OFFICE OF CLIMATE, LICENSING & RESOURCE USE

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	Dara Lynott, Director	
From:	Éimer Godsil	Environmental Licensing Programme
Date:	25 June 2014	
RE:	Application for a Waste Water Discharge Licence from Irish Water, for the agglomeration named **Rathcormac** Reg. No. D0200-01.	

Application & Agglomeration Details	
Agglomeration Name:	Rathcormac (Figure 1)
County:	Cork
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 2,001 to 10,000.
Licence application received:	07/10/2008
Notices under Regulation 18(3)(b)[1] issued:	30/04/2010, 15/07/2010, 11/12/2013.
Information under Regulation 18(3)(b) received:	01/06/2010, 04/07/2011, 10/01/2014, 16/04/2014
Site notice check:	18/10/2008
Site Visit:	11/03/2014
Submission(s) Received:	None
Design Population Equivalent:	4,000
Actual Population Equivalent:	1,000
Type of treatment:	Tertiary
Plant description:	The plant consists of inlet screen, stormwater holding tank, 3 Sequential Batch Reactors (SBR) with fine bubble diffused aeration, balance holding tank, picket fence thickener, 2 sand filters and phosphorous removal by ferric sulphate dosing. Influent and effluent composite sampling.

[1] Waste Water Discharge (Authorisation) Regulations 684/2007 as amended.

The plant was commissioned in 2009. The collection system is primarily combined, with the more recently constructed parts being separate. The influent is 85% domestic and 15% commercial and the agglomeration has no industrial loading. Only 2 of the 3 SBRs are being used due to the low volume of influent to the plant. The sand filtration unit is out of commission since June 2012 as a result of flooding of the WWTP site, application has been made for replacement and allocation of funding is awaited.

1. Discharges to waters

Table 1: Discharges to waters

Primary discharge point	
Receiving water name	River Bride (Waterford)
Type of receiving water	Freshwater
Normal flow	200 m^3/day
Maximum flow	1,440 m^3/day
Storm water overflow	
Storm water overflow	Yes SW002; no storm water holding.
Receiving water name	Shanowen River, freshwater. A tributary of the River Bride.
Emergency overflow	
Emergency overflow	Yes, 1; at SW002

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

The design specification for the plant is BOD 10mg/l, COD 70mg/l, Suspended Solids (SS) 15mg/l and Total Phosphorous 1mg/l. The final treated effluent quality from the WWTP in 2012/2013 was not within the limits prescribed in the Urban Wastewater Treatment Regulations (BOD 25mg/l, COD 125mg/l and SS 35mg/l). From eighteen monitoring results there were seven exceedences for BOD, eight for COD and nine for SS. The effluent monitoring results for 2012/2013 for BOD, COD and SS were in the range 5-183mg/l, 29-683mg/l and 4-435mg/l respectively.

Rathcormac WWTP was built with an anticipation of increased agglomeration p.e. in the years following commissioning in 2009. This increase in p.e. did not materialise and the plant is now operating under capacity. The low biological loading means the plant is not operating efficiently and the consequences are exceedences for BOD, COD and SS and the plant undergoes biological reseeding 2/3 times per year. Plant operation requires improvement to meet ELVs as specified in the RL.

2. Receiving waters and impact

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

Table 2: Receiving waters

Characteristic	Classification	Comment
Receiving water name	River Bride (Waterford)	WFD Code: IE_SW_18_1600
Designations	Blackwater River(Cork/Waterford) Salmonid Water: SW_Blackwater190Bride_Bride_2Mid	SAC (Site code: 002170) Code: IE_SW_18_1600
Receiving water monitoring stations	Bridge south of Rathcormac (EPA RS Code: RS18B050300) Dr. Barry Bridge (EPA RS Code: RS18B050320)	200m u/s of SW001 on River Bride 330m d/s of SW001 on River Bride
Biological quality rating (Q value)	Q4 (Good Status) in 2012 Q4-5 (High Status) in 1990	200m u/s of WWTP on River Bride 330m d/s of WWTP on River Bride
WFD status	Good (2011)	Maintain
WFD Risk Category	1a	At risk of not achieving good status.

