

This memo has been cleared for submission to the Board by Senior Inspector, Dr Karen Creed  
 Signed: Suzanne Wylde Date: 27/11/2012



**LICENSING & RESOURCE USE.**

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION	
<b>To:</b>	DIRECTORS
<b>From:</b>	Suzanne Wylde <b>Environmental Licensing Programme</b>
<b>Date:</b>	27 <sup>th</sup> November 2012
<b>RE:</b>	Application for a Waste Water Discharge Licence from Cork County Council Northern Division, for the agglomeration named <b>Kanturk and Environs</b> , Reg. No. D0203-01

The Environmental Agency  
29 NOV 2012  
**CORK**

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 2,000 to 10,000.
Licence application received:	6 <sup>th</sup> October 2008
Notices under Regulation 18(3)(b) issued:	14 <sup>th</sup> January 2009; 28 <sup>th</sup> May 2009; 30 <sup>th</sup> April 2010; 15 <sup>th</sup> July 2010
Information under Regulation 18(3)(b) received:	16 <sup>th</sup> March 2009; 1 <sup>st</sup> June 2010; 4 <sup>th</sup> July 2011
Site notice check:	16 <sup>th</sup> October 2008
Submission(s) Received:	None received

**1. Agglomeration**

This application relates to the agglomeration named Kanturk and Environs. Kanturk is located in north County Cork, about 18km northwest of Mallow town in the Blackwater Valley.

The Kanturk wastewater treatment plant (WWTP) is located close to the townland of Gurteenard, south of the town. The plant was opened in 1994 and is manned from 1030hrs to 1500hrs, Monday to Friday. The WWTP provides secondary treatment.

The WWTP was designed to cater for a population equivalent of 3,500. The existing p.e. served by the wastewater works is 2,704. The maximum proposed p.e. for the WWTP is 3,495. For both the existing and the proposed p.e. the domestic contribution is approximately 80% of the load entering the WWTP and commercial the remaining 20%. All industries with trade effluent within the agglomeration have

separate treatment plants, therefore there is no trade effluent contributing to the treatment plant load.

The sewage system in Kanturk is primarily a separate storm and foul system. The surface water in Kanturk generally drains directly to the receiving water, therefore not overloading the wastewater treatment plant.

The WWTP is an activated sludge process. It includes screening, inlet flume, splitter chamber, oxidation ditches, settling tanks, picket fence thickener, sludge dewatering house and sludge storage.

The local authority has no plans to carry out any major improvement works on the plant.

An enhanced level of treatment is required in Kanturk as the primary discharge point (SW001) is located within the Blackwater River SAC (Cork/Waterford) (site code: 2170), which has been designated partly on the basis of the presence of the fresh water pearl mussel, *Margaritifera margaritifera*. The first schedule of the *European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations S.I No. 296 of 2009 (Pearl Mussel Regulations 2009)* lists the 27 designated Freshwater Pearl Mussel sites. The Allow River is one of these designated freshwater pearl mussel sites.

## **2. Discharges to waters**

The final treated effluent discharges through the primary discharge point (SW001) to the Allow River. The outfall pipe runs in a southwest direction from the WWTP, approximately 65m across the flood plain to the Allow River. The dry weather flow from the WWTP is 776m<sup>3</sup>/day, while the maximum discharge from the WWTP is 675m<sup>3</sup>/day. The final treated effluent quality from the WWTP in 2010 was within the limits prescribed in the Urban Wastewater Treatment Regulations (BOD 25mg/l, COD 125mg/l and 35mg/l suspended solids). The average effluent monitoring results for 2010 for BOD, COD and suspended solids were 7mg/l, 34mg/l and 7mg/l, respectively.

There are no secondary discharge points within the agglomeration.

There is one pump station within the agglomeration that relates to wastewater. It is located 500m upstream of the WWTP. The influent flows by gravity to the pump station, from where it is pumped the 500m downstream to the WWTP. The storage capacity within the pump station is approximately 148m<sup>3</sup>. This equates to 4.5 hours storage in the case of power failure or total pump malfunction, in which circumstances there is an emergency overflow facility. There is no generator installed at the pump station, standby or mobile.

There is one stormwater overflow within the agglomeration. It is located on the inlet flume to the WWTP. This overflow consists of a 450mm diameter overflow pipe that carries flows greater than 6DWF from the inlet flume directly to the receiving water. The licence, as drafted, requires that the stormwater overflow must conform with the criteria as set out in the DoECLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency.

*Schedule A: Discharges & Discharge Monitoring* of the recommended licence (RL) specifies the Emission Limit Values (ELVs) to which the discharge from the Kanturk

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 River Allow downstream of the primary discharge.

