



This memo has been cleared for submission to the Board by Senior Inspector, Dr Karen Creed  
Signed: Soyia Smith Date: 21/06/2013

**RESOURCE USE.**

**INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION**

To:	Dara Lynott, Director	
From:	Suzanne Wylde, Yvonne English, Gavin Clabby, Éimer Godsil, Ciara Maxwell & Simon Hussey	Environmental Licensing Programme
Date:	21 <sup>st</sup> June 2013	
Re:	Application for a Waste Water Discharge Licence from Cork County Council, for the agglomeration named <b>Macroom</b> , Reg. No. D0126-01.	

**Application Details**

Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 2,001 to 10,000.
Licence application received:	22/09/2008
Notices under Regulation 18(3)(b) issued:	21/08/2009, 20/08/2010
Information under Regulation 18(3)(b) received:	22/10/2010, 23/02/2011
Site notice check:	17/10/2008
Site Visit:	26/03/2013
Submission(s) Received:	None

**1. Agglomeration**

This application relates to the agglomeration named Macroom in Co. Cork (see map in Appendix 1).

The WWTP was designed to cater for a population equivalent of 5,230. The existing p.e. served by the wastewater works is 5,055. The influent to the wastewater treatment plant is primarily domestic wastewater. The sewage system in Macroom is primarily a combined system.

The WWTP provides secondary treatment, comprising extended aeration activated sludge. The plant consists of inlet works, a single oxidation ditch with a secondary settlement tank and a return sludge system. A phosphorous removal facility, comprising a GRP ferric sulphate storage tank and dosing system, was installed in the late 1980's. However, this has not been operated for a number of years.

## 2. Discharges to waters

The final treated effluent discharges through the primary discharge point (SW001) to the Sullane River. The normal flow from the WWTP is 1,114m<sup>3</sup>/day, while the maximum discharge from the WWTP is 2,205m<sup>3</sup>/day. The final treated effluent quality from the WWTP in 2011 was within the limits prescribed in the Urban Wastewater Treatment Regulations (BOD 25mg/l, COD 125mg/l and suspended solids 35mg/l). The effluent monitoring results for 2011 for BOD, COD and suspended solids were in the range of 3-7mg/l, 26-63mg/l and 7-29mg/l, respectively.

There are no secondary discharge points within the agglomeration.

There are two stormwater overflow(s) within the agglomeration. They are located at the wastewater treatment plant and at the Massy town pumping station. Both stormwater overflows discharge to the Sullane River.

There are no facilities on the Macroom WWTP site for the storage of storm water and in the event of storm conditions incoming storm flows overflow, from the inlet works, via a two sided weir channel into the Sullane River.

The Massy town pumping station has two foul pumps (1 duty and 1 standby). The storage capacity in the wet well is 75m<sup>3</sup>. The pumping station overflows during storm events or power failure.

The licence, as drafted, requires that the stormwater overflow must conform with the criteria as set out in the improvements DoECLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency. The programme of infrastructural required under Condition 5.1 of the RL requires an assessment of all storm water overflows (Condition 5.2.3) and preparation of an implementation plan as necessary (Condition 5.3).

*Schedule A: Discharges & Discharge Monitoring* of the recommended licence (RL) specifies the Emission Limit Values (ELVs) to which the discharge(s) from the Macroom agglomeration must conform. The ELVs are aimed at providing a high degree of protection to the receiving water body. Monitoring of the discharges will take place as per this schedule of the RL.

### 3. Receiving waters and impact

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

Characteristic	Classification	Comment
Receiving water name and type	Sullane River	WFD Code: IE_SW_19_1710
Applicable Regulations	UWWT Regulations <sup>Note 1</sup>	In compliance
	Surface Water Regulations <sup>Note 2</sup>	In compliance
Designations	None downstream	
EPA monitoring stations	Linnamilla Br EPA RS Code: RS19S020400	4.6km u/s of SW001 on River Sullane
	Ford U/s of Laney R Confl. EPA RS Code: RS19S020480	250m d/s of SW001 on River Sullane
Biological quality rating (Q value)	Q5 (2011)	4.6km u/s of WWTP on River
	Q4 (2011)	250m d/s of WWTP on River
WFD status	Good (2011)	Restore (2009)
WFD Risk Category	1a (2008)	At risk of not achieving good status

Note 1: Urban Wastewater Treatment Regulations, as amended, 2001.

