

Castleblayney Waste Water Treatment Works

EPA Waste Water Discharge Licence Application

ARTICLE 16 COMPLIANCE REQUIREMENTS and REGULATION 12 REQUIREMENT

Monaghan County Council

EPA Document Ref: D0205-01

REGULATION 16 COMPLIANCE REQUIREMENTS

1. Update the non-technical summary to reflect the information provided in response to this notice and amend references to 'River Boyne'.

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

2. Please provide the name of the agglomeration to which the Waste Water Discharge Licence Application relates. Please also amend, if necessary, the name of the agglomeration on the Waste Water Licensing Web based data tool.

Agglomeration Name: Castleblayney and Environs

The name of the agglomeration on the Waste Water Licensing Web based data tool has been amended.

3. Reference is made to an Environment Impact Statement (EIS) currently being prepared in respect of plant upgrade, provide an update on progress towards completion of the EIS and identify a completion date, if completed please submit copies. Clarify the timescale for completion of plant upgrades with particular reference in the Water Services Investment Programme 2007-2009 which identifies the scheme as commencing in 2008.

The Environmental Impact Statement is currently at final revision stage. Currently it is awaiting approval from Monaghan County Council and once fully approved it will be submitted to An Bord Pleanala. It is due for submission to An Bord Pleanala in August 2009.

Yes, the Water Services Investment Programme 2007-2009 indentifies the scheme as commencing in 2008. However, under the current economic climate, construction is unlikely to commence before 2015. Following Part VIII approval, construction will take be completed over a 2 year construction period (approximate).

4. Provide justification for not using the maximum population equivalent (weekly) calculated in the Table entitled 'Seven Day Flow & Load Survey: Castleblayney WWTP'.

The maximum population equivalent calculated in the Table entitled 'Seven Day Flow & Load Survey: Castleblayney WWTP', page 22 of 37, is 10,370 p.e. The average population equivalent (weekly) calculated in the Table was 5,692 p.e. Given the relatively small size of the town and the lack of wet industries, it is felt

that the average p.e. calculated from the 7 day flow and load survey is more reflective of the population equivalent loading on the plant rather than the population of the town. Higher loads to the works can occur during periods of heavy rainfall due to washout of the sewer network. A storm tank is provided at the existing works to balance these loads. The p.e. calculated for 2015 (the life span of the discharge licence) is based on the current population figure. It must be noted that the flow and load survey only took place over a 7 day period and is only an indicator to the flow and load trends of the plant. All aspects of the 2015 population equivalent have been thoroughly assessed and it is felt that this p.e. figure is a better representation of the flow and load to the plant in 2015. The revised WAC calculations, in Appendix 3, are based on the 2015 p.e. of 8,519.

Please note that the plant is currently designed to cater for a population equivalent of 12,960.

5. Provide an update on the funding for the proposed upgrade and provide a copy of the 'Preliminary Report' and any responses from the DoEHLG in relation to the report.

The Water Services Investment Programme 2007-2009 indentifies the scheme as commencing in 2008. However, under the current economic climate, construction is unlikely to commence before 2015. At that time Part VII planning will be sought, following approval, construction will take completed over a 2 year construction period (approximate).

The Preliminary Report is currently at draft stage. The report is currently receiving final edits and is to be submitted to Monaghan County Council for final approval. Upon final approval by MCC, it will be submitted to An Bord Pleanala.

6. Complete Section F.2 Tabular Data on Drinking Water Abstraction Point(s) in respect of abstraction from Lough Ross (Newry Water Treatment Plant) and River Fane (Enniskeen Water Treatment Plant). Provide details in relation to the zone of contribution and potential risks from the waste water discharge on water quality for all abstractions identified. In addition re-submit Drawing no. 15 identifying all abstraction points.

The completed Section F.2 Tabular Data on Drinking Water Abstraction Point(s) in respect of abstraction from Lough Ross (Newry Water Treatment Plant) and River Fane (Enniskeen Water Treatment Plant) is attached in Appendix 2.

There are drinking water abstractions from;

1. Lough Ross, treated at Newry Water Treatment Plant, approximately 7.5 km downstream,
2. River Fane, treated at Inniskeen Water Treatment Plant, approximately 16km downstream
3. River Fane, treated at Dundalk Water Treatment Plant, towards the mouth of the river.

The secondary treatment process at the main WwTW considerably reduces the quantity of faecal coliform, salmonella and protozoan pathogens. As the Water Treatment Plants range from 7.5 to 16 kilometres downstream from the discharge point, the final effluent discharge will be substantially diluted. Storm water overflow to the receiving waters only occurs in conditions of extremely high flows and therefore there will also be a large dilution factor into the receiving waters and will not affect the quality of the water abstraction at any of the water treatment plants.

A revised Drawing no. 15 is attached in Appendix 5.

7. Amend G.3, as appropriate, to reflect the situation with respect to the Castleblayney waste water works, clarify the statement that 'there are currently no plans/timetables for any capital works, recommendations have been made in the preliminary report'.

G.3 Impact Mitigation

Provide details on a programme of improvements to ensure that discharges from the agglomeration will not result in significant environmental pollution.

It is not considered that the current Wasterwater Treatment Works in Castleblayney cause significant environmental pollution. Nor will they cause any significant environmental pollution if the projected 2015 population equivalent is realised.

Although the Water Services Investment Programme 2007-2009 identifies the scheme as commencing in 2008, currently, there is no timetable for any capital works. However, recommendations have been made in the preliminary report which has been submitted for approval. As stated above, under the current economic climate, Monaghan County Council have stated that construction is unlikely to commence before 2015. In general, following Part VIII approval, construction will be completed over a 2 year construction period (approximate).

8. The figures presented in Table D. 1 (i)(a) for 'normal/day' and 'maximum/day' do not match the figures presented for January 2007 section B.9.1, Attachment C.1, or the figures used in the assimilative capacity calculations. Please clarify what are the appropriate figures and amend the relevant sections as necessary, in particular amend the assimilative capacity calculations to reflect the appropriate figures.

Figures for 'normal/day' and 'maximum/day' are as follows;

'normal/day' = 1,1916.78 m³/day (DWF)
'maximum/day' = 5,750.34 m³/day (3DWF)

These figures are not as per the figures presented for January 2007 Flow and Load Survey, section B.9.1. The above figures are as per the revised WAC calculations, Appendix 3.

Table D. 1 on the web based licensing tool has been amended.

9. Clarify the source of the dichloromethane figure presented in Table D. 1 (i)(c), assess compliance with the Water Quality (Dangerous Substances) Regulations 2001 and identify measures undertaken to address the elevated concentration identified.

The dichloromethane figures presented in Table D. 1 (i)(c), and F.1(i)(b) are incorrect. On investigation it was discovered that there had been an error on behalf of the laboratory in question.

The figures have been amended on the web based tool and now comply with the Water Quality (Dangerous Substances) Regulations 2001.

The confirmation email from the laboratory and the corrected results are attached in Appendix 6.

10. Clarify the number of combined sewer overflows in the agglomeration and outline works completed to remove the combined sewer overflows identified in the Castleblayney Catchment Report.

A CCTV survey was completed in 2007 and only 3 No combined sewer overflows in Castleblayney were identified as follows;

- 1. Drumillard CSO – THIS WAS REMOVED IN SEPTEMBER 2008*
- 2. Main Roundabout CSO*
- 3. Dundalk Rd. CSO*

The source of the information for the catchment report is not known. From the information obtained for the Preliminary Report, the catchment report is incorrect.

11. Clarify the 'frequency of discharge (day/annum)' as presented in Table E. 1 (ii).

Effluent is discharged to Lough Muckno from the WwTW on a continuous basis. Therefore, the frequency is 24 hours per day per year.

12. Assess the design criteria of the storm water overflows. Demonstrate (providing available evidence) whether all storm water overflows meet the design criteria established in 'Procedures and Criteria for Storm Water Overflows', published by the Dept. of the Environment, 1995. Clarify whether there are screens on all of the overflows and identify any SWOs that may be impacting on surface water quality. Where a storm water overflow does not comply with these guidelines, give details of the plans, for improvement.

In relation to obtaining the Waste Water Discharge Licence, there have been 3 No. storm water overflows were identified in the Application. However, only the Monaghan Road Roundabout CSO discharges directly to Lough Muckno. It discharges at a single point in the receiving waters, at SW2.

The Drumillard CSO was removed in September 2008. The 3rd Stormwater Overflow at Dundalk Road does not discharge to the surface water system. This CSO spills over a weir and into a 225mm diameter sewer that gravitates back down to the Dundalk Road Pumping Station. The system utilises the storage capacity provided by the pumping station to eliminate the risk of surcharging and flooding in the area.

Storm water Overflow: SW2

Location: Lough Muckno

National Grid Reference: E282879, N320154

As discussed above SW2 is the only stormwater discharge point from the Network in Castleblayney. 2No CSOs from the town discharge, through the storm water network, to this discharge point. They are discussed below;

1. Monaghan Road Roundabout CSO

Description: The combined sewer overflow is located on a 375mm diameter concrete combined sewer at the Monaghan Rd/Main St junction roundabout. The catchment upstream of the overflow consists of much of the south, west and centre of the town and would be partially combined.

The overflow consists of a single broad-crested concrete wall weir set at a height of 580 mm above the invert of the incoming 450mm sewer off Main St. A penstock on the inlet sewer is stuck in position but does not appear to be interfering with the flow. Excess storm flows go over the weir and into a 450mm storm sewer, which runs along Monaghan Rd and through the Oliver Plunkett estate in Drumillard.

There is no screen on this SWO.

Compliance of SWO 2 with the Urban Waste Water Directive 91/271/EEC:
Formula A, as detailed in the Urban Wastewater Treatment Directive 91/271/EEC, relates to storm overflows within the sewerage network. There is one storm overflow within the sewerage network as detailed above.

*P = design domestic population = 3,003 PE
E = design industrial effluent flow = 591.84 m³/day
DWF = Design dry weather flow = 1,916.18 m³/day*

Formula A = DWF + 1.36P + 2E
Formula A = (1,916.18 m³/day) + (1.36x3,003) + (2x591.84)
Formula A = 7,183.94 m³/day (83.15L/s)

The capacity of the out going 375mm pipeline, at a roughness value of 1.5, is 175.83l/s. As this is greater than that calculated for Formula A above, Roundabout CSO is in compliance with the Urban Wastewater Treatment Directive; Procedures and Criteria in relation to Storm Water Overflows.

13. In relation to the pumping stations provide the following details:

- (i) The emergency power generation capacity and standby pumping capacity at the pumping station (in the event of power failure or pump malfunction);

Emergency power is only provided at the Muckno Street pumping station.

The Generator is a 55KVA Stamford generator.

- (ii) The measures to be undertaken in the event of a power failure or pump malfunction;

The pumps at the pumping stations are controlled at the pump station only. There is an alarm out facility for each of the pump stations. This alerts the caretaker, via his mobile phone, that the overflow has been activated and he will deal with the problem locally. The pump stations are checked regularly by the caretaker.

