.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 Doneraile & Environs agglomeration had a population equivalent (p.e.) of 941 in 2012. A projected increase of 20% is used in the mass balance calculations below. There are no identified sources of industrial waste water in the agglomeration.

The agglomeration is served by a secondary level WWTP, under a design, build, operate (DBO) contract, commissioned in 2009 with a design capacity of 1,680 p.e. The WWTP consists of inlet works, two no. automatic screens, grit trap, balance tank, two no. Sequencing Batch Reactors (SBR) and a picket fence thickener. There is chemical dosing for phosphorus removal. There is a flow meter and final effluent composite sampler in place at the WWTP.

2. Discharges to waters

Primary Discharge

The primary discharge (SW001) is the piped outfall from the WWTP to the Awbeg River, adjacent the WWTP. At 95%ile flow of the Awbeg River (0.97m³/sec), there are

approximately 244 dilutions available for the projected normal waste water discharge (0.0040m³/day). The estimated 95%ile river flow was provided by the Office of Environmental Assessment. The applicant's 2012 treated effluent monitoring results are shown in Table 1, along with the WWTP design standards.

Table 1. WWTP monitoring results 2012 (average based on 6 samples)

Parameter	BOD (mg/l)	COD (mg/l)	Suspended solids (mg/l)	Ammonia (mg/l)	Orthophosphate (mg/l)
Average effluent	4	17	8	-	-
WWTP Design standards	25	35	-	-	2 (Total P)

Secondary Discharges

There are no secondary waste water discharges from the agglomeration.

Storm water overflows

There is one storm water overflow, SW002, at the inlet to the WWTP which discharges via the primary discharge, SW001.

Emergency overflows

There are no emergency overflows in the agglomeration.

3. Receiving waters and impact

The receiving water is the Awbeg 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	Awbeg River IE_SW_18_2677	
Relevant designations within 10km	SAC Site Code: 002170 Blackwater River (Cork/Waterford) D0303-01 Buttevant (1,001 to 2,000 p.e.) A0331-01 Shanballymore (<500 p.e.)	SW001 discharges directly into the SAC 8.1km downstream of SW001 7.6km downstream of SW001
Drinking water abstraction within 10 km d/s	Doneraile/Shanballymore borehole (groundwater) 0500PUB1104	7.2km east of SW001, adjacent to Awbeg River Risk of impact on abstracted water is unlikely as SW001 would be diluted by river water and filtered through soil/subsoil before entering borehole.
EPA monitoring stations & Biological quality rating (Q value)	U/s station RS18A050900 4.5km u/s of SW001 (tributary converges upstream of SW001)	Q3-4 in 2012

	D/s station RS18A051100 6.5km d/s of SW001 (tributaries converge downstream of SW001)	Q4 in 2012
WFD status	Moderate	2011
WFD Risk Category	1a, water body at significant risk of failing objectives	2008
WFD Objective	Restore good status	2021
WFD protected areas	RPA drinking water groundwater	

Ambient water quality monitoring data for the Awbeg River supplied by the applicant in accordance with the Water Framework Direction is presented in Table 3 below. The results show that BOD, Orthophosphate and Ammonia levels downstream of the primary discharge comply with the good status water quality standards in the Environmental Objectives Regulations 2009, as amended.

Table 3. Water Quality in the Awbeg River in 2013

Parameter (mg/l)	RS18A050990 120m u/s of SW001 1 sample	RS18A051000 130m d/s of SW001 1-4 samples	Water Quality Standards ^{Note 1}
BOD	8.7	0.5	≤ 1.5 mg/l (mean)
Orthophosphate (as P)	0.028	0.026	≤ 0.035 mg/l (mean)
Ammonia (as N)	0.023	0.022	≤ 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 1,129.e. (941p.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	25	0.10	0.26	0.36	≤ 2.6
Orthophosphate (as P)	3	0.012	0.005	0.017	≤ 0.075
Ammonia (as N)	5	0.02	0.008	0.028	≤ 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

date of grant of licence, would comply with the good status standards in the Environmental Objectives Regulations 2009, as amended.

The RL proposes ELVs of 25mg/l BOD, 3mg/l Orthophosphate as P and 5mg/l Ammonia as N from date of grant of licence. SBRs can achieve 2-5mg/l Ammonia as N indicating that an ELV of 5mg/l Ammonia as N is achievable. There is chemical dosing for phosphorus removal at the WWTP and the design effluent standard of the WWTP is 2mg/l Total Phosphorus indicating that an ELV of 3mg/l Orthophosphate can be achieved.

4. Site Visit

I visited the Doneraile and Environs agglomeration on 05/03/2014 and met with a representative of Irish Water. 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 Awbeg River for a number of specified parameters.

- Upstream: The location identified by Cork County Council is aSW-1u (grid ref. 160157E 107550N) located approximately 120m upstream of SW001, is a National Monitoring Station (Station Code: RS18A050990) and has been included in *Schedule B.2* of the RL.
- Downstream: The location identified by Cork County Council is aSW-1d (grid ref. 160604E 107394N) approximately 410m downstream of SW001, has been included in *Schedule B.2* of the RL, as a new National Monitoring Station (Station Code: RS18A051010).

6. Programme of Improvements

There are no planned improvements proposed by the applicant for Doneraile & Environs WWTP. The ELVs proposed in the RL are considered achievable without plant upgrade or improvement.

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
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Urban Waste Water Treatment Directive [91/271/EEC]	Appropriate treatment was required by 31st December 2005.
Water Framework Directive [2000/60/EC]	Restore 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	Doneraile/Shanballymore borehole (groundwater) 0500PUB1104, 7.2km east of SW001. Risk of impact is unlikely.
EC Freshwater Fish Directive [2006/44/EC]	No salmonid waters present.
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 Doneraile WWTP.
Environmental Liability Directive	Condition 7.2 of RL

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

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 Blackwater River (Cork/Waterford) (SAC Site Code: 002170) and 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 scientific 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 is not required.

It has been determined that the activity does not have the potential for significant effects on a European Site due to the significant dilution available in the receiving water and the volume and quality of the effluent 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 €4,152.18 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

Loretta Joyce
Inspector
Environmental Licensing Programme

Figure 1.0. Doneraile & Environs Agglomeration D0300-01

