

Athboy Waste Water Treatment Works

EPA Waste Water Discharge Licence Application

ARTICLE 16 COMPLIANCE REQUIREMENTS

Meath County Council

EPA Document Ref: D0124-01

Section A: Non-Technical Summary

- Update the non-technical summary to reflect the information provided in response to this notice.

An updated non-technical summary is attached in appendix 1.

Section B - General Information

- Please provide the name of the agglomeration to which the Waste Water Discharge Licence Application relates. The agglomeration named in the application refers to the waste water treatment plant. Please also amend, if necessary, the name of the agglomeration on the Waste Water Licensing Web based data tool;

*Agglomeration name: Athboy, Rathcormick and their Environs
The name of the agglomeration on the Waste Water Licensing Web based data tool has been amended.*

- Provide the most recent planning permission including a copy of all conditions and where an EIS was required, copies of such EIS and any certification associated with the EIS.

Attached in appendix 2 is a certificate from Meath County Council confirming that the Part VIII planning document (File Reference: P803029) was passed on the 1st March 2004.

As per S.I. No 600/2001, Planning and Development Regulations, 2001, Schedule 5, Part 2, an EIS is only deemed necessary for 'Wastewater treatment plants with a capacity greater than 10,000 population equivalent as defined in Article 2, point (6), of Directive 91/271/EEC not included in Part 1 of this Schedule'.

The upgraded Athboy WwTW will have the capacity to cater for a maximum population of 5,800. As this does not exceed the threshold criteria for the provision of an EIS, as set out above, an EIS was not required.

Section C: Infrastructure and Operation

- In relation to the plant which is currently in operation, provide a description of the plant, process and design capacity for the areas of the waste water works where discharges occur, to include a copy of such plans, drawings or maps, (site plans and location maps, process flow diagrams), and such other particulars, reports and supporting documentation as are necessary to

describe all aspects of the area of the waste water works discharging to the aquatic environment. Maps and drawings must be no larger than A3 size.

The existing wastewater treatment works was built in 1980. It is an extended aeration process with a design capacity of 2,500 p.e. The existing population equivalent is estimated as 3,286. The existing wastewater treatment plant is currently hydraulically overloaded during wet conditions. However, it continues to provide a high level of treatment during both wet and dry weather conditions.

The current operational plant, as per drawing No. 20285-DL-AY-13 (Appendix 4) consists of;

- *1 No. Aeration Tank (outer circle of combined Circular Oxidation / Clarifier Tank) with Surface Aerator*
Dimensions: 7 m internal width x 2.1m depth
Surface Area: 395.9 m²
Volume: 831.3 m³
- *1 No. Clarifier (inner circle of combined Circular Oxidation / Clarifier Tank)*
Dimensions: 11m internal diameter x 2.1 m side wall depth
Surface Area: 95 m²
Volume: 199.5 m³
- *Control Room*

The effluent is pumped, from the existing pump station in the town via the existing rising main, directly to the extended aeration basin. Here it is aerated using a surface aeration system in a combined Circular Oxidation/Clarifier Tank. In the clarifier the sludge settles, allowing the clear, treated effluent to be discharged to the Athboy River.

Some of the settled sludge is returned to the aeration tank, via the RAS pumps. The remaining sludge (WAS – Waste Activated Sludge) is drawn from the clarifier to the sludge holding tank. From here the sludge is tankered to the main Sludge Acceptance Centre for County Meath, at Navan WWTW.