However, generally speaking, notification is given in the event of any power outages and generators would be organised to provide temporary power for those without generator back-up.

- (iii) The storage capacity, and storage time in minutes, at the pumping station; and

PUMPING STATION SUMMARY				
Pumping Station	Storage Capacity (Volume)	Storage Capacity (Volume)	Storm Water Holding Tank (Volume)	Storage Capacity
	Wet Well Volume (m³)	Wet Well Volume (L)	Volume (L)	(Time - minutes)
Monaghan Road PS	10.6	10,600	n/a	14 mins
Muckno Street PS	23.7	23,700	n/a	5 mins
Ashview Court PS	2.2	2,200	n/a	No pump rate available
Laurel Hill PS	15.7	15,700	n/a	No pump rate available -
Crescent Hill PS	27.4	27,400	n/a	50 mins
Castlecoole PS	31.2	31,200	n/a	19 mins
Kockturnagh PS	10.2	10,200	n/a	20 mins
Conbury Hill PS	16.1	16,100	36,000	No pump rate available
Dundalk Road PS	15.5	15,500	36,000	3hs 2 mins

- (iv) Clarify whether the emergency overflow from the pumping station has been known to activate in the last 12 months. If so provide the reason for the activation, and give details of the frequency, duration and discharge volumes, where available.

The following pumping stations have an emergency overflow:

- Dundalk Road PS
- Castlecoole PS
- Conbury Hill PS
- Laurel Hill PS

From discussions with the Caretaker, these overflows have been activated in the last 12 months. As there is no facility to record the frequency, duration and discharge volumes we are reliant on his information. The overflows have been activated on 1 or 2 occasions. In general he has found that they are instigated by pump malfunctions.

14. Clarify and justify the background concentrations for all parameters identified in the assimilative capacity calculations, in particular identify the source of the median background ortho-phosphate figure of 0.2mg/l. Recalculate the assimilative calculations based on revised background figures that reflect the concentration upstream of the discharge, as necessary. In addition address the reference in the Castleblayney Catchment Report that there was elevated orthophosphate and nitrate upstream of the discharge.

Background concentrations for all parameters were taken from the 1998-2000 EPA Water Quality Statistical Data at station No. 0200, Derrycreevy Bridge. The WAC calculations have been revised using the latest 2001- 2003 EPA

Water Quality Statistical Data from the same station. The revised WAC calculations are attached in Appendix 3. All hydrometric data is shown below:

	1998-2000 EPA Water Quality Statistical Data	2001-2003 EPA Water Quality Statistical Data
<i>C_{back} BOD</i>	1.9 mg/L	1.8 mg/L
<i>C_{back} Phosphorus</i>	0.03 mg/L	0.02 mg/L
<i>C_{back} Ammonia</i>	0.04 mg/L	0.04 mg/L

The EPA Water Quality Statistical Data 2001-2003 at station No. 0200, Derrycreevy Bridge is attached in Appendix 4.

The EPA has 2 monitoring stations up and down stream of the treatment works. Station No 0200, Derrycreevy Bridge, is up stream of the works. Station No 0300, Clarebane Bridge, is downstream of the works. These stations have a Biological Quality Rating of Q3.

The EPA Water Quality Statistical Data 2001-2003 recorded the median values for Ortho-phosphate and Nitrate in the receiving water as follows;

	Q- Value	Ortho-phosphate	Nitrate
<i>Station No 0200, Derrycreevy Bridge</i>	Q3	0.02	0.8
<i>Station No 0300, Clarebane Bridge</i>	Q3	0.03	1.1

Ortho-phosphate

The ortho-phosphate results recorded are with keeping with the Phosphorous Regulations target values of maximum 0.03mg/L. The increase is minimal and will not have an adverse affect on the water quality.

Nitrate

Generally speaking, nitrogen is not a limiting factor in inland waters. The level of Nitrate recorded is in accordance with regulations. There is a slight increase upstream but this is minimal and will not have an adverse affect on the water quality.

15. On page 55 of 58 of the licence application it is stated that a modelling report is currently being drafted, provide a copy of the model report.

The modelling report is part of the Preliminary Report. As stated previously, the Preliminary Report will be submitted to the EPA once approved by Monaghan County Council.

REGULATION 12 REQUIREMENT

I am to advise you of a failure of compliance with Regulations 11(c), of the Waste Water Discharge (Authorisation) Regulations 2007. In particular a site notice shall be erected or fixed in a conspicuous position adjacent to a public road at the point nearest to the waste water treatment plant, so as to be easily visible and legible by persons using the public road and shall not be obscured or concealed at any time.

The Agency therefore requires you, in accordance with Regulation 12 of the regulations, to;

- Erect and maintain a site notice in a conspicuous position adjacent to the public road, for a period of at least one month in accordance with Regulation 11 of the Waste Water Discharge (Authorisation) Regulations 2007; and
- Submit a site map showing the location of the site notice, a dated photograph of the site notice in position and a copy of the text of the site notice.

The site notice was erected on Muckno street on the 30th April 2009 for a period of one month.

The site map showing the location of the site notice, a dated photograph of the site notice in position and a copy of the text of the site notice are attached in Appendix 7.

*For inspection purposes only.
Consent of copyright owner required for any other use*

APPENDIX 1

REVISED NON-TECHNICAL SUMMARY

*For inspection purposes only.
Consent of copyright owner required for any other use.*

NON-TECHNICAL SUMMARY

1. The waste water works and the activities carried out

1.1 Introduction

Castleblayney is the third largest town in County Monaghan and is located approximately 23 km southeast of Monaghan Town. The town is situated in the east of County Monaghan close to the border with County Armagh and Northern Ireland and is on the N2 National Primary Route between Dublin and Derry. The principal feature of Castleblayney is the attractive Lough Muckno, which is Monaghan's largest lake.

In the 2007 Monaghan County Development Plan, Castleblayney is identified as one of the five main towns in Monaghan and therefore is fundamental to economic growth and development in the county. The town serves as an important service centre to the large surrounding hinterland through its industrial and commercial facilities. The majority of the industrial facilities are located along the Monaghan Road, with smaller industrial areas also located at Killycard on the Shercock Road.

The drainage catchment in Castleblayney includes the main urban area and existing housing estates to the south and north-west of the town centre. The catchment also extends outwards to serve ribbon developments on all roads leading into the town. The area of the current drainage catchment is 249 ha. The urban area lies in a relatively flat area surrounded by drumlins, rivers and interglacial lakes.

Castleblayney Wastewater Treatment Works was built in 1983 and operates as an extended aeration plant. The WWTW has a treatment capacity of 12,960 p.e. (population equivalent), with a current plant loading of approximately 5,692 p.e. The WWTW is located to the north of the town, at Muckno Street and occupies an area of approximately 0.62 hectares.

The WWTW is managed full-time by a caretaker and part-time by a technician.

1.2 Summary of Wastewater Treatment Plant Units

Preliminary treatment is provided by means of a mechanical screen and automatic grit removal at the inlet works. Ferric sulphate is dosed to enhance phosphorus removal upstream of the aeration tanks. Treated effluent from the settling tanks (clarifiers) combines with settled, screened storm water discharge before discharging just upstream of Lough Muckno approximately 250 metres away from the treatment plant via an open ended outfall. Wasted sludge is

dewatered using a belt press and is not thickened prior to dewatering. It is bought off site for thermal drying. Refer to drawing 02, attachment C2.

The plant consists of the following main components:

Treatment Stage	Element	Description (dimensions, capacities etc)	No of Units
Preliminary	Screen	Mechanical coarse screen (30mm aperture)	1
	Grit removal	Vortex Grit Trap	1
	Flow monitor	Venturi flume at the plant inlet and outlet	2
	Storm water settlement	Rectangular Tank (capacity = 300m ³)	1
Primary	N/A	N/A	N/A
Secondary	Extended Aeration	Rectangular Aeration Tanks (total capacity = 3,600m ³)	2
	Settlement Tank	Circular Settlement Tanks (Surface area = 433m ²)	2
Tertiary	N/A	N/A	N/A
Ancillary	Phosphorus Removal	Chemical dosing for phosphorous removal	1
Sludge Treatment/Disposal	Dewatering	Single belt press estimated @ 100kg DS/hr, achieves 9% DS	1
Outfall	Pipe	250m long open ended outfall to Lough Muckno	1
Power Generation	N/A	N/A	N/A

1.3 Description of Waste water treatment process

Preliminary Treatment

Incoming waste water gravitates to the preliminary treatment system. This comprises storm water separation and treatment, screening and grit removal. Initially all incoming waste water is screened by a mechanically raked coarse screen (30 mm aperture). The total flow receiving secondary treatment at the WWTP is measured in venturi flumes at the plant inlet and outlet i.e downstream of the grit removal system and downstream of the final effluent sampling chamber, at the plant outlet. An automatic sampler has been installed at the plant inlet. In addition grab samples of the influent are routinely taken.

Secondary Treatment

Following preliminary treatment waste water flows up to 35 l/s gravitate to the secondary treatment system. Secondary treatment is provided by an activated sludge treatment process comprising a single stage extended aeration system. This consists of two rectangular aeration tanks designed for BOD removal and

nitrification, followed by two secondary settlement tanks and a return sludge system. Each tank is fitted with two 18 kW vertical shaft surface aerators. Flow from the aeration tanks gravitates to two radial flow settlement tanks fitted with rotating half bridge scraper mechanisms. Settled sludge gravitates to the nearby pumping station, while scum is removed automatically from the tank surface. A submersible pump is used to pump the return activated sludge to the aeration tanks. A separate submersible pump transfers surplus sludge to the dewatering press. Treated effluent which overflows from the secondary settlement tanks gravitates to an on site chamber where it combines with the settled storm water discharge. From there the treated effluent discharges to Lough Muckno at PSW1, via an open ended outfall. Ferric sulphate is dosed into the flow splitting chamber upstream of the aeration tanks, to bring about the chemical precipitation and removal of phosphates.

Sludge Treatment and Disposal

Sludge is not imported to Castleblayney WWTP for treatment. Indigenous sludge is dewatered using a single belt press. Sludge is not thickened prior to dewatering, but the sludge is pre-conditioned by polyelectrolyte to improve its dewatering ability. The dewatered sludge is stored in a covered skip prior to disposal off site. Filtrate from the dewatering press gravitates to the preliminary treatment system where the liquor combines with incoming waste water and receives full biological treatment with the main process stream.

Stormwater Treatment

Following screening at the inlet works flows greater than 70 l/s overflow a storm weir and discharge to Lough Muckno at the primary discharge point. Flows between 35 and 70 l/s discharge via a second overflow to a storm tank. Downstream of the storm overflow weirs, flows up to 35 l/s are subject to grit removal in a vortex grit trap. When the storm tank has filled, settled storm water overflows to Lough Muckno via the primary discharge point PSW1. When the storm abates and incoming waste water flow is less than 35 l/s, storm water is pumped back to the secondary treatment system by two duty/standby submersible pumps (27 l/s each).