Note 2: European Communities Environmental Objectives (Surface Water) Regulations 2009 (as amended).

The Upper Lee Water Management Unit Action Plan (WMUAP) identifies the WWTP in Macroom as a point pressure on the Upper Lee catchment.

Cork County Council carried out upstream and downstream ambient monitoring for 2007 and 2008. The monitoring results indicate that the receiving water is in compliance with the European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended) for good status.

Table 2: Mass Balance Calculations.

Parameter	Background Concentration (mg/l) <sup>1</sup>	Proposed ELVs for discharge from SW001 (mg/l)	Contribution from primary discharge (mg/l)	Predicted downstream concentration (mg/l)	Relevant standard (mg/l)
BOD	1.21	15	0.1634	1.3629	2.6 <sup>Note 1</sup>
Orthophosphate	0.0145	1	0.011	0.0254	0.075 <sup>Note 1</sup>
Total Ammonia	0.023	2	0.0221	0.0449	0.14 <sup>Note 1</sup>

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

Mass balance calculations were carried out using the monitoring information provided by Cork County Council. The 95<sup>th</sup>ile flow in the river at the primary discharge point is 1.15m<sup>3</sup>/s. The mass balance calculations are based on the 95<sup>th</sup>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 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 for good status 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) for good status. An emission limit value of 1mg/l is recommended for orthophosphate, 2mg/l for ammonia and 15mg/l for BOD in the RL. The limits are set based on the mass balance calculations and the achievable standards that can be met with the existing infrastructure at the WWTP. The WWTP has an extended aeration activated sludge plant although there is a phosphorus removal facility in place at the WWTP, it is currently not being used. The addition of chemical dosing for phosphorus removal will ensure that the final treated effluent will meet a concentration of 1mg/l orthophosphate. Activated sludge treatment with phosphorus removal can achieve standards of 1mg/l for orthophosphate and 2mg/l for ammonia in the discharge. Based on this information the emission limit values for orthophosphate and ammonia in the RL are achievable.

There are known populations of fresh water pearl mussel, *Margaritifera margaritifera* located upstream of the Macroom WWTP on the River Sullane and its tributaries. There was one report of a pearl mussel population downstream of the Macroom WWTP primary discharge point, however following discussions with the National Parks and Wildlife Service it is believed that it is unlikely that the habitats necessary to sustain the pearl mussel currently exist below the discharge from Macroom WWTP. Evidence of extensive algal growth, as well as dense macrophytic growth and siltation in places in the Sullane would point to the likelihood that the pearl mussel is absent at this location. Nevertheless, the mass balance calculations indicate that the predicted downstream concentrations for BOD, orthophosphate and ammonia are within the standards set for high status in the European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended). Therefore, the discharge from the Macroom agglomeration will not impede the achievement of high status downstream of the discharge. In addition, the RL stipulates an ELV of 25mg/l for suspended solids.

#### **4. Ambient Monitoring**

*Schedule B.2: Receiving Water 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.2: Receiving Water Monitoring* are sufficient to ensure that there will be no deterioration in the status of the receiving water as a result of the discharge.

#### **5. 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).

## 6. Programme of Improvements

The WWTP in Macroom provides secondary treatment for wastewater from the Macroom agglomeration. The RL as drafted requires the Local Authority to recommence use of the phosphorus removal facilities at the plant, no later than the 1<sup>st</sup> August 2013, to ensure that there is no deterioration in the quality of the receiving water. 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.