The latest County Council sampling results from the Athboy WwTW are as per table 1.1;

Date	03-Sep-08	02-Oct-08	11-Nov-08	18-Dec-08	14-Jan-09	17-Feb-09	05-Mar-09	31-Mar-09
Parameter	Inf	Inf	Inf	Inf	Inf	Inf	Inf	Inf
BOD mg/l	375	275	180	60	90	123.5	149.5	135
COD mg/l	475	366	681	120	361	324	347	272
TSS mg/l	522	241	68	192	386	233	163	105
Tot P mg/l	6.34	5.63	6.2	2.15	4	4.89	5.71	4.29
Tot N mg/l	61.6	27.9	44.6	16.1	21.8	41.6	48.1	34.1
Parameter	Eff	Eff	Eff	Eff	Eff	Eff	Eff	Eff
BOD mg/l	4	4.8	7.4	9.3	4.45	11.15	2.8	0.85
COD mg/l	39	31.2	39.5	23	36.9	28.3	21	21.7
TSS mg/l	7.6	23.2	15.2	23.2	10	30.4	6	23.2
Tot P mg/l	0.704	0.641	0.791	0.484	0.68	0.766	0.386	0.67
Tot N mg/l	14.3	20.5	7.98	5.95	13.6	7.12	6.89	5.76

Table 1.1 Meath County Council Effluent Results for Athboy WwTW September 2008 – March 2009

As can be seen from the results above, the effluent standard currently being achieved is consistently within the statutory requirements.

Please note that the new treatment works facility is due to be operational by March 2010.

- For pumping stations within the agglomeration at Athboy and Rathcairn, clarify which pumping stations are still to be commissioned. In relation to RA2 and RA1 (Rathcairn) provide details of emergency overflows;

The following pumping stations in Rathcairn are still to be commissioned;

	Current Status	Completion Date
RA1	<i>In construction</i>	<i>June 2010</i>
RA2	<i>In construction</i>	<i>June 2010</i>
RA3	<i>Package plant (ordered)</i>	<i>June 2010</i>
RA4	<i>Package plant (ordered)</i>	<i>June 2010</i>

Pumping stations RA2 and RA1 do not have emergency overflows.

- Clarify the basis for your confirmation that the storm water overflow does not comply with the definition of a storm water overflow as per, 'Procedures and Criteria for Storm Water Overflows', published by the Dept. of the Environment, 1995 as stated in Table E.1 (ii) i.e. provide details of any hydraulic modelling, discharge monitoring/inspection data or design discharge frequency of storm water overflow. Provide a detailed timescale for compliance of the SWO.

As confirmed in section C1.3, page 40 of the licence application, the storm water overflow, SW2, complies with the 'Procedures and Criteria for Storm Water Overflows', published by the Dept. of the Environment, 1995. Table E.1 (ii) has been changed.

No details of any hydraulic modelling, discharge monitoring/inspection data or design discharge frequency of the storm water overflow are available.

- Outline the transfer and final destination arrangements for the dewatered sludge.

At present, EPS Ltd. are responsible for operating and maintaining the existing Athboy WwTW. They transport liquid sludge to the sludge centre at Navan WwTW. Here it is dewatered, lime stabilised and then transported to Carrollstown Estate where it is stored and ultimately land spreading on arable landbanks before ploughing of lands for winter / spring sowing of cereal crops.

The new Athboy WwTW will be operated and maintained by EPS Ltd. It is planned to deal with sludge in the same manner as at present. The new WwTW will have sludge dewatering facilities and hence, dewatered sludge rather than liquid sludge will be transported to Navan WwTW.

Section D: Discharges to the Aquatic Environment

- Provide date(s) when all monitoring was carried out in Table D.1 (i)(b) and Table D. 1 (i)(c);

The monitoring was carried out on the 19th and 20th August 2008. The results entered are the average over the 2 days sampling.

Section E - Monitoring

- Assimilative capacities - provide workings in relation to Suspended Solids.

The allowable level of suspended solids in the effluent from both the existing and upgraded wastewater treatment plants is 35mg/l.

WWTP Flow (m³/day) = 3,915 m³/day

Level S.S. = 35mg/L

*Effluent load to the River;
(35 x 3,915)/1000 = 137.025kg/d*

95%ile Flow of River Nanny = 0.17m³/s

*Increase in River concentration @ 95%ile flow;
{137.025 x 10⁶/[0.06 x (3600 x 24)]}/1000 = 9.33mg/L*

There is no background monitoring of suspended solids in the river. However, the increase in suspended solids due to the effluent is low relative to the limit of 35mg/L.

