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Office of
LICENSING & RESOURCE USE.

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	Dara Lynott, Director
From:	Loretta Joyce Environmental Licensing Programme
Date:	9 July 2013
RE:	Application for a Waste Water Discharge Licence from Cork County Council for the Glanworth agglomeration, Reg. No. D0450-01.

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 Regulation 18(3)(b) issued:	31/05/2010
Information under Regulation 18(3)(b) received:	02/07/2010, 27/07/2010, 04/07/2011
Site notice check:	10/07/2009
Site visit:	14/05/2013
Submissions Received:	None

1. Agglomeration

This application relates to the Glanworth agglomeration in County Cork. The agglomeration had a population equivalent (p.e.) of 607 in 2011 and the design capacity of the WWTP is 800 p.e. A projected increase of 20% is used in the mass balance below. There are no identified sources of industrial waste water in the agglomeration.

The WWTP, constructed in 2001 consists of inlet works, grit trap, automatic screen, a Rotating Biological Contactor (RBC) package plant consisting of two units, designed to produce Royal Commission standard 25:35 BOD: Suspended Solids, and a storm water holding tank (a pre-existing septic tank). The package plant consists of primary settlement, aerobic biofilm treatment and final settlement. There is no chemical dosing for phosphorus removal.

The applicant had commenced initial planning work on an expansion of the WWTP but no funding has been secured to proceed with the upgrade at present.

2. Discharges to waters

Primary Discharge

The primary discharge (SW-1) is the gravity outfall from the WWTP to the River Funshion, adjacent to the WWTP. At 95%ile flow in the river (1.8 m³/sec), there are approximately 966 dilutions available for the projected normal waste water discharge (0.0019m³/sec). The 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	82	224	76	-	-
WWTP Design standards	25	-	35	-	-

Secondary Discharges

There are no secondary waste water discharges from the agglomeration.

Storm water overflows

There is one storm water overflow (SWO) at the WWTP and it discharges to the River Funshion downstream of the primary discharge. The storm water holding tank is fitted with a screened overflow discharge. Condition 4 requires the storm water overflow to comply with the criteria for storm water overflows, as set out in the DoECLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995.

Emergency overflows

There are no emergency overflows in the agglomeration.

3. Receiving waters and impact

The River Funshion forms part of 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	River Funshion IE_SW_18_1836	River Funshion flows into River Blackwater, 10.7km d/s
Relevant designations within 10km		10.7km d/s Blackwater (Cork/Waterford) SAC, Site Code 002170 Blackwater Callows SPA, Site Code 004094
Drinking water abstraction within 10 km d/s	Groundwater abstraction, Downing Bridge borehole, PA1-0500PUB1206	8km d/s, adjacent River Funshion
EPA monitoring stations & Biological quality rating (Q value)	U/s station RS18F050800 located 30m u/s D/s station RS18F050820 located 1.7km d/s	Upstream Q4 in 2012 Downstream Q4-5 in 1990

	D/s station RS18F050900 located 4.2km d/s (tributary joins u/s of this station)	Downstream 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	Exemption until 2021
WFD protected areas	RPA drinking water groundwater	

Ambient water quality monitoring data for the River Funshion provided by the Local Authority in accordance with the Water Framework Directive and as part of the licence application is summarised in Table 3 below. The results show that Ammonia as N levels deteriorate downstream of the primary discharge and do not comply with the good status water quality standards specified in the European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended. However, the results are based on a limited number of samples, 4-8 samples and on different years, 2008, 2009 and 2012.

Table 3. Water Quality in River Funshion

Parameter	RS18F050800 30m u/s of SW001 (4 samples in 2012)	aSW1-d 4km d/s of SW001 (5-8 samples in 2008-2009)	Water Quality Standards Note 1
BOD	2.3	0.9	≤ 1.5 mg/l (mean)
Orthophosphate (as P)	0.059	0.058	≤ 0.035 mg/l (mean)
Ammonia (as N)	0.022	0.1025	≤ 0.065 mg/l (mean)

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

Table 4 below summarises the mass balance calculations which show the contribution from the primary discharge on the receiving water at a projected loading of 728 p.e. (607 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 <small>Note 1</small>	Predicted Downstream concentration	Water Quality Standards <small>Note 2</small>
BOD	25	0.026	0.26	0.29	≤ 2.6
Orthophosphate (as P)	3	0.003	0.005	0.008	≤ 0.075
Ammonia (as N)	10 (interim)	0.010	0.008	0.018	≤ 0.14
	5 (from 2019)	0.005		0.013	

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 would comply with the good status standards in the Environmental Objectives Regulations 2009, as amended, based on an ELV of 25mg/l BOD, 3mg/l Orthophosphate as P and 5mg/l Ammonia as N.