## 7. 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:

### Drinking Water Abstraction Regulations

There is a drinking water abstraction 20 km downstream of the discharge from the Macroom WWTP. Cork County Council has not carried out a risk analysis with regard to the impact of the discharge on the drinking water abstraction point. The drinking water abstraction point is not on the Remedial Action (List Q1 of 2013).

### Sensitive Waters

The River Sullane is not designated as a sensitive water under the Urban Wastewater Treatment Regulations.

### Water Framework Directive [2000/60/EC]

The RL, as drafted, transposes the requirements of the Water Framework Directive. In particular, *Condition 3: Discharges* provides conditions regulating discharges to waters. *Schedule A: Discharges & Discharge Monitoring* specifies limit values for those substances contained within the waste water discharge. Those limits specified in the RL are determined with the aim of achieving good water quality status by 2015.

### European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended)

The ambient monitoring data supplied by Cork County Council demonstrates compliance in the receiving water with the good status standards in the European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended). The RL, as drafted, includes emission limit values to ensure that the treatment provided by the plant is sufficient to satisfy the European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended).

### Urban Waste Water Treatment Directive [91/271/EEC]

Macroom WWTP complies with the requirements of the Urban Waste Water Treatment Directive, in terms of the level of treatment provided. The RL, as drafted, has regard to the requirements of the Urban Waste Water Treatment Directive.

### Dangerous Substances Directive [2006/11/EC]

The applicant has provided once-off sampling results for 18 of the 19 dangerous substances in the primary discharge for the purposes of the licence application. The measured concentrations are not considered significant. The measured concentrations in the primary discharge comply with the relevant environmental quality standards, expressed as annual average values and maximum allowable concentrations, where the laboratory limits of detection are sufficient to determine compliance.

Condition 4.20 of the RL, as drafted, requires the licensee to identify the priority substances for monitoring by undertaking a risk-based assessment in accordance with "*Guidance on the Screening for Priority Substances for Waste Water Discharge Licences*" issued by the Agency. Monitoring for any identified priority substance shall be carried out as required by the Agency.

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

Macroom WWTP discharges to the Sullane River, approximately one kilometer upstream of the confluence of the Sullane with the River Lee. The Gearagh SAC<sup>1</sup> (Site code 000108) and SPA<sup>2</sup> (004109) is located on the River Lee, approximately 2 km upstream of the Sullane/Lee confluence. There are no other designated European Sites featuring water dependent species or habitats in the vicinity of the discharge.

A screening (Stage 1) for Appropriate Assessment of the discharge(s) from the agglomeration was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the discharge(s), individually or in combination with other plans or projects is likely to have a significant effect on any European Site.

The screening assessment undertaken demonstrates that the discharge(s) from Macroom WWTP is not likely to have significant effects, in terms of maintaining favourable conservation status of the qualifying interests, on the European Site having regard to its conservation objectives, due to lack of connectivity.

### Environmental Impact Assessment Directive [85/337/EEC]

An EIS was not required and should one be required as part of any programme of improvements, it will be dealt with as per Condition 1.8 of the RL.

### Environmental Liabilities Directive [2004/35/EC]

Condition 7.2 of the RL satisfies the requirements of the Environmental Liabilities Directive in particular those requirements outlined in Article 3(1) and Annex II of 2004/35/EC.

## **8. 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

---

<sup>1</sup> 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.

<sup>2</sup> SPA: Special Protection Area designated under the *Birds Directive*, Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

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.

## **9. Site Visit**

A site visit was carried out by Éimer Godsil, Inspector, from the Environmental Licensing Programme, on 26<sup>th</sup> March 2013. The site visit encompassed a walk through the workings of the WWTP and inspection of the discharge location.

## **10. Submissions**

No submissions were received in relation to this application.

## **11. Charges**

The RL sets an annual charge for the agglomeration at €7,113.78 and is reflective of the monitoring and enforcement regime being proposed for the agglomeration.

## **12. 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,



**Suzanne Wylde, Yvonne English, Gavin Clabby, Éimer Godsil, Ciara Maxwell  
& Simon Hussey**

Environmental Licensing Programme

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