As per table 1.1 above, 100% of the Meath County Council Final effluent samples since September 2008 were significantly below the required 35mg/L TSS, therefore the effluent limit of 35mg/L is considered acceptable.

- In relation to Dangerous Substances Monitoring at the upstream monitoring location, comment on the high selenium concentration result from 20/08/08 (140ug/l) providing possible explanations for the high concentration;

The entry of 140ug/l is a figurative error. The selenium measured on the 20/08/09 was 2ug/l. This has been edited on the web based data tool.

Section F: Declaration

- Determine if there is likely to be a significant impact from the waste water discharges (primary and storm overflows) on the Natura 2000 site (SAC). You shall use the flow diagram in Circular L/08, issued by Water Services Section, Department of Environment, Heritage and Local Government, to assist in this determination. Provide answers to each question on this flow diagram in addition to the final answer. If there is likely to be a significant impact on the Natura 2000 site, based on the flow diagram referenced above, then you must undertake an appropriate assessment. This assessment should address the impacts of the waste water discharges and proposed mitigation measures with respect to the conservation objectives of the Natura 2000 site in the vicinity of the waste water discharges. A copy of the circular is attached.

An appropriate assessment is to follow.

Section G: Programme of Improvements

- Provide an update on progress with construction and commissioning of the new wastewater treatment plant and pumping station (s)

The new wastewater treatment plant is due to be completed, commissioned and fully operational in March 2010.

The pumping stations in Rathcairn will be operational in June 2010.

Section H: Declaration

- Complete Section H: Declaration and scan the signed declaration for electronic submission.

A signed copy of Section H is attached in appendix 3.

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APPENDIX 1 UPDATED NON-TECHNICAL SUMMARY

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1.0 The waste water works and the activities carried out

1.1 Introduction

The waste water works serving the town of Athboy comprises of a network of sewers, a main pumping station and a wastewater treatment facility. The wastewater treatment facility, currently under construction, is replacing the older facility that was built during the 1980's and is now overloaded. The new wastewater treatment plant is due to be completed in March 2010. The associated pumping stations in Rathcairn are due to be commissioned in June 2010.

Athboy town is located in the western part of County Meath. It is situated on the N51 between Drogheda and Mullingar and on the R154 between Trim to Oldcastle. Athboy lies 13 km from both Trim and Kells and 19 km from Navan. The Athboy River runs through the town. The River Athboy runs through the town. The present population equivalent is approximately 3,286.

There are two main pumping stations within the scheme; Athboy and Rathcairn. The new main Athboy pump station is adjacent to the site of the existing Athboy main pumping station. Once constructed, the pumping station will be capable of pumping flows up to a maximum of 162.5l/s to the wastewater treatment plant. The Rathcairn main pumping station receives flows from three small secondary pumping stations within Rathcairn. These flows are transferred via a rising main and subsequently a gravity foul sewer to the inlet works in Athboy.

The existing wastewater treatment works was built in 1980. It is an extended aeration process with a design capacity of 2500 p.e. The present population The present population is approximately 3,286. The existing wastewater treatment plant is currently overloaded.

The new wastewater treatment plant at Athboy includes storm tanks, inlet works, anaerobic, anoxic and aeration tanks, a sludge pumping station, sludge holding tank, sludge dewatering building, administration building etc. All of which are contained within a land area to the south of the town. Discharge is to the Athboy River. The plant has been sized for 5,800pe to accommodate flows from Rathcairn. Access is via an access road off the Trim road.

1.2 Description of Waste water treatment works

The treatment plant consists of preliminary treatment and secondary biological treatment with nutrient removal and will be designed to cater for a population equivalent of 5,800. Over all the plant will include the following;

Sewer network

The wastewater collection and disposal system discharges by gravity to the main pumping station in the town. From here it is pumped to the wastewater treatment plant. This collection system and pumping station is being upgraded to cater for the projected population in the town.

