

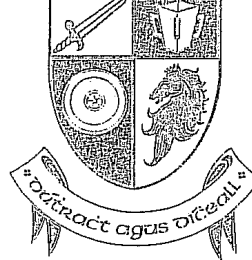
ATTACHMENT No: B9 (iii)

EPA Letter of Payment

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Oifigi Contae,
An Gleann,
Muineachán.

Guthán: 047 - 30500



County Offices,
The Glen,
Monaghan.

Tel: 047 30500

Fax: 047 82739

Email: info@monaghancoco.ie

Website: www.monaghan.ie

25th September 2008.

Mary Parle,
Accounts Section,
Environmental Protection Agency,
PO Box 3000,
Jobstown Castle Estate,
Co Wexford.

Re: Waste Water Discharge (Authorisation) Regulations 2007, SI No 684 of 2007 – payment of €75,000 by Electronic Fund Transfer.

Dear Sirs,

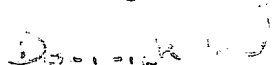
I wish to inform you that Monaghan County Council intends to formally make an application to your offices - as per our correspondence of the 17th September - in respect of three treatment plants below with discharges from agglomerations with a population equivalent of 2,001 to 10,000 per the Waste Water Discharge (Authorisation) Regulations 2007, SI No 684 of 2007;

- Clones Waste Water Treatment Plant, Legarhill, Clones.
- Castleblayney Waste Water Treatment Plant, Drumillard Little, Castleblayney.
- Ballybay Waste Water Treatment Plant, Cornmucklasglass, Ballybay.

Monaghan County Council is currently preparing an application in respect of all three treatment plants and hopes to have same issued to you within a matter of weeks. However, I understand that a payment for €75,000 - €25,000 per application - in respect of these applications was issued to your offices prematurely by Electronic Fund Transfer – see attached remittance advice.

I regret the inconvenience this may cause but would be grateful if you could allocate these monies to these applications when they are eventually received by your office. For further information regarding the above feel free to contact me.

Best Regards


Dominick Mahon
A/SEO
Water Services

ATTACHMENT No: B10

Capital Investment Programme

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Monaghan

Water Services Investment Programme 2007 - 2009

Schemes to start 2007	W/S	Est. Cost
Carrickmacross Sewerage Scheme	S	22,000,000 22,000,000
Schemes to start 2008		
Castleblaney/Ballybay/Clones Wastewater Treatment Plant	S	12,000,000 12,000,000
Schemes to start 2009		
Monaghan Sludge Management (H)	S	2,570,000
Monaghan Town Sewerage Scheme (H)	S	27,500,000
		30,070,000
Serviced Land Initiative		
Monaghan Town Sewerage Scheme (North Eastern Collection Area)(H)	S	2,700,000 2,700,000
Rural Towns and Villages Initiative		
Carrickmacross Water Supply Scheme	W	4,500,000
Castleblaney Water Supply Scheme Stage 2	W	1,100,000
		5,600,000
Water Conservation Allocation		3,185,000
Asset Management Study		50,000
Programme Total		75,605,000

(H) Refers to a Hub as designated in the National Spatial Strategy

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ATTACHMENT No: C.1

OPERATIONAL INFORMATION REQUIREMENTS

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C.1 Operational Information Requirements

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.

Wastewater Treatment Plant

Introduction

Preliminary treatment is provided by means of a mechanical screen and automatic grit removal. Ferric sulphate is dosed to enhance phosphorus removal upstream of the aeration tanks. Treated effluent from the settling tanks combines with settled 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. The access road to the Castleblayney WWTP is through the adjacent mart.

Summary of Plant

The plant consists of the following main components.

Treatment Stage	Element	Description (dimensions, capacities etc)	No of Units
Preliminary	Screen	Mechanical course screen (30mm aperture)	1
	Grit removal	Vortex Grit Trap	1
	Flow monitor	Venturi flume at the plant inlet and outlet	2
Primary	Storm water settlement	Rectangular Tank (capacity = 300m ³)	1
	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

Summary of Design Parameters

Parameter	
Population Equivalent	12,960
Daily Dry Weather Flow (m ³ /day)	2916
Dry Weather flow (l/sec)	33.80
Peak Flow to Outfall (l/sec)	270
Peak Flow to Full Treatment(l/sec)	101.3
BOD (kg/day)	777.6
Total Phosphorus (kg.P/day)	29.16
Total Nitrogen (kg.N/day)	116.64

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).

