



**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:	27 th June 2014	
RE:	Application for a Waste Water Discharge Licence from Irish Water for the Newmarket & Environs agglomeration, Co. Cork, Reg. No. D0333-01.	

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 1,001 to 2,000
Licence application received:	27/02/2009
Notice under Regulation 18(3)(b) issued:	22/12/2009, 30/04/2010, 15/07/2010
Information under Reg.18(3)(b) received:	01/06/2010, 04/07/2011, 16/04/2014
Site notice check:	20/03/2009
Site visit:	05/02/2014
Submissions Received:	None

1. Agglomeration

This application relates to the Newmarket & Environs agglomeration in County Cork. The application was originally made by Cork County Council and subsequently transferred to Irish Water on 1st January 2014 under the Water Services (No. 2) Act 2013.

The Newmarket & Environs agglomeration had a population equivalent (p.e.) of 1,100 in 2012. 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 agglomeration is served by a secondary level WWTP with a design capacity of 1,600 p.e. Old percolating filters designed for 600 p.e. and a new extended aeration package plant designed for 1,000p.e. The WWTP consists of inlet works, automatic screening and flow is then split into two streams. One stream flows to 2 no. primary settlement tanks, a percolation filter and 2 no. humus tanks and the other stream flows to an extended aeration package plant (aeration and clarifier). Flow is then recombined before discharge to the River Dalua. There is a storm water holding tank and 5 no. sludge drying beds which are used as sludge holding tanks. There is no chemical dosing for phosphorus removal. There is no flow meter and no final effluent composite sampler in place at the WWTP.

Newmarket sewerage scheme was included on the Water Services Investment Programme (WSIP) 2007 – 2009 but has not been included in WSIP 2010-2012. The

applicant has prepared a preliminary report for the sewerage scheme to include upgrade and repair to foul sewer and storm water network, increase storm water holding tank capacity, replace undersized humus tank with a circular clarifier, repair cracks in walls of primary settlement tank and repair sludge holding tanks.

2. Discharges to waters

Primary Discharge

The primary discharge (SW001) is the piped outfall from the WWTP to the Dalua River, adjacent the WWTP. At 95%ile flow of the Dalua River (0.17m³/sec), there are approximately 39.7 dilutions available for the projected normal waste water discharge (0.0043m³/day). The estimated 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	4.3	15	11	-	-
WWTP Design standards	25	35	-	-	-

Secondary Discharges

There are no secondary waste water discharges from the agglomeration.

Storm water overflows

There are three storm water overflows from the agglomeration:

- SW002, at the inlet to the WWTP, post screening, which discharges to the River Dalua 5m upstream of SW001
- SW003 from Roundwall Pumping Station discharging to Newmarket Stream
- SW004 on the sewer network, on Boherbue Road adjacent to Tennis Courts, discharging to an open field drain approximately 570m from the Dalua River.

Schedule C of the RL requires SW004 to cease by 31st December 2019. Condition 4 of the RL requires the SWOs to comply with DoECLG criteria for SWOs.

Emergency overflows

There are no emergency overflows in the agglomeration.

3. Receiving waters and impact

The receiving water is the Dalua River which is located in 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	Dalua River IE_SW_18_394	
Relevant designations within 10km	Blackwater River (Cork/Waterford) SAC Site	Discharges directly into this SAC

	Code: 002170	
Drinking water abstraction within 10 km d/s	None	
EPA monitoring stations & Biological quality rating (Q value)	No suitable upstream station D/s station RS18D010200 330m d/s of SW001	Q4 in 2012
WFD status	Good	2011
WFD Risk Category	1a, water body at significant risk of failing objectives	2008
WFD Objective	Protect good status	2021 deadline
WFD protected areas	RPA drinking water groundwater	

There is no upstream water quality monitoring data for the Dalua River, in the vicinity of SW001, available. Downstream water quality monitoring data for the Dalua River supplied by the applicant in accordance with the Water Framework Directive is summarised in Table 3 below. The results show that BOD, Orthophosphate and Ammonia levels downstream of the primary discharge comply with the good status water quality standards in the Environmental Objectives Regulations 2009, as amended.