Table 1: Receiving waters

Characteristic	Classification	Comment
Receiving water name and type	River Allow	A tributary of the River Blackwater (WFD Code:IE_SW_18_394)
Amenity value	Fishing	Trout fishing
Applicable Regulations	UWWT Regulations <sup>Note 1</sup> Surface Water Regulations <sup>Note 2</sup>	Not in compliance In compliance
Designations	Blackwater River (Cork/Waterford) Munster Blackwater/Allow	SAC (Site code: 2170) <i>Margaritifera</i> catchment
EPA monitoring stations	Footbridge in Kanturk (EPA RS Code: RS18D010600) 1.3km d/s Kanturk Br (EPA RS Code: RS18D020490)	1500m u/s of SW001 on River Dalua 160m d/s of SW001
Biological quality rating (Q value)	Q4-5 (Unpolluted) Q3-4 (Slightly polluted) Q4-5 (Unpolluted)	U/s of WWTP on River Allow U/s of WWTP on River Dalua d/s of WWTP on River Allow
WFD status	Good	Objective is to maintain this status and progress towards high status by 2015.
WFD Risk Category	1a	At risk of not achieving good status

Note 1: Urban Wastewater Treatment Regulations, as amended.

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

The Allow River is a tributary of the Munster Blackwater River. The Dalua river joins the Allow River approximately 1km upstream of the primary discharge point from the Kanturk WWTP. The Brogeen River joins the Allow River just 200m downstream of the primary discharge point.

The Blackwater Water Management Unit Action Plan (WMUAP) identifies the WWTP in Kanturk as a point pressure on the Blackwater catchment. The WMUAP states that the WWTP in Kanturk has sufficient capacity, although there is evidence of impact. The WMUAP does not specify what impact it is referring to.

North Cork Creameries Co-operative discharges to the Allow River 100m upstream of Kanturk WWTP. Ducon Concrete discharges to the receiving water, downstream of the discharge from Kanturk WWTP, but upstream of the confluence with the Munster

Blackwater River. Cork County Council monitors the receiving water in the vicinity of these discharges.

The local authority submitted upstream and downstream ambient monitoring results for 2007-2008 as part of their licence application (Table 2). The monitoring results indicate that the receiving water is in compliance with the European Communities Environmental Objectives (Surface Waters) Regulations (2009).

Table 2: Upstream and downstream monitoring results (annual average) for the Allow River, as per Cork County Council monitoring in 2007 & 2008.

Parameter	Upstream		Downstream		Standard <sup>Note 1</sup>
	2007	2008	2007	2008	
BOD (mg/l)	0.81	0.77	0.65	0.91	2.2 <sup>Note 2</sup>
Suspended Solids (mg/l)	5.25	8.13	6	3.19	-
Ammonia (mg/l)	0.05	0.05	0.05	0.05	0.090 <sup>Note 2</sup>
Orthophosphate (mg/l)	0.025	0.025	0.025	0.025	0.045 <sup>Note 2</sup>

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

Note 2: Standards for high status receiving waters.

The Allow River is required to support the freshwater pearl mussel (*Margaritifera margaritifera*) both under the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations (2009) and the 'Freshwater Pearl Mussel Allow Sub-Bain Management Plan'. The proposed emission limit values (ELVs) for the RL, as drafted, are therefore based on the high status standards as laid down in the European Communities Environmental Objectives (Surface Water) Regulations (2009). The high status limits (95%ile) for BOD, ammonia and orthophosphate are 2.2mg/l, 0.090mg/l and 0.045mg/l, respectively.

Table 3: Assimilative Capacity Calculations.

Parameter	Background Concentration (mg/l)	% Available Capacity	Proposed ELVs for discharge from SW001 (mg/l)	Contribution from primary discharge (mg/l)	Predicted downstream concentration (mg/l)	Relevant standard (mg/l)
BOD	0.77	35	25	0.28	1.05	2.2 <sup>Note 1</sup>
Orthophosphate	0.025	55	0.5	0.025	0.038	0.045 <sup>Note 1</sup>
Total Ammonia	0.05	55	0.8	0.02	0.07	0.090 <sup>Note 1</sup>

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

Assimilative capacity calculations were carried out using the monitoring information provided by Cork County Council (Table 2). The assimilative calculations indicate that the predicted downstream concentrations for BOD and ammonia are within the standards set for high status (Table 3). The RL, as drafted sets an ELV of 0.8mg/l for ammonia. This emission limit value for ammonia is achievable in the final treated discharge. Final effluent monitoring results submitted to the Agency with the licence

application show that the effluent has reached as low as 0.1mg/l of ammonia in the final discharge.

The limit of 0.045mg/l of orthophosphate in the receiving water is a statutory limit set in order to protect the high status of the receiving water, particularly the freshwater pearl mussel. An emission limit value of 0.5mg/l is recommended for orthophosphate in the RL.