Following screening flows greater than 70 l/s overflow a storm weir, join the final treated effluent discharge line and discharge to Lough Muckno at PSW1. 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. Screenings and grit are not washed and are stored on site prior to their disposal at Scotch Corner landfill. 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.

Primary Treatment

Primary treatment is not provided at the site.

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. The aeration tanks have a total capacity of approximately 3,600 m³, which corresponds to a residence time of approximately 5 days at current DWF or 1.6 days at a flow of 3DWF. Each tank is fitted with two 18 kW vertical shaft surface aerators. The F/M ratio was less than 0.06 kg is generally maintained between 2,500 and 3,000 mg/l.

Clarifiers

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, 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.

Tertiary Treatment

Tertiary treatment is not provided at the treatment plant.

Sludge Treatment and Disposal

Sludge is not imported to Castleblayney WWTW 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 dewatering press rated at 100 kg ds/hr, produces a dewatered cake at 9 % dry solids. The dewatered sludge is stored in a covered skip and 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.

The sludge chamber is divided between the sludge return sump and the waste sludge sump with drawoff controlled manually by manual valves, penstocks and adjustable bellmouths. The sludge return facilities are turned off for 12 hours prior to dewatering to allow a build-up of sludge prior to wasting. Normally the sludge return pumps operate for 15-20 minutes per hour. Probes control the automatic operation of the sludge return pumps.

Sludge is dewatered 3-4 days per week producing approximately 12 tonnes of cake. The sludge is discharged into a trailer and transported to the old sludge drying beds where it is blended with sludge from Monaghan Town WWTW and other smaller WWTW's prior to being exported for further treatment and disposal.

Storm Water Treatment

The Imhoff Tank from the original wastewater treatment plant was converted into a storm holding tank. When the storm tank has filled, settled storm water overflows to Lough Muckno via the final treated effluent line at 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).

Power Generation

There is no standby power generator on site.

C.1.1 Storm Water Overflows

In relation to obtaining the Waste Water Discharge Licence, there have been 2 No. storm water overflows identified. However, the manhole location and sewer inspection survey identified three overflows from the foul/combined system. However, only two of these discharge either directly or via the separate surface water collection networks, to Lough Muckno at point SW2. The 3rd identified (Dundalk Road CSO) 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.

The frequency of overflows has been estimated based on the information available on site. It is considered that the overflows are within the number which would be recommended by "Procedures and Criteria in relation to Storm Water Overflows". The locations of the three overflows within the Castleblayney catchment are shown in Figure C1.1

For each storm water overflow within the waste water works the following information shall be submitted:

- An assessment to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency, and
- Identify whether any of the storm water overflows are to be decommissioned, and identify a date by which these overflows will cease, if applicable.