Pump Stations

Athboy Pumping Station

- 3No foul pumps - (Duty/Assist/Standby)
- Mechanical Storm screen (mesh size = 6mm)
- Pump sump over flow with Flap/Non-return valve

The wastewater is pumped from the main pump station to the treatment plant proper via 2No. 300mm diameter rising mains. In the event of pump failure, power failure or extreme storm conditions the pump sump will overflow through a 6mm mechanical mesh screen and out to the river Athboy via a 600mm diameter overflow pipe.

Rathcairn Pumping Station (Main) – RA2

- 3No foul pumps - (Duty/Assist/Standby)

The Rathcairn main pumping station receives gravity flows from three neighbouring secondary pumping stations. These flows are transferred via a rising main and subsequently a foul sewer to the inlet works in Athboy. There is no emergency overflow facility from this pumping station.

Rathcairn Pumping Station – RA1

- 2No foul pumps - (Duty/Standby)

Flows are transferred by means of a rising main and subsequently a foul sewer to the main pumping station RA 2. There is no emergency overflow facility from this pumping station.

Rathcairn Pumping Station – RA3

- 2No foul pumps - (Duty/Standby)

Flows are transferred by means of a rising main and subsequently a foul sewer to the main pumping station RA 2. There is no emergency overflow facility from this pumping station.

Rathcairn Pumping Station – RA4

- 2No foul pumps - (Duty/Standby)

Flows are transferred by means of a rising main and subsequently a foul sewer to the main pumping station RA 2. There is no emergency overflow facility from this pumping station.

Treatment Plant

- 2 No. automated (6mm) Inlet Fine Screens, including screenings washing/dewatering
- 1No. Grit removal unit
- 1No grit removal classifier
- Storm tank including storm return pumps
- 3 No. Sequential Batch Reactors
- Chemical dosing for Phosphorous removal
- Sludge Picket Fence Thickener
- Acceptance Tank for imported sludge's complete with 1 No. Liquid sludge's screen
- Dewatering System - 2 No. Centrifuges
- Final Effluent flow measurement and automatic sampling
- Odour and noise controls
- Inlet Lift Pump Station
- Preliminary treatment – to include screening and grit and grease removal
- Biological treatment and phosphorus removal
- Liquid sludge storage
- Sludge dewatering and cake storage
- Storm treatment

2.0 The sources of emissions from the waste water works

Primary Discharge – Effluent Outfall – Treatment Plant proper

Treated effluent will be discharged from the wastewater treatment plant to the Athboy River via a single outfall. It shall be below the water level of the river at all times of the year and shall include a diffuser on the outlet.

Storm Water Overflows

The primary discharge pipe is designed to incorporate the screened storm tank overflow.

Secondary Discharge – Effluent Outfall – Pumping Station

Not applicable.

Existing Sewerage Network Overview

The wastewater collection and disposal system discharges by gravity to the main pumping station in the town. From here it is pumped to the wastewater treatment plant. This collection system and pumping station is being upgraded to cater for the projected population in the town.

3.0 The nature and quantities of emissions from the waste water works (into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment)

The existing plant has a design capacity of 5,800pe and a design effluent quality (to the primary discharge point) as follows;

Parameter	Concentration
BOD ₅ (mg/L)	25
Total Suspended Solids (mg/L)	35
COD (mg/L)	125
Total Nitrogen (mgN/L)	20
Total Phosphorus (mg/L P)	1.0

As can be seen, the Athboy treatment facility complies with the requirements of the Urban Waste Water Directive, which stipulate;

- BOD ≤ 25mg/L
- Total suspended solids ≤ 35mg/L

4.0 Identification of significant effects of the emissions on the environment

Provision of this performance based treatment system will significantly improve the quality of the effluent to the adjacent River Athboy. The Treatment Works will be required to meet the effluent quality standards as set out in the Urban Wastewater Treatment Regulations, 2001 and in all current regulations governing discharges to freshwaters.

