

This memo has been cleared for submission to the Board by Senior Inspector, Mr Patrick Byrne
Signed: Sonia Smith Date: 12/08/2013



**OFFICE OF CLIMATE,
LICENSING & RESOURCE USE.**

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	Dara Lynott, Director
From:	Loretta Joyce Environmental Licensing Programme
Date:	12 th August 2013
RE:	Application for a Waste Water Discharge Licence from Cork County Council for the Glenville agglomeration, Reg. No. D0515-01.

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 500 to 1000
Licence application received:	26/01/2010
Notices under Regulation 18(3)(b) issued:	30/04/2010, 16/05/2013
Information under Regulation 18(3)(b) received:	02/09/2010, 27/04/2011, 31/05/2013
Site notice check:	24/02/2010
Site visit:	13/05/2013
Submissions Received:	08/04/2010 (HSE)

1. Agglomeration

This application relates to the Glenville agglomeration in County Cork. The agglomeration had a population equivalent (p.e.) of 500 in 2011 and the design capacity of the WWTP is 500 p.e. There are no identified sources of industrial waste water in the agglomeration.

The WWTP was designed to produce Royal Commission standard 25:35 BOD: Suspended Solids and consists of inlet works, settlement tank, three rotating biological contactors (RBC) and a clarifier. There is no chemical dosing for phosphorus removal.

A programme of works had been in place for the provision of a new WWTP but no funding has been allocated. The applicant has stated that no further planning applications will be granted which would increase the loading to the existing WWTP.

2. Discharges to waters

Primary Discharge

The primary discharge (SW-1) is the gravity outfall from the WWTP to the Owenbawn River, adjacent to the WWTP. At 95%ile flow in the river (0.02 m³/sec), there are approximately 14 dilutions available for the projected normal waste water discharge (0.0014m³/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	61	154	52	-	-
WWTP Design standards	25	-	35	-	-

Secondary Discharges

There are no secondary waste water discharges from the agglomeration.

Storm water overflows

There are no storm water overflows from the agglomeration.

Emergency overflows

There is one emergency overflow in the agglomeration from the Pumping Station which serves Bridge View Terrace and Glendule Housing Estate. It discharges to the Bride River downstream of the primary discharge point. Condition 5.2 of the RL requires the licensee to assess all emergency overflows to determine the effectiveness of their operation.

3. Receiving waters and impact

The Owenbawn River 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	Owenbawn River IE_SW_18_1183	Flows into Glashnabrack River 1km d/s
Relevant designations within 10km	Discharges directly into SAC	Blackwater (Cork/Waterford) SAC, Site Code 002170
Drinking water abstraction within 10 km d/s	None	
EPA monitoring stations & Biological quality rating (Q value)	No u/s or d/s station on Owenbawn River	
WFD status	Good	2009 and 2011
WFD Risk Category	1a, water body at significant risk of failing objectives	2008
WFD Objective	Protect good status	No exemption
WFD protected areas	RPA drinking water groundwater	

Ambient water quality monitoring data for the Owenbawn River provided by the applicant, based on one sample, indicate that Orthophosphate and Ammonia 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.

Table 3 below summarises the mass balance calculations which show the contribution from the primary discharge on the receiving water at, current and projected, loading of 500p.e. The calculations use the 'notionally clean river' approach (a hypothetically clean stretch of river) provided by the Office of Environmental Assessment.

Table 3. 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	15 (from 2015)	0.99	0.24	1.23	≤ 2.6
Orthophosphate (as P)	0.8 (from 2015)	0.052	0.005	0.057	≤ 0.075
Ammonia (as N)	1.5 (from 2015)	0.10	0.007	0.11	≤ 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 would comply with the good status standards in the Environmental Objectives Regulations 2009, as amended. However, WWTP upgrade is required to meet these ELVs. Given that the Owenbawn River was assigned 'Good' status in 2011 and there is no exemption from the WFD implementation deadline of 22nd December 2015, proposed in the Blackwater Bride Water Management Unit Action Plan, the RL proposes that the ELVs apply from 22nd December 2015. Interim emission limit values prior to 22nd December 2015 are not specified in the RL due to the very limited capacity of the existing WWTP.

The RL proposes an ELV of 15mg/l BOD. The average BOD in the effluent was 61mg/l in 2012. Plant control and/or improvement will be required to achieve an ELV of 15mg/l BOD.