The RL proposes an ELV of 25mg/l BOD from date of grant of licence which is the design standard for the WWTP. While the average BOD in the effluent was 82mg/l in 2012, it ranged from 24mg/l to 162mg/l. Plant control and/or improvement will be required to achieve ELVs of 25mg/l BOD, 125mg/l COD and 35mg/l Suspended Solids and these ELVs apply from date of grant of licence as they are achievable in RBC plants.

The RL proposes an ELV of 3mg/l Orthophosphate from date of grant of licence. Average Orthophosphate as P in the effluent was 2.68mg/l in 2009 (5 samples) indicating that an ELV of 3mg/l Orthophosphate as P can be achieved. There is no chemical dosing for phosphorus removal at the WWTP.

The RL proposes an interim ELV of 10mg/l Ammonia as N and applies 5mg/l Ammonia as N from 31st December 2019. Average Ammonia in the effluent was 19.5mg/l in 2009 (5 samples) indicating that plant improvement is required to achieve these ELVs. There is no anoxic zone/tank in the WWTP.

Glanworth WWTP is listed as a point pressure in the Blackwater Funshion Water Management Unit Action Plan with 'risks related to non-compliant frequency of monitoring or non-compliant effluent standard where sufficient capacity is available'.

4. Site Visit

I visited Glanworth agglomeration on 14/05/2013 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 River Funshion for a number of specified parameters.

- Upstream: The location identified by Cork County Council is aSW-1u (grid ref. 175897E 103979N) is approximately 60m upstream of SW001. There is a National monitoring station approximately 30m upstream of SW001 (Station Code: RS18F050800) and this has been included in *Schedule B.2* of the RL
- Downstream: The location provided by Cork County Council aSW-1d, (grid ref. 179240E 102995N) is approximately 4km downstream of SW001. There is a National monitoring station approximately 1.7km downstream of SW001 (Station Code: RS18F050820) and this has been included in *Schedule B.2* of the RL

6. Programme of Improvements

Plant control and/or improvement will be required to achieve ELVs of 25mg/l BOD and 3mg/l Orthophosphate as P applicable from date of grant of licence and 5mg/l Ammonia as N applicable by 31st December 2019.

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]	Exemption from achievement of good status until 2021.
EC Environmental Objectives (Surface Water) Regulations 2009, S.I. No. 272 of 2009, as amended	Schedule A of RL sets ELVs to contribute towards good status water quality standards.
Drinking Water Abstraction Regulations	Groundwater abstraction, PA1-0500PUB1204, 8km d/s. Condition 4 requires a risk assessment for protection of drinking water abstraction points to be carried out.
EC Freshwater Fish Directive [2006/44/EC]	Not a designated salmonid river
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.
Birds Directive [79/409/EEC] & Habitats Directive [92/43/EEC]	See Section 8 below. Blackwater (Cork/Waterford) SAC, Site Code 002170 & Blackwater Callows SPA, Site Code 004094 is 10.7km d/s
Environmental Impact Assessment Directive [85/337/EEC]	An EIS was not required for Glanworth WWTP.
Environmental Liability Directive	Condition 7.2 of RL satisfies the

8. Habitats Directive (92/43/EC) & 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 the European Sites.

The screening assessment undertaken concludes that no significant impacts on the European Sites, Blackwater (Cork/Waterford) SAC and Blackwater Callows SPA are predicted and a stage 2 Appropriate Assessment was not required.

The Glanworth WWTP is currently under loaded but the effluent is not complying with Royal Commission standards (25 BOD: 35 SS). However, the River Funshion does not seem to be impacted by the primary discharge, which is 10.7km upstream of the SAC boundary. There are approximately 966 dilutions available for the projected normal waste water discharge. There is no deterioration in the biological Q value downstream of the WWTP. Biological stations upstream and downstream report Q4 indicating Good status in 2012. The River Funshion has Moderate Status.

Schedule A of the RL sets ELVs to contribute towards good status water quality standards required by the Environmental Objectives Regulations 2009, as amended. Plant control and/or improvement will be required to achieve the proposed ELVs.

- 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, in terms of maintaining favourable conservation status of the qualifying interests of the European Sites, having regard to its conservation objectives.

9. Submissions

No submissions were received in relation to this licence application.

10. Charges

The RL sets an annual charge for the agglomeration at € 5,530.68 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

Glanworth Agglomeration D0450-01