2.0 The sources of emissions from the waste water works

Primary Discharge (PSW1) – Effluent Outfall (E283041, N319961)

The treated effluent from the existing wastewater treatment plant discharges into Lough Muckno approximately 250m to the North West. The discharge pipe is an open discharge 530mm diameter pipe. Refer to drawing 04, attachment B2 in the Wastewater Discharge Licence Application.

Storm Water Overflow (SW2) – E282879, N320154

Main Roundabout CSO

This overflow is located on a 375mm diameter concrete combined sewer at the junction of the Monaghan Road and Main Street. Excess flow discharges to a nearby separate storm water network over a low level weir and 580mm diameter overflow pipe. There is also a gate valve located on the combined sewer that can be used to control overflow volumes. These excess flows are ultimately discharged to Lough Muckno, at SW2, via the storm water network. Refer to drawing 05, attachment B5 in the Wastewater Discharge Licence Application.

Drumillard CSO

This CSO is located in a 9inch concrete combined sewer beside number 17 Park Road in the Park Drive Estate. The pipe reduces to 150mm diameter on exiting the chamber. Excess flows discharge over low weirs located on either side of the pipe and enter a separate storm water network via a 9inch concrete overflow pipe. These flows are ultimately discharged to Lough Muckno at SW2. Refer to drawing 05, attachment B5 in the Wastewater Discharge Licence Application.

Existing Sewerage Network Overview

The town catchment is served by a partially combined collection network that gravitates flows to the wastewater treatment works on Muckno Street. Nine pumping stations are also used to lift flows from low lying and peripheral areas of the catchment into the gravity collection network. The majority of flows are gravitated to a main pumping station at Muckno Street and transferred via rising main to the treatment works. The wastewater treatment works discharges treated effluent via an outfall pipeline to the adjacent Lough Muckno.

3.0 The nature and quantities of emissions from the waste water works into the receiving aqueous environment

The existing plant has a design capacity of 12,562pe 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 (mg/L N)	20
Total Phosphorus (mg/L P)	2.0

The Castleblayney Wastewater Treatment Works complies with the requirements of the Urban Waste Water Directive, in addition to providing for compliance with the Phosphorus Regulations (SI 258 of 1998). No significant effects have been identified.

4.0 Identification of significant effects of the emissions on the environment

The only significant emission from the wastewater treatment plant is the effluent to the Lough Muckno. The effect of this has been examined in terms of the waste assimilative capacity of the River Boyne in terms of BOD₅, suspended solids, phosphorus, ammonia and oxidised nitrogen. In general, the current effluent limits are within the waste assimilative capacity of the river. Therefore, there are not considered to be any significant effects on the environment. Refer to attachment F1 (in the Wastewater Discharge Licence Application) for further detail.

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

The wastewater treatment plant in Castleblayney was commissioned in 1983. It is considered to be providing a suitable level of treatment to prevent pollution of Lough Muckno. However, plans are in place to upgrade the works to include the following improvement measures, refer at attachment B2, drawing03 for preliminary drawing (this is subject to approval for funding);

- Summary of effluent standards to be met for Phase 1;

Plant	Receiving Waters	Parameter			
		BOD (mg/l)	S.S. (mg/l)	P (mg/l)	Ammonia (N) (mg/l)
Castleblayney	Lough Muckno	9	11	1.0	10

- Tertiary BOD and suspended solids removal
- Ammonia reduction
- Refurbishment of existing tanks
- Upgrade of existing mechanical and electrical equipment
- Upgrade of Instrumentation

- Replacement of current existing surface aerators to a diffused aeration system with air blowers to increase efficiency.
- Provision of a new storm water tank with 2hours capacity for overflows at peak flows (8DWF) – approximately 1314m³.
- New sludge thickening and dewatering facility

6.0 Measures planned to monitor emissions into the environment

Flowmeters are provided at the wastewater treatment plant to monitor the process and the emissions to the environment. The flowmeters provided are as follows:

- Flow monitoring using level sensor in inlet flume chamber
- Flowmeter for the flow to treatment.
- Flowmeter for the sludge return flow.
- Flowmeter for the flow to the existing aeration basin.
- Flowmeter and recording equipment for flow to the stormwater tanks.
- Flowmeter and recording equipment for flow from Effluent Pumping Station.

The following process instrumentation is also provided to monitor the process and to monitor overflows from pumping stations and the activated sludge system is working effectively:-

- (i) Dissolved oxygen monitoring in each aeration tank.
- (ii) Ultrasonic level measurement in all pump sumps and the stormwater tank.

Monaghan County Council currently carry out monthly monitoring of the final effluent from the wastewater treatment plant in addition to ongoing monitoring carried out in Lough Muckno to monitor the water quality. No additional monitoring is considered necessary to monitor emissions to the environment.

APPENDIX 2

Table F2 – Water Abstraction Table

*For inspection purposes only.
Consent of copyright owner required for any other use.*

ABS_CD	AGG_SERVED	ABS_VOL	PT_CD	DIS_DS	EASTING	NORTHING	VERIFIED
<i>Abstraction Code</i>	<i>Agglomeration served</i>	<i>Abstraction Volume in m³/day</i>	<i>Point Code Provide label ID's</i>	<i>Distance Downstream in meters from Emission Point to Abstraction Point</i>	<i>6E-digit GPS Irish National Grid Reference</i>	<i>6N-digit GPS Irish National Grid Reference</i>	<i>Y = GPS used N = GPS not used</i>
2100pub1018	Dundalk	currently using 18,454 m ³ /d		8km	301115,	301607	N
	Newry (Newry&Mourne RDC) *	6.83Mld		7.5km	289016	315691	N
2400pub1009	Inishkeen	127		16.2km	292605	307022	N

* Water to serve Newry and the Mourne Area is abstracted from Lough Ross. It is treated at Carran Hill Treatment Works. Treated water from Carran Hill is supplied to local reservoirs at Knocknavannon, Cavanakill, Mullaghbawn and Camly.

For inspection purposes only.
Consent of copyright owner required for any reuse.

APPENDIX 3

Revised Waste Assimilative Capacity (WAC) Calculations

*For inspection purposes only.
Consent of copyright owner required for any other use.*

CASTLEBLAYNEY WwTW WASTE ASSIMILATIVE CAPACITY CALCULATIONS

The design flow and loads, based on the 2015 maximum population estimate of 8,519, are detailed in Table 1 below. The population equivalent of 8,519 is the estimated maximum PE for the life span of the Waste Water discharge Licence (2015).

TABLE 1 CASTLEBLAYNEY 2015 DESIGN FLOW AND LOAD

Parameter	
Population equivalent	8519
Flow per person per day:	225.0
Daily flow (m ³ /day):	1916.78
Daily flow (m ³ /s):	0.02218
Dry weather flow (l/s)	22.18
Daily BOD (kg/day)	511.14

The existing Castleblayney Wastewater Treatment Plant discharges treated effluent just upstream of the main part of Lough Muckno in the River Fane catchment. Lough Muckno is designated as sensitive in the Urban Wastewater Treatment Regulations. The treatment standards required for discharging to the existing outfall location have been examined below.

Waste Assimilative Capacity Calculations

The treated effluent from the Wastewater Treatment Works in Castleblayney discharges to the Lough Muckno. The effluent discharge standards from the wastewater treatment plant have been reviewed in terms of the projected design population equivalents in 2015, including current planning permissions, of the works taking into account the most recent Biological Water Quality Data published by the EPA for Lough Muckno. The closest upstream chemical data for Lough Muckno for 2001-2003 is at Derrycreevy Bridge. Chemical data for 2001-2003 is available for Station No. 0200, u/s Derrycreevy Bridge. This data has been used in the waste assimilative capacity calculations.

The primary regulatory guidelines for effluent standards, as outlined in Section 2, are the Urban Wastewater Treatment Regulations, 2001 (S.I. 254 of 2001) and the Water Quality Standards for Phosphorus (S.I. 258 of 1998). The water quality requirements are dependent on the background values and the flow in the river (i.e. assimilation capacity).

The biological quality ratings for the River Fane upstream and downstream of the existing wastewater treatment plant are detailed in Table 2.

TABLE 2 BIOLOGICAL QUALITY RATINGS (Q VALUES) FOR RIVER FANE

Location	Station No.	Station Name	Year 2001-2003
Upstream	0200	Derrycreevy Bridge,	Q3
Downstream	0300	Clarebane Bridge	Q3

Hydrometric Data

There is no flow monitoring data available at the outfall location. The OPW has flow records for the River Fane at Clarebane downstream of Lough Muckno as follows:

Average flow (m³/s): 3.1654
95-percentile flow (m³/s): 0.2

The estimated flow at the outfall location is estimated to be 50% of the flows at Clarebane, i.e. the flows are estimated as follows:

Average flow (m³/s): 1.583
95-percentile flow (m³/s): 0.1

For inspection purposes only.
Consent of copyright owner required for any other use.

Table 3 - Dilution Factors at 95 Percentile River Flow

	River flow 95 Percentile (m ³ /s)	WWTP Flow (m ³ /s)	Dilution (F _{River} /F _{WWTP})
At dry weather flow to the WWTP	0.100	0.02218	4.51

Table 4 - Dilution Factors at Average River Flow

	Average River flow (m ³ /s)	WWTP Flow (m ³ /s)	Dilution (F _{River} /F _{WWTP})
At dry weather flow to the WWTP	1.583	0.02218	71.34

The waste assimilative capacity for BOD₅ is calculated using the 95 percentile flow as the requirement for compliance with the Urban Wastewater Treatment Regulations only one sample in 12 can exceed the maximum value.

Compliance with nitrogen and Ortho-phosphate P requirements is based on an annual average and therefore the average river flowrate has been used for these calculations.

The waste assimilative capacity for BOD, ammonia, orthophosphate and oxidized nitrogen are calculated below. There are no limits of COD or total phosphorous or total nitrogen in terms of water quality in the salmonid regulations or bathing water regulations.

There is a limit of suspended solids at average concentrations of 25mg/l in the salmonid regulations. The level of suspended solids in the effluent from the wastewater treatment plant is 35mg/l. The minimum dilution in the river at 95 percentile flow in the river and peak flows from the wastewater treatment plant is 4.5. The suspended solids will therefore increase by a maximum of $(35/4.5) = 7.8\text{mg/l}$. Over a daily flow the increase in suspended solids will be substantially less and therefore the effluent limit of 35mg/l is considered acceptable.

It has been assumed that if the requirements of the Urban Wastewater Treatment Regulations are met and the waste assimilative capacity for the other parameters is sufficient that the effluent COD, suspended solids, total nitrogen and total phosphorus will be acceptable.