Table 3. Water Quality in the Dalua River

Parameter (mg/l)	RS18D010200 330m d/s of SW001 (12 samples, 2013)	Water Quality Standards ^{Note 1}
BOD	1.3	≤ 1.5 mg/l (mean)
Orthophosphate (as P)	0.02	≤ 0.035 mg/l (mean)
Ammonia (as N)	0.023	≤ 0.065 mg/l (mean)

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

Table 4 below summarises the mass balance calculations which show the impact of the primary discharge on the receiving water at a projected loading of 1,320.e. (1,100 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 as the background monitoring results are based on a limited number of samples and are greater than the water quality standards.

Table 4. 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	25	0.61	0.25	0.87	≤ 2.6
Orthophosphate (as P)	2 (from 2019)	0.05	0.005	0.05	≤ 0.075

Ammonia (as N)	4 (from 2019)	0.1	0.008	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 Orthophosphate as P and Ammonia as N, based on the ELVs included in the RL from 31st December 2019, would comply with the good status standards in the Environmental Objectives Regulations 2009, as amended.

The RL proposes an ELV of 25mg/l BOD, 125mg/l and 35mg/l Suspended Solids from date of grant of licence and proposes 2mg/l Orthophosphate as P and 4mg/l Ammonia as N, from 31st December 2019. There is no chemical dosing for phosphorus removal in Newmarket WWTP. Plants with chemical dosing for phosphorus removal can achieve 0.5 to 0.8mg/l Orthophosphate as P. Conventional activated sludge plants can achieve 2 to 5 mg/l Ammonia.

Newmarket WWTP is identified as a point pressure in the Blackwater Water Management Unit Action with risks related to 'insufficient existing capacity of treatment plan and insufficient future (2015) assimilative capacity'.

4. Site Visit

I visited the Newmarket agglomeration on 05/02/2014 and met with a representative of Irish Water. I visited the WWTP observed the primary discharge point and receiving waters. The applicant stated that hydraulic overloading due to infiltration in the sewer network was an on-going problem at the WWTP.

5. Ambient Monitoring

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

- Upstream: The location identified by Cork County Council is aSW-1u (grid ref. 130994E 106754N) is located approximately 100m downstream of SW001, and as it is downstream of SW001, it is unsuitable as an upstream monitoring location.

There is a National Monitoring Station (Station Code: RS18D010190) located 140m upstream of SW001 and this has been included in *Schedule B.2* of the RL.

- Downstream: The location identified by Cork County Council is aSW-1d (grid ref. 132454E 104564N) approximately 5km downstream of SW001.

There is a National Monitoring Station (Station Code: RS18D010210) located 270m downstream of SW001 and this has been included in *Schedule B.2* of the RL.

6. Programme of Improvements

There are no planned improvements proposed by the applicant for Newmarket WWTP. Operational improvements or an upgraded WWTP will be required to achieve ELVs of 2mg/l Orthophosphate and 4mg/L Ammonia from 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]	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 achieving good status water quality standards. No salmonid waters present. No shellfish waters present
Drinking Water Abstraction Regulations	No drinking water abstractions present.
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 not required for Newmarket WWTP.
Environmental Liability Directive	Condition 7.2 of RL

8. Habitats Directive [92/43/EEC] & 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 a European Site(s). In this context, particular attention was paid to the European site 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.

It has been determined that the activity does not have the potential for significant effects on a European Site due to the significant dilution available in the receiving water and the volume and quality of the effluent discharge.

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

A handwritten signature in black ink that reads "Loretta Joyce". The signature is written in a cursive style with a large initial 'L'.

Loretta Joyce
Inspector
Environmental Licensing Programme

Figure 1.0. Newmarket Agglomeration D0333-01