The waste assimilative capacity calculations, included in Attachment F1, show that the effect of the emissions is acceptable.

5.0 The proposed technology and other techniques for preventing or reducing emissions/pollution from the waste water works

The main treatment plant is adjacent to the site of the existing treatment plant. The existing wastewater treatment works was built in 1980. It is an extended aeration process with a design capacity of 2500 p.e. The existing population equivalent is estimated as 3,286. The existing wastewater treatment plant is currently overloaded but consistently produces a good quality final effluent.

A DBO contract to design, build and operate the new Athboy main pumping station and Athboy wastewater treatment plant commenced in November 2007. The contract was awarded to EPS. EPS took over the operation of the existing plant in March 2008. Commissioning and operation of the new plant is due to commence in December 2009. It is expected to be completed by March 2010. Under the DBO contract, EPS Ltd. will be responsible for the operation and maintenance of the new WwTW and all pumping stations in Athboy and Rathcairn for a further 20 years (i.e. until 2030).

6.0 Measures planned to monitor emissions into the environment

As a minimum the following instrumentation is being provided in the new treatment plant;

- (i) pH measurement of influent and effluent.
- (ii) Flow measurement for influent, flow to full treatment, flow to storm tank, storm return, final effluent, return activated sludge, surplus (waste) activated sludge, supernatant return and flow to dewatering.
- (iii) Dissolved oxygen and suspended solids measurement shall be provided for each biological treatment unit.
- (iv) Ultrasonic level measurement in all pump sumps, the stormwater tank and in the sludge holding tank.

In addition, fixed refrigerated automatic flow proportional composite samplers shall be provided for the influent and effluent.

7.0 Other

The existing wastewater treatment plant has provided effective wastewater treatment for Athboy. EPS Limited is operating the existing wastewater treatment plant until the new wastewater treatment plant is completed and operational in March 2010. The new wastewater treatment plant and main

pumping station will provide effective treatment of wastewater from Athboy and Rathcairn with a capacity which is anticipated to be sufficient for a 20-year horizon. The provision of increased capacity at the main pumping station in Athboy will reduce the potential for any stormwater overflows within the sewer network. The pumping stations in Rathcairn are designed to prevent overflows. The new WwTW has been designed and is being built to facilitate a future phase 2 expansion to 11,600 PE, should the need for same arise.

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APPENDIX 2

PLANNING PERMISSION

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Comhairle Chontae na Mí

Halla an Chontae, An Uaimh, Contae na Mí
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Meath County Council

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Corporate Services Section

10th March 2009

I hereby certify that the members of Meath County Council, at the Monthly Meeting on 1st March, 2004 resolved to consider report in accordance with Part VIII of the Planning & Development Regulations, 2001 in respect of the construction of a new wastewater treatment works to serve Athboy.

The Part VIII was passed on the proposal of Councillor Liz McCormack and seconded by Councillor Seamus Murray.

Councillor Oliver Brooks presided.

Signed:


Bill Sweeney
Senior Executive Officer

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APPENDIX 3

SECTION H: DECLARATION

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SECTION H: DECLARATION**Declaration**

I hereby make application for a waste water discharge licence/revised licence, pursuant to the provisions of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).

I certify that the information given in this application is truthful, accurate and complete.

I give consent to the EPA to copy this application for its own use and to make it available for inspection and copying by the public, both in the form of paper files available for inspection at EPA and local authority offices, and via the EPA's website.

This consent relates to this application itself and to any further information or submission, whether provided by me as Applicant, any person acting on the Applicant's behalf, or any other person.

Signed by : Eugene Commins
(on behalf of the organisation)

Date : 19th MAY 2009

Print signature name: EUGENE COMMINS

Position in organisation: DIRECTOR OF SERVICES

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APPENDIX 4

Drawing: Existing Works

20285-DL-AY-13

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