Rathcormac agglomeration is in the *South Western River Basin District (RBD)* and the *Blackwater-Bride Water Management Unit Action Plan (WMUAP)*. The WMUAP identifies the WWTP in Rathcormac as a point pressure on the River Bride catchment. River water chemistry analysis as published in the *Water Quality Report 2007-2009* undertaken at Ballynella Footbridge, 8km downstream of SW001 indicates a BOD of 1.6mg/l, orthophosphate of 0.026mg/l and a Suspended Solids of 6mg/l. All of which comply with the Surface Water Regulations.

The Office of Environmental Assessment (OEA) carried out upstream and downstream ambient monitoring for 2012. The monitoring results indicate that the receiving water is in compliance with the European Communities Environmental Objectives (Surface Water) Regulations, 2009, as amended.

In the Agencys publication *Focus on Urban Waste Water Treatment in 2012,* Rathcormac is reported as a 'Fail' for effluent quality standards and also for insufficient number of sampling results as per the Urban Waste Water Treatment Directive (91/271/EEC) as amended.

Table 3: Mass Balance Calculations.

Parameter	Background Concentration (mg/l)	Proposed ELVs for discharge from SW001 (mg/l)	Contribution from primary discharge (mg/l)	Predicted downstream concentration (mg/l)	Relevant standard (mg/l) Note 1
BOD	0.980	25	0.17	1.14	2.6
Orthophosphate	0.019	2	0.014	0.032	0.075
Total Ammonia	0.030	5	0.034	0.064	0.14

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

Mass balance calculations were carried out using the monitoring information provided by the Agency. The 95%ile flow in the river at Ballinterry (No. 18011), 500m d/s of SW001, is 0.34m^3/s and there are approximately 150 dilutions available for the waste water discharge. The mass balance calculations are based on the 95%ile 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 2).

The mass balance calculations indicate that the predicted downstream concentrations for BOD, orthophosphate and ammonia are within the standards set in the European Communities Environmental Objectives (Surface Water) Regulations, 2009, as amended.

The limit of 0.075mg/l for orthophosphate, 0.14mg/l for ammonia and 2.6mg/l of BOD in the receiving water are statutory limits set in the European Communities Environmental Objectives (Surface Water) Regulations, 2009, as amended. An emission limit value of 2mg/l is recommended for orthophosphate, 5mg/l for ammonia and 25mg/l for BOD in the RL. The limits are set based on the assimilative capacity calculations and the achievable standards that can be met with the existing infrastructure at the WWTP. The WWTP has Sequential Batch Reactors with chemical dosing for Phosphorous removal which can achieve standards of 15-25 mg/l for BOD, 0.5-0.8mgP/l for orthophosphate and 2-5mgN/l for ammonia in the discharge. The re-introduction of sand filtration would enable the plant to achieve a standard of 5-15 mg/l for BOD. Based on this information the emission limit values for BOD, orthophosphate and ammonia in the RL are achievable.

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 Wastewater 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 Wastewater Discharge (Authorisation) Regulations, 2007, as amended.

5. Programme of Improvements

The WWTP in Rathcormac provides secondary treatment, with dosing for phosphorous removal, to the wastewater from the agglomeration. The licensee has no programme of improvements in place for the agglomeration. As the plant is operating under capacity the discharge does not comply with the requirements of the Urban Waste Water Treatment Regulations, with regular exceedences for BOD, COD, and SS occurring. Condition 5.1 of the RL requires the licensee to prepare and submit to the Agency a programme of infrastructural improvements to maximise the effectiveness and efficiency of the waste water works. The conditions and emission limit values specified in the RL will ensure no deterioration in the quality of the receiving waters as a result of the discharge.