The revised waste assimilative capacity for the river is calculated as follows:

Waste Assimilative Capacity - BOD

In accordance with accepted water quality management plan requirements, the waste assimilative capacity of BOD for a watercourse is a function of its 95-percentile flow and its background biological quality. The Waste Assimilative Capacity (WAC) for BOD is therefore calculated as follows:

$$\text{WAC} = [(C_{\text{max}} \times (F_{\text{river}} + F_{\text{eff}})) - (C_{\text{back}} \times F_{\text{river}})] \times 86.4 \quad \text{kg Pollutant/day}$$

C_{max} = maximum permissible BOD concentration in river = 4 mg/L

C_{back} = background (upstream) pollutant concentration = 1.8 mg/L

F_{river} = F_{95} (for BOD calculations) = 0.1 m³/s

F_{eff} = effluent flow, i.e. $\text{DWF}/(3600 \times 24) = 1917/(3600 \times 24) = 0.02218\text{m}^3/\text{s}$

**Taken from the EPA Water Quality Statistical Data 2001-2003 at station No. 0200, Derrycreevy Bridge*

$$\begin{aligned} \text{BOD WAC} &= [(4 \times (0.1 + 0.02218)) - (1.8 \times 0.1)] \times 86.4 \\ &= 26.68 \text{ kg BOD/day} \end{aligned}$$

Taking a Design PE of 8,519 (PE for life time of the EPA WWD Licence) the influent load to the treatment plant is calculated as 511.14 kg BOD/day. The minimum standard of effluent BOD required is 25 mg/L. This equates to an effluent load of 47.91kg BOD/day. This is greater than the WAC of the stream therefore a higher level of treatment would be required. With an effluent **BOD** of $\leq 13 \text{ mg/L}$, the effluent load will be 24.92 kgBOD/day which is less than that of the WAC of the stream. As shown in attachment E4 of the application, 100% of the effluent results from Jan-Dec 2007 have achieved $<13\text{mg/L}$. This is less than the WAC and therefore acceptable.

Suspended Solids

The allowable level of suspended solids in the effluent from the wastewater treatment plant is 35mg/l.

WWTP Flow (m ³ /day)	= 1,916.78m ³ /day
Level S.S.	= 35mg/L
Effluent load to the River; (35 x 2,705.2)/1000	= 67.09kg/d
F _{river} = F ₉₅ (for SS calculations)	= 0.1 m ³ /s
Increase in River concentration @ 95%ile flow; 67.09 x 10 ⁶ /[0.1 x (3 x 3600 x 24)]	= 7.76mg/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 shown in attachment E4 of the application, 92% of the effluent results from Jan-Dec 2007 have achieved $<35\text{mg/L}$.

Phosphorus

The phosphorus loads in the river are governed by the Phosphorus Regulations (S.I. 258 of 1998). The regulations state that the existing biological quality rating assigned between 1st January 1995 and 31st December 1997 is the rating upon which the improvements in Water Quality will be judged.

The Q-rating for the River Fane at Station No. 0200, Derrycreevy Bridge, upstream of the existing Castleblayney outfall, was 3 for the 1995-1997 Water Quality Data. The Q-rating was 3 at Station No. 0300, Clarebane Bridge, downstream of Castleblayney.

The minimum target ratings and concentrations for these stretches of water as defined in the Phosphorus regulations are given below.

Phosphorus Regulations Target Ratings and Concentrations

Existing Biological Quality (Q) Rating/Q Index	Minimum Target Biological Quality (Q) Rating /Q Index	Molybdate Reactive Phosphate Median Conc. (mg P/l)
3	3-4	0.05

As the regulations determine the Q index using the median of 10 samples over 12 months the enforcement of the load determined from 95%ile flows is extremely onerous. A more realistic load is given by using the average flow in the river as this is more representative of the variable flows to be encountered during the 12-month sampling period.

The median background Ortho-Phosphate concentration, from the 2001-2003 EPA data, is 0.02 mg/L. Using the Waste Assimilation Capacity calculation the maximum allowable phosphorus load to the river is calculated as follows:

$$WAC = [(C_{max} \times (F_{river} + F_{eff})) - (C_{back} \times F_{river})] \times 86.4 \quad \text{kg Pollutant/day}$$

- C_{max} = maximum permissible BOD concentration in river = 0.05 mg/L
- C_{back} = background (upstream) pollutant concentration = 0.02 mg/L
- F_{river} = F_{avg} (for P calculations) = 1.583 m³/s
- F_{eff} = effluent flow, i.e. DWF/(3600 x 24) = 1917/(3600 x 24) = 0.02218m³/s

$$MRP WAC = [(0.05 \times (1.583 + 0.02218)) - (0.02 \times 1.583)] \times 86.4 \text{ [kg P/day]}$$

$$= 4.20 \text{ kg MRP/day}$$

Based on the above, the proposed effluent treatment standard should ensure that the MRP load to the river should be no more than 4.20 kg MRP/day.

With an effluent phosphorus standard of 2.0 mg/L, the phosphorus load for this concentration is calculated as follows:-

$$\begin{aligned} \text{MRP (2.0 mg/L)} &= [F_{\text{eff}} (\text{m}^3/\text{day}) \times C_{\text{eff}} (\text{mg/L})]/1000 \\ &= [1,916 \times 2]/1000 \\ &= 3.83 \text{ kg MRP / day } (< 4.20 \text{ kg / day }) \end{aligned}$$

The resulting MRP concentration is less than the available assimilative capacity and is therefore an effluent phosphorus concentration of 2.0 mg/L is acceptable. As can be seen in section E4, over 91% of the effluent results for Castleblayney WWTW from the 16/01/07 – 12/12/07 have been <2mg/L.

Ammonia

As detailed above it is considered appropriate that the salmonid water standards be adopted for the calculation of the assimilative capacity. A guideline for the maximum allowable ammonia concentration in a Salmonid River, C_{max} , is 0.5 mg/L. The stripping of ammonia from the effluent is easily achieved by ensuring that the D.O. level in the Aeration Process is maintained at or above 2 mg/L.

The background ammonia concentration, C_{back} , has been taken as 0.04 mg/L based on the 1998-200 EPA data. The resultant WAC is therefore calculated as follows:

Maximum effluent ammonia concentration:	25 mg/L
WWTP Flowrate:	1917 m ³ /day

The increase in river ammonia,N concentration is calculated as follows:

$$\begin{aligned} C_{\text{max}} &= \text{maximum permissible Ammonia concentration in river} = 0.5 \text{ mg/L} \\ C_{\text{back}} &= \text{background (upstream) pollutant concentration} = 0.04 \text{ mg/L} \\ F_{\text{river}} &= F_{95} \text{ (for BOD calculations)} = 0.1 \text{ m}^3/\text{s} \\ F_{\text{avg}} &= \text{average flow in m}^3/\text{sec} = 1.583 \text{ m}^3/\text{s} \\ F_{\text{eff}} &= \text{effluent flow, i.e. DWF}/(3600 \times 24) = 1917/(3600 \times 24) = 0.02218 \text{ m}^3/\text{s} \\ 86.4 &= \text{conversion factor (to kg/day)} \end{aligned}$$

The target ammonia level in the river is taken as 0.5mg/l.

$$\begin{aligned} \text{NH}_3 \text{ WAC} &= (C_{\text{max}} - C_{\text{back}}) \times F_{\text{avg}} \times 86.4 \\ \text{NH}_3 \text{ WAC} &= (0.5 - 0.04) \times 1.583 \times 86.4 \\ &= 62.91 \text{ kg /day} \end{aligned}$$

At 25mg/L, the maximum effluent ammonia of 47.92kg/day is less than the calculated waste assimilative capacity of 62.91 kg/day and is therefore acceptable. As can be seen in section E4, 92% of the effluent results for Castleblayney WWTW from the 16/01/07 – 12/12/07 have been <25mg/L.

The effluent loads to the river is summarised as follows:

Parameter	Effluent Load (kg/d)	Effluent Concentration Limits (mg/L)
BOD	47.91kg	13
Suspended Solids	67.09kg/day	35
Orthophosphate	4.2 kg MRP / day	2.0
Ammonia (kg.N/day)	62.91kg/day	25

It should be noted that these effluent loads and increases in concentration are based on the 2015 PE (8,519 p.e.) design load to the plant. The current effluent loads are less than this.

For inspection purposes only.
Consent of copyright owner required for any other use.

APPENDIX 4

2001- 2003 EPA Water Quality Statistical Data

Station No. 0200 – Derrycreevy Bridge

Station No. 0300 – Clarebane Bridge

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Hydrometric Area 06

Newry, Fane, Glyde and Dee

*For inspection purposes only.
Consent of copyright owner required for any other use.*

River and Code : **FANE** **06/F/01**
 Tributary of : Sea - Dundalk Bay OS Catchment No: 94
 OS Grid Ref : J 064 018

Sampling Stations No.	Biological Quality Ratings (Q Values)										
	1971	1974	1976	1980	1982	1986	1990	1994	1997	2000	2003
0115	-	-	-	-	-	-	-	-	3-4	4	3
0155	-	-	-	-	-	-	-	-	2-3	2-3	2-3
0180	-	-	-	-	-	-	-	3	3	3	3
0200	4	-	3-4	4	3-4	3-4	3-4	3	3-4	3	3
0300	-	-	3-4	3-4	3-4	3-4	3-4	3	3	3	3
0400	-	-	-	3	3	3	3-4	3	3	3-4	3
0500	5	-	5	5	4-5	4	4-5	4	4	4	4
0600	-	-	-	5	4-5	4-5	-	-	-	-	-
0650	-	-	-	-	-	-	5	3-4	4	4	3-4
0700	5	5	5	5	4	4	5	4	4-5	4-5	4
0800	-	-	-	4	4	4	4	-	-	-	-
0900	5	5	5	4	4-5	-	4	3-4	4-5	4-5	4
1000	-	-	-	4-5	4-5	-	-	-	-	-	-

No.	Location	No.	Location
		0400	Ballynacarry Br
	<i>Carrickaslane Lough Branch</i>	0500	Magoney Br
0115	Br u/s Carrickaslane L <i>West Branch</i>	0600	Br at Moyle's Mill
0155	South Br Dunfelimy	0650	Br in Inniskeen
0180	2nd Br u/s Laragh Lough	0700	Castlering Br
0200	Derrycreevy Br <i>Main Channel</i>	0800	Knock Br
0300	Clarebane Br	0900	Stephenstown Br
		1000	Lurgangreen Br

Results of Chemical Analyses 2001 to 2003:
Data Set: 1 06F01 EPA

Station No.	pH			Conductivity $\mu\text{S cm}^{-1}$				Temperature oC				
	No.	Min	Med	Max	No.	Min	Med	Max	No.	Min	Med	Max
0155	7	7.2	7.4	7.7	-	-	-	-	7	5.0	8.0	14.0
0180	11	7.4	7.6	8.0	-	-	-	-	10	5.0	9.0	18.0
0200	11	7.2	7.6	7.8	-	-	-	-	10	5.0	9.0	21.0
0300	11	7.5	7.8	8.3	-	-	-	-	10	4.0	10.0	22.0
0400	11	7.6	7.8	8.1	-	-	-	-	10	4.0	9.5	22.0
0500	5	7.8	8.2	8.9	-	-	-	-	4	8.0	11.0	22.0
0600	7	7.7	7.9	9.1	-	-	-	-	7	4.0	9.0	16.0
0650	4	7.8	8.2	8.3	-	-	-	-	-	-	-	-
0700	18	7.7	8.0	8.8	-	-	-	-	17	4.0	12.0	21.0
0800	18	7.7	8.0	8.8	-	-	-	-	17	4.0	12.0	21.0
0900	20	7.7	8.0	8.8	-	-	-	-	19	4.0	10.0	20.0
1000	18	7.7	7.9	8.3	-	-	-	-	17	4.0	12.0	21.0