The RL proposes an ELV of 0.8mg/l Orthophosphate. Average Orthophosphate as P in the effluent was 1.36mg/l in 2009 (1 sample) indicating that plant improvement is required to achieve an ELV of 0.8mg/l Orthophosphate as P. There is no chemical dosing for phosphorus removal at the WWTP. Plants with chemical dosing for phosphorus removal can achieve 0.5 to 0.8mg/l Orthophosphate as P.

The RL proposes an ELV of 1.5mg/l Ammonia as N. Average Ammonia in the effluent was 8.2mg/l in 2009 (1 sample) indicating that plant improvement is required to

achieve an ELV of 1.5mg/l Ammonia as N. There is no anoxic zone/tank in the WWTP. Nitrogen removal filters can achieve 0.5 to 2mg/l Ammonia.

Glenville WWTP is listed as a point pressure in the Blackwater Bride Water Management Unit Action Plan with risks 'related to insufficient existing capacity of treatment plant'.

4. Site Visit

I visited Glenville agglomeration on 13/05/2013 and met with a representative of Cork County Council. I visited the WWTP and observed the primary discharge point and receiving waters.

Ambient Monitoring

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

- Upstream: The location identified by Cork County Council is aSW-1u (grid ref. 170789E 87737N) is approximately 200m upstream of SW001. It has been included as a new National monitoring station (Station Code: RS18E220750 in *Schedule B.2* of the RL.
- Downstream: The location provided by Cork County Council aSW-1d, (grid ref. 171585E 87727N) is approximately 750m downstream of SW001. It has been included as a new National monitoring station (Station Code: RS18E220950) in *Schedule B.2* of the RL.

6. Programme of Improvements

There are no planned improvements proposed by the applicant for Glenville WWTP. Plant upgrade and/or improvement will be required to achieve ELVs of 15mg/l BOD, 125mg/l COD, 25mg/l Suspended Solids, 0.8mg/l Orthophosphate as P and 1.5mg/l Ammonia as N 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 4. 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 good status water quality standards.
Drinking Water Abstraction Regulations	No drinking water abstractions present.
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. Discharges directly into Blackwater River (Cork/Waterford) SAC, Site Code 002170.
Environmental Impact Assessment Directive [85/337/EEC]	An EIS was not required for Glenville WWTP.
Environmental Liability Directive [2004/35/CE]	Condition 7.2 of RL satisfies the requirements of the Directive.

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 a stage 2 Appropriate Assessment was required as significant impacts on the European Site, Blackwater (Cork/Waterford) cannot be discounted.

The Glenville WWTP is currently at capacity/overloaded and discharges poor quality effluent to a river which may form viable spawning habitat for salmon. The potential negative pressure of the existing discharge upon potential salmon recruitment in the Owenbawn River is considered to be significant in the context of the overall Bride sub-catchment. Salmon stock need to recover in this watershed; this will be achieved through the prevention of pollution in valuable spawning headwaters. At present, the Glenville WWTP poses a risk to this conservative effort.

The assessment therefore concludes that due to potential impacts to Atlantic salmon in the Owenbawn River, the possibility of significant impacts to a key conservative objective of the Blackwater River (Cork/Waterford) SAC cannot be discounted.

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 upgrade and/or improvement will be required to achieve ELVs of 15mg/l BOD, 125mg/l COD, 25mg/l Suspended Solids, 0.8mg/l Orthophosphate as P and 1.5mg/l Ammonia as N from 22nd December 2015.

The existing discharge has not prevented the Owenbawn River from achieving 'Good Status' in 2009 and 2011, given the limited scale of the discharge and that the RL requires WWTP upgrade and sets stringent ELVs which are applicable from 22nd December 2015, it is unlikely that the discharge from Glenville WWTP will have a significant impact on the European Site.

- 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, after WWTP upgrade to comply with ELVs specified in the RL, 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

One valid submission was received in relation to this application from Miriam Cashell, A/Principal Environmental Health Officer, HSE, 08/04/2010.

The submission states that *the discharge of waste water to the watercourse must not give rise to a danger to Public Health or lead to contamination of the water table.*

Response: The points raised in this submission have been taken into consideration. Schedule A of RL sets ELVs to contribute towards achieving good status water quality standards.

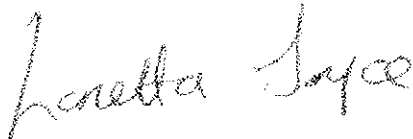
10. Charges

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
Inspector
Environmental Licensing Programme

Glenville Agglomeration D0515-01