6. Compliance with EU Directives

In considering the application, regard was had to the requirements of Regulation 6(2) of the Wastewater 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]	Not compliant in 2012/2013
Water Framework Directive [2000/60/EC]	Good status to be protected. WFD Register of Protected Areas. The River Bride is a designated salmonid river and is registered as a protected area under Article 6 and paragraph 1(ii) of Annex IV of the WFD. One of the stated objectives of this Directive (recital 51) is to 'ensure a level of protection at least equivalent to that provided in certain earlier acts'. The ELVs set in *Schedule A.1* of the RL, in particular the ELV of 25mg/l for Suspended Solids, will aim to ensure the River Bride will meet the specifications in the Directive under which salmonid waters were designated.
EC Environmental Objectives (Surface Water) Regulations 2009 (S.I. No. 272 of 2009), as amended	Compliant. Schedule A of RL sets ELVs to contribute towards maintaining good status water quality standards.
Drinking Water Abstraction Regulations	1 drinking water abstraction from receiving water, (0500PUB1204_158), 5.5km d/s of SW001. Condition 4 requires risk assessment for the protection of d/s 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 submitted for Rathcormac WWTP.
Environmental Liability Directive	Condition 7.2 of RL

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

The Rathcormac WWTP discharges directly into the Blackwater River (Cork/Waterford) SAC[2]. The site is protected for priority habitats listed under Annex 1 of the Habitats Directive. It is also selected for protection of species listed under Annex II of the same directive.

The Balckwater River SAC comprises the River Blackwater from Ballydesmond on the Cork/Kerry county boundary to the estuary at Youghal and includes many tributaries, one of which is the River Bride. Its confluence with the Blackwater River is approximately 40km downstream of SW001. The site is selected for alluvial wet woodlands and Yew wood, both priority habitats listed on Annex I of the E.U. Habitats Directive. Wet woodlands are found where river embankments, particularly on the River Bride, have broken down. These wet woodlands form one of the most extensive tracts of the wet woodland habitat in the country. Marshes and reedbeds cover most of the flat areas beside the Blackwater River and its tributaries, they often occur in mosaic with the wet woodland. Floating river vegetation is found along much of the freshwater stretches of the site.
Several bird species listed on Annex I of the E.U. Birds Directive are found on the site and the Awbeg and the Bride Rivers are also thought to support at least 30 pairs of Kingfisher. Golden Plover occur in regionally important numbers on the Blackwater Estuary and on the River Bride.
Land use at the site is mainly centred on agricultural activities. The banks of much of the European Site are dominated by improved grasslands which are drained and heavily fertilised. These areas are grazed and used for silage production. Slurry is spread over much of this area and arable crops are grown. The spreading of slurry and fertiliser poses a threat to the water quality of the salmonid rivers in the site and to the populations of Habitats Directive Annex II animal species within it. The Bride is a salmonid river and sea trout ascend to its lower reaches.

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. 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. The reasons for the decision are; comparison of upstream and downstream monitoring of the receiving water shows no significant increase in monitored parameters downstream of the discharge, 'Good' ecological status of the river (2011), mass balance calculations show that the river has adequate assimilative capacity for the discharge to enable the receiving water to maintain the 'Good' status required in the Surface Water Regulations and there are no other plans or projects in the vicinity of the discharge that will affect the receiving water - Castlelyons D0449-01 (licenced) and Bridebridge A0333-01 (certified) WWTPs discharge to the Shanowennadrimina Stream and the River Bride respectively, downstream of Rathcormac, both have had recent upgrades and monitoring of the effluent from Castlelyons WWTP shows compliance with the Urban Waste Water Treatment Regulations.

[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.

7. Cross Office Liaison

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

8. Submissions

No submissions were received in relation to this application.

9. 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.

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

Éimer Godsil
Environmental Licensing Programme

Annex 1: Map showing location of Rathcormac WWTP and associated primary discharge point.