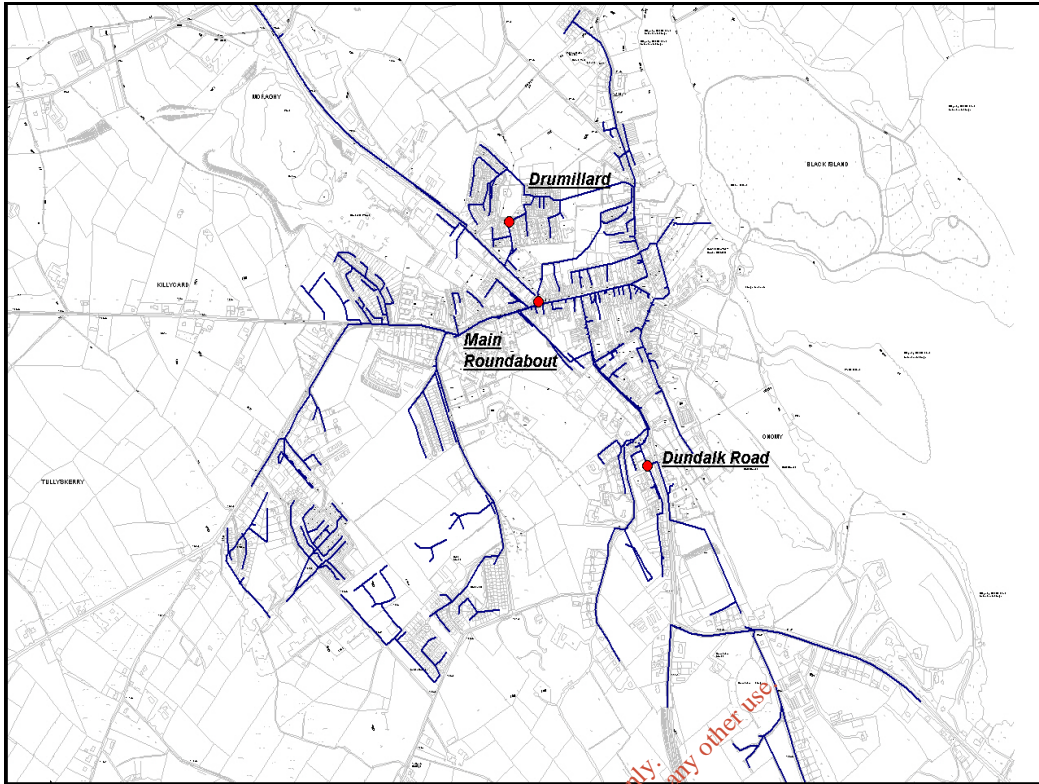


Figure C1.1 – Overflow Locations within Castleblayney

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.

2. Drumillard CSO

Description:

This CSO is located in a 9inch concrete combined sewer beside number 17 Park Road in the Park Drive Estate. The catchment upstream of the overflow consists of the Monaghan Rd pumping station catchment as well as part of the Park Rd 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.

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 – 3,124PE

E = design industrial effluent flow – 2,594PE

DWF = Design dry weather flow – 1,280.70 m³/day

$$\begin{aligned} \text{Formula A} &= \text{DWF} + 1.36P + 2E \\ &= (1,280.70 \text{ m}^3/\text{day}) + (1.36 \times 3124) + (2 \times 2594) \\ &= 10,717.30 \text{ m}^3/\text{day} \end{aligned}$$

C.1.2 Pumping Stations

The locations of the 9 foul/combined pumping stations within Castleblayney are shown below on Drawing No. 01, attachment B1. As well as the main lift pumping station on Muckno St, there are 8 number local pumping stations in the catchment, elevating sewage from low lying areas into the main gravity network.

PUMPING STATION SUMMARY					
Pumping Station	Pump			Rising Main	
	No. of Pumps	Wet Well (m ³)	Pump Rate (l/s)	Diameter (mm)	Material
Monaghan Road PS	2	10.6	12.5	80	Ductile Iron
Muckno Street PS	2	23.7	80.7	200	Ductile Iron
Ashview Court PS	2	2.2	-	50	Ductile Iron
Laurel Hill PS	2	15.7	-	80	Ductile Iron
Crescent Hill PS	2	27.4	9.1	80	uPVC
Castlecoole PS	3	31.2	27.3	150	Ductile Iron
Kockturnagh PS	2	10.2	8.5	80	uPVC
Conbury Hill PS	2	16.1	-	80	Ductile Iron
Dundalk Road PS	3	15.5	4.7	80	Ductile Iron

1. Muckno Street Pumping Station

This pumping station is located just to the north-west of the WwTW. It is the main pumping station in the catchment with four of the five sub catchments draining directly to it. Flows are lifted to the inlet works via a 200mm diameter ductile iron rising main. This pumping station was constructed in 2001 and is in good condition.