Station No.	Dissolved Oxygen % Saturation				Dissolved Oxygen mg O ₂ l ⁻¹				B.O.D mg O ₂ l ⁻¹			
	No.	Min	Med	Max	No.	Min	Med	Max	No.	Min	Med	Max
0155	7	48	60	72	7	5.7	6.9	8.1	6	2.5	3.8	7.3
0180	10	80	92	97	10	8.6	10.3	11.4	10	1.0	2.4	3.7
0200	10	61	84	113	10	5.8	9.8	11.9	10	1.1	1.8	3.4
0300	10	78	96	113	10	7.8	10.4	12.6	10	1.0	1.4	3.1
0400	10	75	96	107	10	7.4	10.4	12.6	10	1.0	1.3	2.5
0500	4	103	106	116	4	9.2	12.1	12.5	5	1.1	1.7	2.5
0600	7	84	100	119	7	9.4	10.8	13.2	6	1.2	1.4	2.9
0650	-	-	-	-	-	-	-	-	4	1.0	1.6	2.1
0700	17	89	101	118	17	8.9	11.1	12.8	17	1.0	1.4	2.6
0800	17	78	100	121	17	7.7	11.0	12.9	17	1.0	1.4	5.9
0900	19	84	100	132	19	8.8	11.3	12.9	19	1.2	1.6	3.6
1000	17	79	94	179	17	8.4	10.0	16.2	17	1.0	1.5	8.1

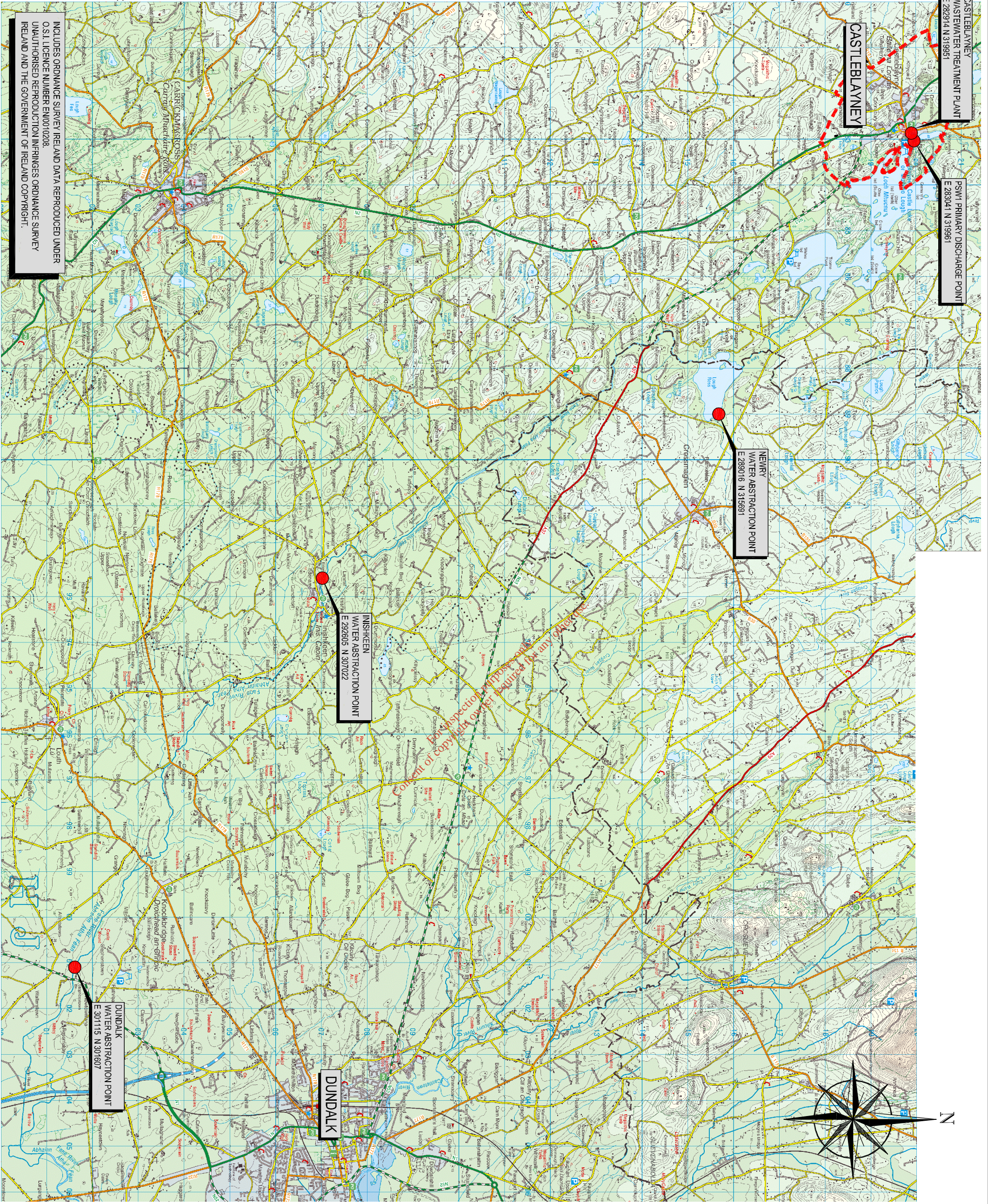
Station No.	Chloride mg Cl l ⁻¹				Total Ammonia mg N l ⁻¹				Un-Ionised Ammonia mg NH ₃ l ⁻¹			
	No.	Min	Med	Max	No.	Min	Med	Max	No.	Min	Med	Max
0155	7	14	18	21	7	0.85	1.88	3.25	7	0.003	0.008	0.049
0180	11	13	17	20	11	<0.03	0.23	0.82	10	<0.001	0.002	0.008
0200	11	13	16	18	11	<0.03	0.04	0.22	10	<0.001	<0.001	0.001
0300	11	13	16	18	11	<0.03	0.03	0.08	10	<0.002	<0.001	0.005
0400	11	13	15	18	11	<0.03	<0.03	0.71	10	<0.002	<0.001	0.016
0500	5	14	15	16	5	<0.03	<0.03	0.03	4	<0.005	<0.002	<0.001
0600	7	14	16	17	7	<0.03	<0.03	<0.03	7	<0.008	<0.001	<0.001
0650	4	14	16	18	4	<0.03	<0.03	0.03	-	-	-	-
0700	23	13	16	18	23	<0.03	<0.03	0.09	17	<0.006	<0.001	0.001
0800	19	14	17	19	19	<0.03	<0.03	0.54	17	<0.006	<0.001	0.020
0900	25	11	16	21	25	<0.03	<0.03	0.59	19	<0.006	<0.001	0.024
1000	19	18	29	999	19	<0.03	0.03	0.11	17	<0.001	0.001	0.003

Station No.	Oxidised Nitrogen mg N l ⁻¹				Ortho-Phosphate mg P l ⁻¹				Colour Hazen			
	No.	Min	Med	Max	No.	Min	Med	Max	No.	Min	Med	Max
0155	7	1.3	3.2	4.3	7	0.03	0.04	0.06	7	70	94	146
0180	11	0.7	2.1	2.7	11	0.02	0.03	0.08	11	60	93	136
0200	11	0.1	0.8	2.2	11	<0.02	0.02	0.10	11	68	82	115
0300	11	0.4	1.1	2.5	11	<0.02	0.03	0.08	11	29	55	80
0400	11	0.4	1.0	2.5	11	<0.02	0.03	0.05	11	27	49	64
0500	5	0.4	0.8	1.5	5	<0.02	0.02	0.05	5	39	45	56
0600	7	0.5	1.1	2.4	7	<0.02	0.03	0.04	7	22	53	63
0650	4	0.5	0.9	1.5	4	<0.02	0.02	0.05	4	41	49	56
0700	23	0.4	1.2	3.1	23	<0.02	0.04	0.06	18	29	54	189
0800	18	<0.1	1.6	3.7	19	<0.02	0.04	0.06	17	32	53	82
0900	24	<0.1	2.0	3.8	25	0.02	0.04	0.08	20	35	52	76
1000	18	1.1	2.2	4.1	19	0.02	0.04	0.09	18	31	46	128

APPENDIX 5

Revised Drawing; F2-20384-DL-CY-16

*For inspection purposes only.
Consent of copyright owner required for any other use.*



INCLUDES ORDNANCE SURVEY, IRELAND DATA REPRODUCED UNDER O.S.I. LICENCE NUMBER EM0010208. UNAUTHORISED REPRODUCTION INFRINGES ORDNANCE SURVEY IRELAND AND THE GOVERNMENT OF IRELAND COPYRIGHT.

CASTLEBLAYNEY
WASTEWATER TREATMENT PLANT
E 282914 N 319951

PSWT PRIMARY DISCHARGE POINT
E 283041 N 319961

NENRY
WATER ABSTRACTION POINT
E 289016 N 315891

NISHKEEN
WATER ABSTRACTION POINT
E 292805 N 307022

DUNDALK
WATER ABSTRACTION POINT
E 301115 N 301607

DUNDALK

LEGEND
--- AGGLOMERATION BOUNDARY
--- TREATMENT WORKS SITE

NOTES

NO.	DATE	DESCRIPTION	D	C	A

DISCHARGE LICENCE

COPYRIGHT RESERVED. THIS DRAWING IS NOT TO BE USED FOR A PURPOSES OTHER THAN THAT FOR WHICH IT HAS BEEN ISSUED BY NICHOLAS O'DWYER LTD. NOR IS IT TO BE COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN CONSENT.

Nicholas O'Dwyer
CONSULTING ENGINEERS
Highway Office Park, Malpas Avenue, Dublin 14
Tel: 01-256 5000 Fax: 01-256 5001 E-mail: info@nicholasowyer.com

Monaghan County Council
Comhairle Contae Monaghan
Council Offices
The Glen, Monaghan, Co. Monaghan
Tel: (047) 310500 Fax: (047) 82739

PROJECT
WASTE WATER LICENCE APPLICATION FOR CASTLEBLAYNEY SEWERAGE SCHEME

TITLE
CASTLEBLAYNEY WWTW LOCATION OF DOWNSTREAM WATER ABSTRACTION POINT

SCALES	DRAWN	CHECKED	APPROVED
1:76,000 @ A3	DS/Smithers	F.McArdle	F.L.McArdle
	DATE 22/06/2009	DATE 22/06/2009	DATE 22/06/2009
C.O. REFERENCE	SECTION	REV	
F.2-20384-DL-CY-16	F.2	16	-

APPENDIX 6

Laboratory Confirmation Results and Corrected Results;

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Pauline McAree

From: Donna Heslin [dheslin@euroenv.ie]
Sent: 29 April 2009 14:28
To: gmccarthy@monaghancoco.ie; Pauline McAree
Subject: Supplementary certs 0810/038 & 0810/039 batches
Attachments: Monaghan Co Co supplementary 29.04.09.pdf

Hi Pauline,

Following your query re the positive Dichloromethane (DCM) results for samples 0810/038/01-11 & 0810/039/01-08, we investigated the results in our GC lab.