The WWTP provides secondary treatment only, although there is a phosphorous removal facility in place at the WWTP, it is currently not being used. The addition of chemical dosing for phosphorous removal will ensure that the final treated effluent will have a concentration of 0.5mg/l orthophosphate. Therefore, setting an emission limit value of 0.5mg/l orthophosphate is achievable for the WWTP. The Department of the Environment, Community and Local Government inspector for the WWTP in Kanturk was informed by Cork County Council that while the phosphorous removal facility at the WWTP is not currently in use, where the WWDL licence includes a requirement to operate phosphorous removal at the WWTP, then the Council will comply with the requirement.

Condition 4.23 of the RD, as drafted, requires the licensee to review the finalised version of the Freshwater Pearl Mussel Allow Sub Basin Management Plan for the Allow Catchment on an annual basis, implement applicable measures and submit a report of the measures implemented as part of the AER.

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

*Schedule B.2: 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.2: 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.

#### **5. Combined Approach**

The Waste Water 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 Waste Water Discharge Authorisation Regulations, 2007 (as amended).

#### **6. Programme of Improvements**

The WWTP in Kanturk provides secondary treatment for wastewater from the Kanturk agglomeration. As previously mentioned, the plant was commissioned in 1994 and minor upgrade works were completed in 2006. The RL, as drafted, requires the local authority to recommence use of the tertiary treatment at the plant for phosphorous removal, no later than 31<sup>st</sup> January 2013, to ensure that the receiving water can achieve the high status requirements of the European Communities Environmental Objectives (Surface Water) Regulations (2009). The conditions and emission limit values specified in the RL should therefore 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 Waste Water (Discharge) Authorisation, Regulations, 2007 (S.I. No. 684 of 2007) notably:

### Drinking Water Abstraction Regulations

There are no drinking water abstractions downstream of the discharge from the Kanturk WWTP.

### Sensitive Waters

The Allow River 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, S.I. No. 272 of 2009

The ambient monitoring data submitted by the local authority demonstrates compliance in the receiving water with the European Communities Environmental Objectives (Surface Water) Regulations (2009). 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).

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

Kanturk WWTP does not comply with the overall requirements of the UWWT Directive. The EPA report "*Focus on Urban Wastewater Discharges in Ireland*" (2012) states that the WWTP in Kanturk was not in compliance with the UWWT Directive in 2009, due to insufficient number of samples taken. It should be noted however, that the monitoring results submitted to the Agency for 2010 indicate that the effluent quality is within the limits set in the UWWT Directive. 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 sampling results for seventeen (17) of the 19 dangerous substances in the primary discharge for the purposes of the licence application. Monitoring was not provided for tributyltin or fluoride. The majority of the measured concentrations are not considered significant. However, elevated results were returned for lead, cadmium, chromium and mercury. Condition 4.12 of the RL, as drafted, requires the licensee to investigate the sources of priority substances identified during the monitoring of discharges and to take the necessary measures to reduce or eliminate these substances from the discharge.

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

The Kanturk WWTP discharges directly into the Blackwater River SAC. The site is protected for priority habitats listed under Annex 1 of the Habitats Directive. It is also selected for protected for species listed under Annex II of the same directive, including the freshwater pearl mussel.

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

The applicant determined that an appropriate assessment was required. The applicant submitted a Natura Impact Statement, as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011).

The Appropriate Assessment concluded that the cumulative pressure on the Allow is considered to be quite high in the region of Kanturk. However, EPA and Cork County Council sampling of the river downstream of the town show no measurable increase in nutrients in the River Allow downstream of the WWTP, Ducon Concrete and the North Cork Co-op Creamery.

The Appropriate Assessment also noted that given the high ecological conditions prevailing in the receiving water in the vicinity of the discharge from Kanturk, it is reasonable to suggest that the dilution factors and assimilative capacity in the Blackwater at this location are sufficiently high to absorb the discharged nutrients. Pearl mussel populations in the immediate area are therefore unlikely to be impacted by the WWTP output. The pearl mussel locations are approximately 4km downstream of the WWTP in Kanturk, on the Blackwater River.

The Appropriate Assessment demonstrates that the discharge will not adversely affect the integrity of the European Site(s) subject to the mitigation measures proposed, i.e. the inclusion of a phosphorous removal system being used at the WWTP.

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 discharge will not adversely affect the integrity, in terms of maintaining favourable conservation status of the qualifying interests of the European Site(s), having regard to its conservation objectives.

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

An EIS was not required for Kanturk WWTP 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**

I used the Public Authority Enforcement database to search details of the Office of Environmental Enforcement correspondence with the local authority. There are no open cases in respect of the WWTP in Kanturk at present.

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.

## **9. Submissions**

No submissions received in relation to this application.

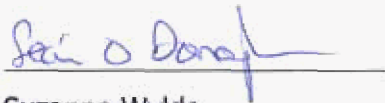
## **10. Charges**


The RL sets an annual charge for the agglomeration at €5,538.50 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



 Suzanne Wylde

Environmental Licensing Programme



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