We had a DCM contamination issue and blank samples were analysed with each batch of Volatile organic compounds so that it can be subtracted from the samples, in order to reflect the true DCM concentration of the samples.

On review, it was observed that for both of the above batches, the blank DCM concentration had not been subtracted from the sample results. This was an oversight on our part and apologies for the inconvenience caused.

Please find supplementary certs attached with the amended DCM results.

Any queries, please contact me.

Regards
Donna

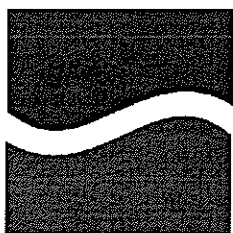
Donna Heslin
Laboratory Manager
EURO environmental services
35 Boyne Business Park
Drogheda
Co Louth
Ireland

Phone: 041 9845440 (ext 2)
Fax: 041 9846171
Email: dheslin@euroenv.ie

www.euroenv.ie - for information on our services, weekly news stories and legislation updates



For inspection purposes only.
Consent of copyright owner required for any other use.



EURO
environmental
services

Environmental Science & Management
Water, Soil & Air Testing

Unit 35,
Boyne Business Park,
Drogheda,
Co. Louth
Ireland

Tel: +353 41 9845440
Fax: +353 41 9846171
Web: www.euroenv.ie
email: info@euroenv.ie

A copy of this certificate is available on www.euroenv.ie

Customer	Gearoid McCarthy Monaghan Co. Co. County Offices The Glen Co Monaghan	Lab Report Ref. No.	0810/038/01S
Customer PO	400092317	Date of Receipt	16/06/2008
Customer Ref	Castleblayney Inflow	Date Testing Commenced	16/06/2008
		Received or Collected	Collected by Euro
		Condition on Receipt	Acceptable
		Date of Report	29/04/2009
		Sample Type	Trade Effluent

CERTIFICATE OF ANALYSIS - Supplementary

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Ammonia	114	Colorimetry	25.60	mg/L as N	UKAS
Arsenic	177	ICPMS	1	ug/L	
Atrazine	191	HPLC	<0.01	ug/L	
Barium	177	ICPMS	29	ug/L	
BOD	113	Electrometry	440	mg/L	
Boron	177	ICPMS	373	ug/L	
Cadmium	177	ICPMS	<0.09	ug/L	
Chromium	177	ICPMS	4	ug/L	
COD	107	Colorimetry	722	mg/L	UKAS
Conductivity	112	Electrometry	750	µscm ⁻¹ @25C	UKAS
Copper	177	ICPMS	55	ug/L	
Cyanide	138	Colorimetry	13	ug/L	
Dichloromethane	154	GCMS	<1	ug/L	
Fluoride	115	Colorimetry	0.69	mg/L	
Lead	177	ICPMS	7	ug/L	
Mercury	178	ICPMS	<0.2	ug/L	
Nickel	177	ICPMS	4	ug/L	
Nitrate	103	Colorimetry	<0.09	mg/L as N	
Nitrite	118	Colorimetry	0.024	mg/L as N	
Nitrogen (Total Kjeldahl)	104	Digestion/ Distillation/ Titrim	35.84	mg/L as N	
Nitrogen (Total Oxidised)	151	Colorimetry	0.03	mg/L as N	
Nitrogen (Total)	0	Calculation	35.87	mg/L as N	
pH	110	Electrometry	6.9	pH Units	UKAS
Phenols (Total)	223	GCMS	<0.10	ug/L	
Phosphate (Ortho)	117	Colorimetry	2.867	mg/L as P	UKAS

Signed : Donna Heslin

Date : 29/04/09

Donna Heslin - Laboratory Manager

Acc. : Accredited Parameters by ISO 17025:2005

All organic results are analysed as received and all results are corrected for dry weight at 104 C
Results shall not be reproduced, except in full, without the approval of EURO environmental services
Results contained in this report relate only to the samples tested



Environmental Science & Management
Water, Soil & Air Testing

Unit 35,
Boyne Business Park,
Drogheda,
Co. Louth
Ireland
Tel: +353 41 9845440
Fax: +353 41 9846171
Web: www.euroenv.ie
email info@euroenv.ie

A copy of this certificate is available on www.euroenv.ie

Customer	Gearoid McCarthy Monaghan Co. Co. County Offices The Glen Co Monaghan	Lab Report Ref. No.	0810/038/01S
Customer PO	400092317	Date of Receipt	16/06/2008
Customer Ref	Castleblayney Inflow	Date Testing Commenced	16/06/2008
		Received or Collected	Collected by Euro
		Condition on Receipt	Acceptable
		Date of Report	29/04/2009
		Sample Type	Trade Effluent

CERTIFICATE OF ANALYSIS - Supplementary

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Phosphate (Total)	166	Digestion/ Colorimetry	3.545	mg/L as P	UKAS
Selenium	177	ICPMS	1	ug/L	
Simazine	191	HPLC	<0.01	ug/L	
Solids (Total Suspended)	106	Filtration/ Drying @ 104C	152	mg/L	
Sulphate	119	Colorimetry	55.36	mg/L as SO4	UKAS
Temperature	715	DO Meter	14.5	degrees C	
Toluene	179	GCMS	<1	ug/L	
Tributylitin	0	GCMS	<0.02	ug/L as Sn	
Xylene	179	GCMS	<1	ug/L	
Zinc	177	ICPMS	72.2	ug/L	

For inspection purposes only.
Consent of copyright owner required for any other use.

Signed : Donna Heslin
Donna Heslin - Laboratory Manager

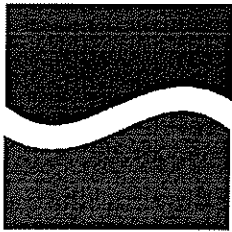
Date : 29/06/09

Acc. : Accredited Parameters by ISO 17025:2005

All organic results are analysed as received and all results are corrected for dry weight at 104 C
Results shall not be reproduced, except in full, without the approval of EURO environmental services
Results contained in this report relate only to the samples tested

* Subcontracted

Page 2 of 2



EURO
environmental
services

Environmental Science & Management
Water, Soil & Air Testing

Unit 35,
Boyne Business Park,
Drogheda,
Co. Louth
Ireland
Tel: +353 41 9845440
Fax: +353 41 9846171
Web: www.euroenv.ie
email info@euroenv.ie

A copy of this certificate is available on www.euroenv.ie

Customer	Gearoid McCarthy Monaghan Co. Co. County Offices The Glen Co Monaghan	Lab Report Ref. No.	0810/038/02S
Customer PO	400092317	Date of Receipt	16/06/2008
Customer Ref	Castleblayney Outflow	Date Testing Commenced	16/06/2008
		Received or Collected	Collected by Euro
		Condition on Receipt	Acceptable
		Date of Report	29/04/2009
		Sample Type	Trade Effluent

CERTIFICATE OF ANALYSIS - Supplementary

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Ammonia	114	Colorimetry	18.97	mg/L as N	UKAS
Arsenic	177	ICPMS	1	ug/L	
Atrazine	191	HPLC	<0.01	ug/L	
Barium	177	ICPMS	15	ug/L	
BOD	113	Electrometry	16	mg/L	
Boron	177	ICPMS	199	ug/L	
Cadmium	177	ICPMS	<0.09	ug/L	
Chromium	177	ICPMS	1	ug/L	
COD	107	Colorimetry	33	mg/L	UKAS
Conductivity	112	Electrometry	689	µscm ⁻¹ @25C	UKAS
Copper	177	ICPMS	5	ug/L	
Cyanide	138	Colorimetry	<5	ug/L	
Dichloromethane	154	GCMS	<1	ug/L	
Fluoride	115	Colorimetry	0.56	mg/L	
Lead	177	ICPMS	3	ug/L	
Mercury	178	ICPMS	<0.2	ug/L	
Nickel	177	ICPMS	3	ug/L	
Nitrate	103	Colorimetry	<0.09	mg/L as N	
Nitrite	118	Colorimetry	0.020	mg/L as N	
Nitrogen (Total Kjeldahl)	104	Digestion/ Distillation/ Titrim	20.16	mg/L as N	
Nitrogen (Total Oxidised)	151	Colorimetry	<0.03	mg/L as N	
Nitrogen (Total)	0	Calculation	20.16	mg/L as N	
pH	110	Electrometry	7.4	pH Units	UKAS
Phenols (Total)	223	GCMS	<0.10	ug/L	
Phosphate (Ortho)	117	Colorimetry	1.040	mg/L as P	UKAS

Signed : Donna Heslin

Date : 29/04/09

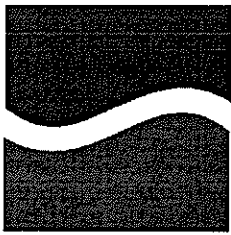
Donna Heslin - Laboratory Manager

Acc. : Accredited Parameters by ISO 17025:2005

All organic results are analysed as received and all results are corrected for dry weight at 104 C
Results shall not be reproduced, except in full, without the approval of EURO environmental services
Results contained in this report relate only to the samples tested

* Subcontracted

Page 1 of 2



EURO
environmental
services

Environmental Science & Management
Water, Soil & Air Testing

Unit 35,
Boyne Business Park,
Drogheda,
Co. Louth
Ireland

Tel: +353 41 9845440
Fax: +353 41 9846171
Web: www.euroenv.ie
email: info@euroenv.ie

A copy of this certificate is available on www.euroenv.ie

Customer	Gearoid McCarthy Monaghan Co. Co. County Offices The Glen Co Monaghan	Lab Report Ref. No.	0810/038/02S
Customer PO	400092317	Date of Receipt	16/06/2008
Customer Ref	Castleblayney Outflow	Date Testing Commenced	16/06/2008
		Received or Collected	Collected by Euro
		Condition on Receipt	Acceptable
		Date of Report	29/04/2009
		Sample Type	Trade Effluent

CERTIFICATE OF ANALYSIS - Supplementary

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Phosphate (Total)	166	Digestion/ Colorimetry	1.097	mg/L as P	UKAS
Selenium	177	ICPMS	2	ug/L	
Simazine	191	HPLC	<0.01	ug/L	
Solids (Total Suspended)	106	Filtration/ Drying @ 104C	<3	mg/L	
Sulphate	119	Colorimetry	55.56	mg/L as SO4	UKAS
Temperature	715	DO Meter	14.0	degrees C	
Toluene	179	GCMS	<1	ug/L	
Tributyltin	0	GCMS	<0.02	ug/L as Sn	
Xylene	179	GCMS	<1	ug/L	
Zinc	177	ICPMS	19.9	ug/L	

For inspection purposes only.
Consent of copyright owner required for any other use.

Signed : Donna Heslin
Donna Heslin - Laboratory Manager

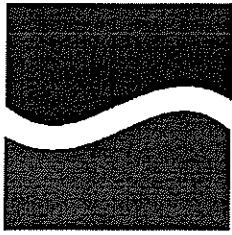
Date : 29/04/09

Acc. : Accredited Parameters by ISO 17025:2005

All organic results are analysed as received and all results are corrected for dry weight at 104 C
Results shall not be reproduced, except in full, without the approval of EURO environmental services
Results contained in this report relate only to the samples tested

* Subcontracted

Page 2 of 2



EURO
environmental
services

Environmental Science & Management
Water, Soil & Air Testing

Unit 35,
Boyne Business Park,
Drogheda,
Co. Louth
Ireland
Tel: +353 41 9845440
Fax: +353 41 9846171
Web: www.euroenv.ie
email info@euroenv.ie

A copy of this certificate is available on www.euroenv.ie

Customer	Gearoid McCarthy Monaghan Co. Co. County Offices The Glen Co Monaghan	Lab Report Ref. No.	0810/038/03S
Customer PO	400092317	Date of Receipt	16/06/2008
Customer Ref	Castleblayney Upstream	Date Testing Commenced	16/06/2008
		Received or Collected	Collected by Euro
		Condition on Receipt	Acceptable
		Date of Report	29/04/2009
		Sample Type	Trade Effluent

CERTIFICATE OF ANALYSIS - Supplementary

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Ammonia	114	Colorimetry	0.13	mg/L as N	UKAS
Arsenic	177	ICPMS	1	ug/L	
Atrazine	191	HPLC	<0.01	ug/L	
Barium	177	ICPMS	30	ug/L	
BOD	113	Electrometry	3	mg/L	
Boron	177	ICPMS	145	ug/L	
Cadmium	177	ICPMS	<0.09	ug/L	
Chromium	177	ICPMS	1	ug/L	
COD	107	Colorimetry	32	mg/L	UKAS
Conductivity	112	Electrometry	244	µscm ⁻¹ @25C	UKAS
Copper	177	ICPMS	7	ug/L	
Cyanide	138	Colorimetry	<5	ug/L	
Dichloromethane	154	GCMS	<1	ug/L	
Fluoride	115	Colorimetry	0.11	mg/L	
Lead	177	ICPMS	3	ug/L	
Mercury	178	ICPMS	<0.2	ug/L	
Nickel	177	ICPMS	6	ug/L	
Nitrate	103	Colorimetry	0.28	mg/L as N	
Nitrite	118	Colorimetry	0.011	mg/L as N	
Nitrogen (Total Kjeldahl)	104	Digestion/ Distillation/ Titrim	2.24	mg/L as N	
Nitrogen (Total Oxidised)	151	Colorimetry	.29	mg/L as N	
Nitrogen (Total)	0	Calculation	2.53	mg/L as N	
pH	110	Electrometry	7.5	pH Units	UKAS
Phenols (Total)	223	GCMS	<0.10	ug/L	
Phosphate (Ortho)	117	Colorimetry	0.010	mg/L as P	UKAS

Signed : Donna Heslin

Date : 29/04/09

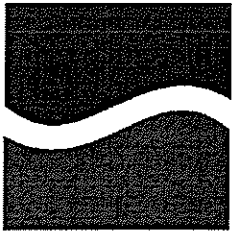
Donna Heslin - Laboratory Manager

Acc. : Accredited Parameters by ISO 17025:2005

All organic results are analysed as received and all results are corrected for dry weight at 104 C
Results shall not be reproduced, except in full, without the approval of EURO environmental services
Results contained in this report relate only to the samples tested

* Subcontracted

Page 1 of 2



EURO
environmental
services

Environmental Science & Management
Water, Soil & Air Testing

Unit 35,
Boyne Business Park,
Drogheda,
Co. Louth
Ireland
Tel: +353 41 9845440
Fax: +353 41 9846171
Web: www.euroenv.ie
email info@euroenv.ie

A copy of this certificate is available on www.euroenv.ie

Customer	Gearoid McCarthy Monaghan Co. Co. County Offices The Glen Co Monaghan	Lab Report Ref. No.	0810/038/03S
Customer PO	400092317	Date of Receipt	16/06/2008
Customer Ref	Castleblayney Upstream	Date Testing Commenced	16/06/2008
		Received or Collected	Collected by Euro
		Condition on Receipt	Acceptable
		Date of Report	29/04/2009
		Sample Type	Trade Effluent

CERTIFICATE OF ANALYSIS - Supplementary

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Phosphate (Total)	166	Digestion/ Colorimetry	0.159	mg/L as P	UKAS
Selenium	177	ICPMS	2	ug/L	
Simazine	191	HPLC	<0.01	ug/L	
Solids (Total Suspended)	106	Filtration/ Drying @ 104C	4	mg/L	
Sulphate	119	Colorimetry	22.89	mg/L as SO4	UKAS
Temperature	715	DO Meter	13.8	degrees C	
Toluene	179	GCMS	<1	ug/L	
Tributyltin	0	GCMS	<0.02	ug/L as Sn	
Xylene	179	GCMS	<1	ug/L	
Zinc	177	ICPMS	20.0	ug/L	

For inspection purposes only.
Consent of copyright owner required for any other use.

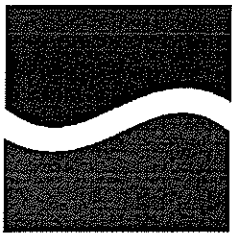
Signed : Donna Heslin
Donna Heslin - Laboratory Manager

Date : 29/04/09

Acc. : Accredited Parameters by ISO 17025:2005

All organic results are analysed as received and all results are corrected for dry weight at 104 C
Results shall not be reproduced, except in full, without the approval of EURO environmental services
Results contained in this report relate only to the samples tested

* Subcontracted Page 2 of 2



EURO
environmental
services

Environmental Science & Management
Water, Soil & Air Testing

Unit 35,
Boyne Business Park,
Drogheda,
Co. Louth
Ireland
Tel: +353 41 9845440
Fax: +353 41 9846171
Web: www.euroenv.ie
email info@euroenv.ie

A copy of this certificate is available on www.euroenv.ie

Customer	Gearoid McCarthy Monaghan Co. Co. County Offices The Glen Co Monaghan	Lab Report Ref. No.	0810/038/04S
Customer PO	400092317	Date of Receipt	16/06/2008
Customer Ref	Castleblayney downstream	Date Testing Commenced	16/06/2008
		Received or Collected	Collected by Euro
		Condition on Receipt	Acceptable
		Date of Report	29/04/2009
		Sample Type	Trade Effluent

CERTIFICATE OF ANALYSIS - Supplementary

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Ammonia	114	Colorimetry	0.43	mg/L as N	UKAS
Arsenic	177	ICPMS	3	ug/L	
Atrazine	191	HPLC	<0.01	ug/L	
Barium	177	ICPMS	55	ug/L	
BOD	113	Electrometry	4	mg/L	
Boron	177	ICPMS	210	ug/L	
Cadmium	177	ICPMS	<0.09	ug/L	
Chromium	177	ICPMS	3	ug/L	
COD	107	Colorimetry	55	mg/L	UKAS
Conductivity	112	Electrometry	316	µscm ⁻¹ @25C	UKAS
Copper	177	ICPMS	11	ug/L	
Cyanide	138	Colorimetry	7	ug/L	
Dichloromethane	154	GCMS	<1	ug/L	
Fluoride	115	Colorimetry	0.15	mg/L	
Lead	177	ICPMS	9	ug/L	
Mercury	178	ICPMS	<0.2	ug/L	
Nickel	177	ICPMS	11	ug/L	
Nitrate	103	Colorimetry	<0.09	mg/L as N	
Nitrite	118	Colorimetry	0.020	mg/L as N	
Nitrogen (Total Kjeldahl)	104	Digestion/ Distillation/ Titrim	5.04	mg/L as N	
Nitrogen (Total Oxidised)	151	Colorimetry	0.07	mg/L as N	
Nitrogen (Total)	0	Calculation	5.11	mg/L as N	
pH	110	Electrometry	7.5	pH Units	UKAS
Phenols (Total)	223	GCMS	<0.10	ug/L	
Phosphate (Ortho)	117	Colorimetry	<0.006	mg/L as P	

Signed : Donna Heslin

Date : 29/04/09

Donna Heslin - Laboratory Manager

Acc. : Accredited Parameters by ISO 17025:2005

All organic results are analysed as received and all results are corrected for dry weight at 104 C
Results shall not be reproduced, except in full, without the approval of EURO environmental services
Results contained in this report relate only to the samples tested

* Subcontracted

Page 1 of 2



Environmental Science & Management
Water, Soil & Air Testing

Unit 35,
Boyne Business Park,
Drogheda,
Co. Louth
Ireland
Tel: +353 41 9845440
Fax: +353 41 9846171
Web: www.euroenv.ie
email: info@euroenv.ie

A copy of this certificate is available on www.euroenv.ie

Customer	Gearoid McCarthy Monaghan Co. Co. County Offices The Glen Co Monaghan	Lab Report Ref. No.	0810/038/04S
Customer PO	400092317	Date of Receipt	16/06/2008
Customer Ref	Castleblayney downstream	Date Testing Commenced	16/06/2008
		Received or Collected	Collected by Euro
		Condition on Receipt	Acceptable
		Date of Report	29/04/2009
		Sample Type	Trade Effluent

CERTIFICATE OF ANALYSIS - Supplementary

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Phosphate (Total)	166	Digestion/ Colorimetry	0.192	mg/L as P	UKAS
Selenium	177	ICPMS	2	ug/L	
Simazine	191	HPLC	<0.01	ug/L	
Solids (Total Suspended)	106	Filtration/ Drying @ 104C	105	mg/L	
Sulphate	119	Colorimetry	28.15	mg/L as SO4	UKAS
Temperature	715	DO Meter	13.8	degrees C	
Toluene	179	GCMS	<1	ug/L	
Tributylitin	0	GCMS	<0.02	ug/L as Sn	
Xylene	179	GCMS	<1	ug/L	
Zinc	177	ICPMS	77.6	ug/L	

For inspection purposes only.
Consent of copyright owner required for any other use.

Signed : Donna Heslin

Date : 29/04/09

Donna Heslin - Laboratory Manager

Acc. : Accredited Parameters by ISO 17025:2005

All organic results are analysed as received and all results are corrected for dry weight at 104 C
Results shall not be reproduced, except in full, without the approval of EURO environmental services
Results contained in this report relate only to the samples tested

* Subcontracted

Page 2 of 2

APPENDIX 7

Site Map – Location of Site Notice Site Notice Location Photograph Site Notice

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Site Notice



Monaghan County Council

“APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE WATER DISCHARGE LICENCE”

In accordance with the requirements of the Waste Water Discharge (Authorisation) Regulations 2007 (S.I. No. 684 of 2007), Monaghan County Council, The Glen, Monaghan, intends to apply to the EPA for a Waste Water Discharge Licence for the Castleblayney Wastewater Treatment Plant and associated sewer network.

Castleblayney Wastewater Treatment Plant is a biological treatment plant used for the treatment of municipal wastewater conveyed in the foul sewer network serving the agglomerations of Castleblayney and its environs.

Castleblayney Wastewater Treatment Plant is located at Muckno Street, Castleblayney, Co. Monaghan, National Grid Reference: E282914, N319951

Primary Discharge

PSW1 The associated Primary Discharge location from the wastewater treatment plant is located at Muckno Street, Castleblayney, Co. Monaghan, National Grid Reference: E283041, N319961

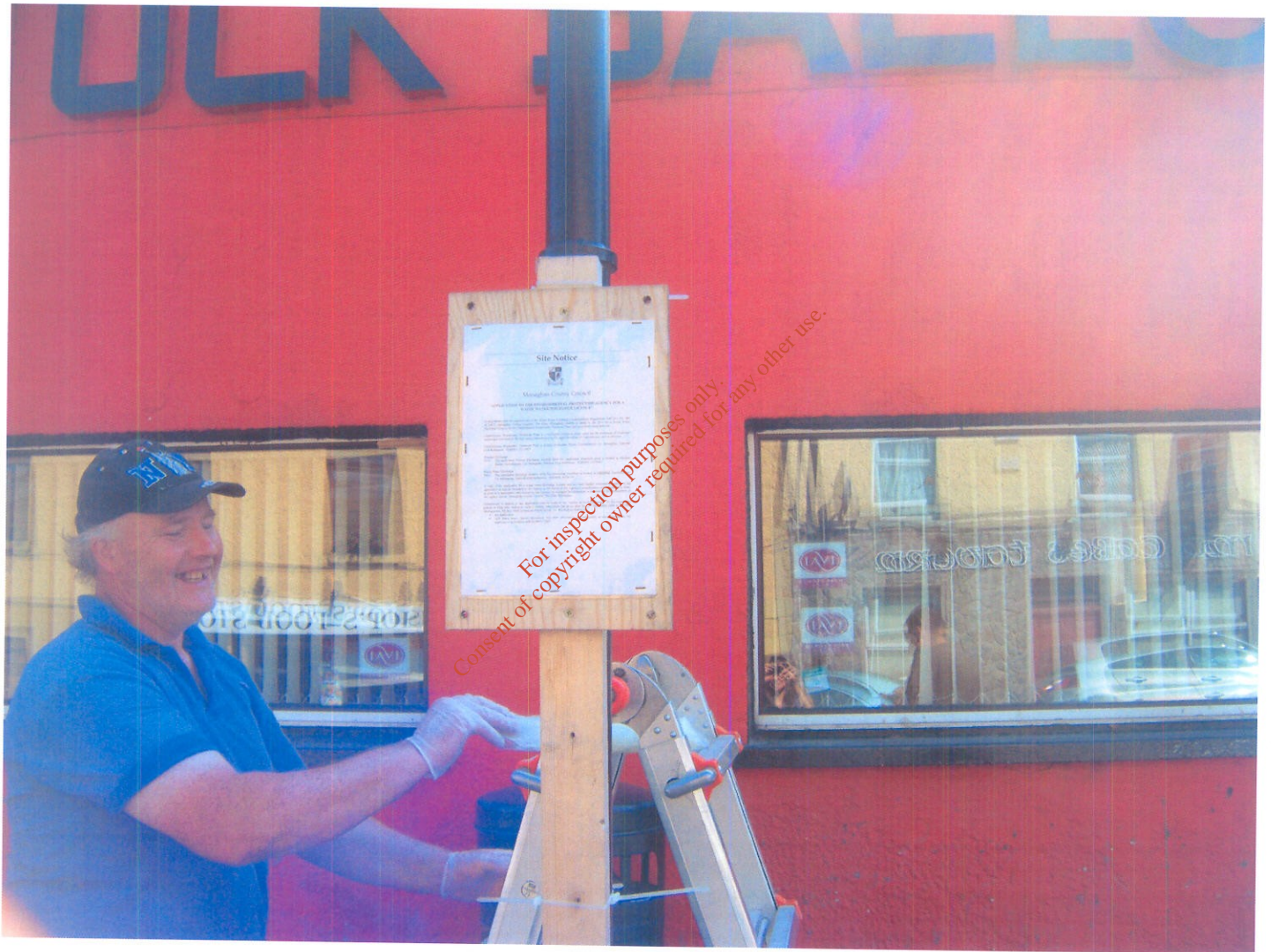
Storm Water Discharge

SW2 The associated discharge location from the stormwater overflow is located at Lakeview, Castleblayney, Co. Monaghan, National Grid Reference: E282879, N320154

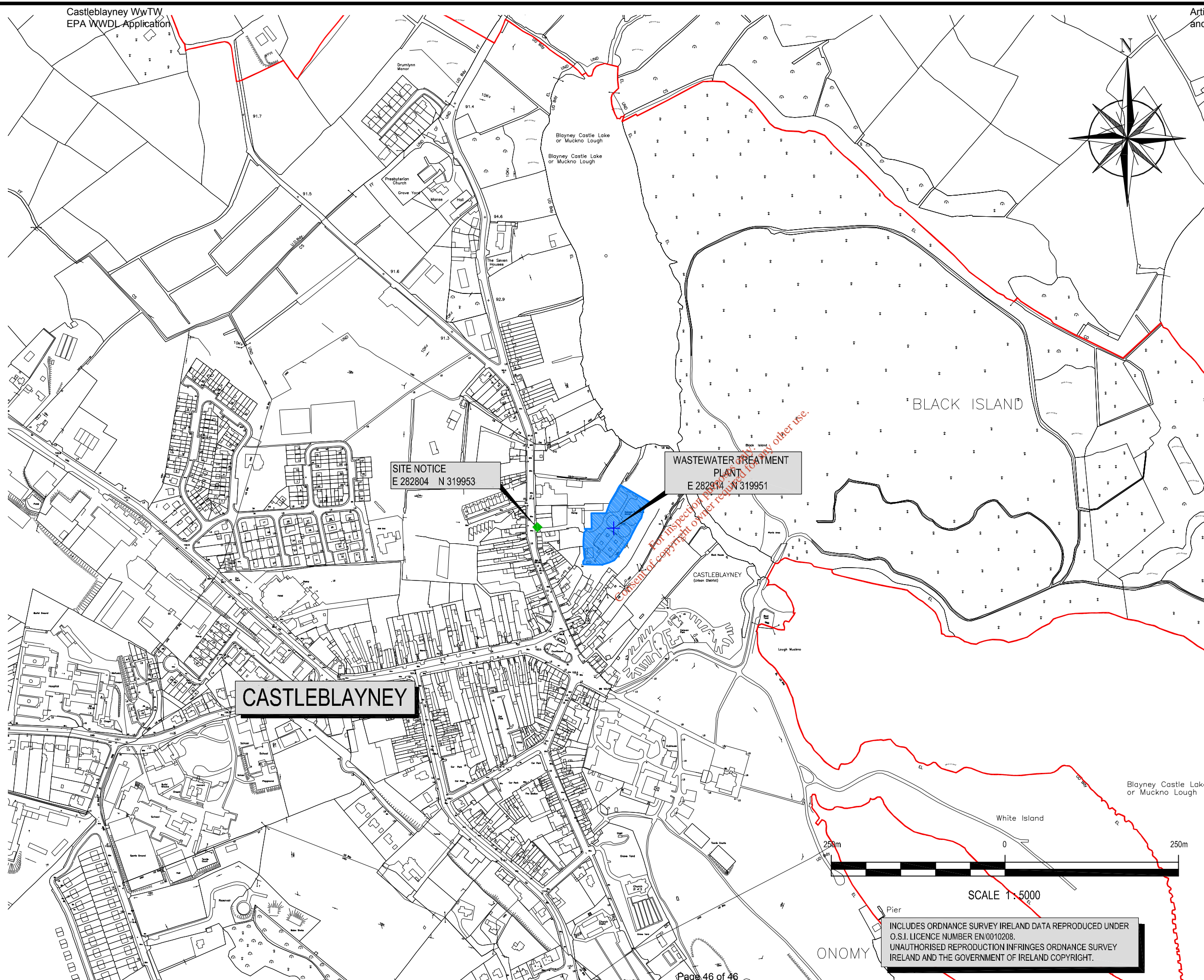
A copy of the application for a waste water discharge licence, and any such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the application, shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the headquarters of the Agency and at: Monaghan County Council, The Glen, Monaghan.

Submissions in relation to this application may be made to the Agency at its headquarters. In this regard any person or body who wishes to make a written submission can do so after the 22nd September 2008 to the EPA Headquarters, PO Box 3000, Johnstown Castle Estate, Co. Wexford in relation to:

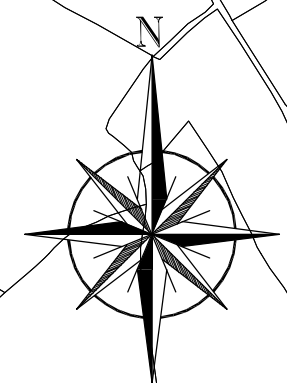
- the application
- such plans, maps, reports, documents and other information and particulars, as are submitted by the applicant in accordance with SI 684 of 2007







- LEGEND**
- AGGLOMERATION AREA
 - WASTEWATER TREATMENT PLANT
 - ◆ SITE NOTICE LOCATION



SITE NOTICE
E 282804 N 319953

WASTEWATER TREATMENT
PLANT
E 282914 N 319951

CASTLEBLAYNEY

BLACK ISLAND

CASTLEBLAYNEY
(Urban District)

SCALE 1:5000

INCLUDES ORDNANCE SURVEY IRELAND DATA REPRODUCED UNDER
O.S.I. LICENCE NUMBER EN/0010208.
UNAUTHORISED REPRODUCTION INFRINGES ORDNANCE SURVEY
IRELAND AND THE GOVERNMENT OF IRELAND COPYRIGHT.

REV	DATE	DESCRIPTION	D	C	A

DISCHARGE LICENCE

COPYRIGHT RESERVED - THIS DRAWING IS NOT TO BE USED FOR A PURPOSE OTHER THAN THAT FOR WHICH IT HAS BEEN ISSUED BY NICHOLAS O'DWYER LTD. NOR IS IT TO BE COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN CONSENT.

Nicholas O'Dwyer
CONSULTING ENGINEERS
Nulgrove Office Park, Nulgrove Avenue, Dublin 14
Tel: 01-296 9000 Fax: 01-296 9001 E-mail: nodwyer@nicholasodwyer.com

CLIENT: **Monaghan County Council**
Comhairle Chontae Mhuineacháin
Council Offices,
The Glen, Monaghan.
Tel: (047) 30500 Fax: (047) 82739

PROJECT: **WASTE WATER LICENCE APPLICATION FOR CASTLEBLAYNEY SEWERAGE SCHEME**

TITLE: **CASTLEBLAYNEY WWTW SITE NOTICE LOCATION**

SCALES	DRAWN	CHECKED	APPROVED
1:5000 @ A3	D.Rimdzkus	P.McAree	F.Lane
CAD REFERENCE	SECTION	DRAWING No.	REV
B.8 20384-DL-CY-08	B.8	17	-