- Number of duty and standby pumps at each pump station; *There are two submersible pumps in operation on a duty/standby arrangement. The maximum pumping rate measure at the station during the survey was 81 litres/sec.*
- The measures taken in the event of power failure; *There is a backup power supply in the case of a power failure.*
- Details of storage capacity at each pump station; *Pump sump volume is 23.7m³*
- Frequency and duration of activation of emergency overflow to receiving waters. (Clarify the location where such discharges enter the receiving waters); *There are no emergency storm overflow tanks or pipes at this pumping station. However, there are 2 CSO's upstream which limit the incoming flows.*

2. Monaghan Road Pumping Station

This pumping station is located just off the main Castleblayney to Monaghan Road to the north of the Meadowbrook Foods factory. The pumping station receives flows from the east and west along the Monaghan Road and pumps to the gravity system at the entrance to the Beech Drive Housing Estate. The pumping station lifts flows approximately 6.0m to a 150mm collector sewer via 866m of 80mm diameter ductile iron rising main. The pumping station is in reasonable condition.

- Number of duty and standby pumps at each pump station; *There are two submersible pumps in operation on a duty/standby arrangement. The maximum pumping rate observed during the survey 12.5 litres/sec.*
- The measures taken in the event of power failure; *There is no backup power supply in the case of a power failure.*
- Details of storage capacity at each pump station; *Pump sump volume is 10.6 m³*
- Frequency and duration of activation of emergency overflow to receiving waters. (Clarify the location where such discharges enter the receiving waters); *There is no emergency storm overflow tanks or pipes at this pumping station.*

3. Dundalk Road Pumping Station

This pumping station is located on the Dundalk Road opposite the Annahale Hatchery and collects flows from a number of local collector sewers. Two 150mm sewers and one 225mm sewers drain down to the station and are then lifted approximately 19m and

pumped to a 225mm diameter sewer opposite Ard Scoil Lorgan on the Dublin Road. The rising main is 80mm diameter and spans approximately 630m. The pumping station was assessed as being relatively new and in good condition.

- Number of duty and standby pumps at each pump station; *There are two submersible pumps in the wet well arranged in a duty/standby configuration. The maximum pumping rate observed during the survey was 4.7 litres/sec.*
- The measures taken in the event of power failure; *There is no backup power supply in the case of a power failure.*
- Details of storage capacity at each pump station; *Pump sump volume is 15.5m³*
- Frequency and duration of activation of emergency overflow to receiving waters. (Clarify the location where such discharges enter the receiving waters); *There is a 300mm emergency overflow pipe which discharges to an oval shaped precast concrete chamber. It is set at approximately 2m above the invert of the incoming sewer. From here the overflow discharges to an adjacent stream which then runs into Muckno Lough. Please note that the emergency overflow will normally only be activated in the event that the both pumps fail or there is a power failure. Frequencies are not known.*

4. Castlecoole Pumping Station

This pumping station is located at the southern end of the Killycard Industrial Estate opposite the Kingspan Insulations Limited factory. The pumping station collects flows from the industrial estate and a number of nearby housing estates including The Willows and Bree. A 225mm diameter and a 150mm diameter sewer drain down to the pumping station and are then lifted approximately 6.0 meters to a 150mm diameter collector sewer outside house number 8 in the Bree estate. The rising main is 150mm diameter and spans some 575 meters to the discharge manhole. The pumping station is relatively new and in good condition.

- Number of duty and standby pumps at each pump station; *There are two submersible pumps in the wet well arranged in a duty/standby configuration. The maximum pumping rate observed during the survey was 27.496 litres/sec.*
- The measures taken in the event of power failure; *There is no backup power supply in the case of a power failure.*
- Details of storage capacity at each pump station; *Pump sump volume is 31.2m³*
- Frequency and duration of activation of emergency overflow to receiving waters. (Clarify the location where such discharges enter the receiving waters); *There are two emergency overflow pipes from the wet well located at depths of 1.8 and 3.4m from the cover level. The overflow discharges to an adjacent stream. Please note that the emergency overflow will normally only be activated in the*

event that the both pumps fail or there is a power failure. Frequencies are not known.

5. **Conabury Hill**

The **Conabury Hill** pumping station serves the Conabury Hill estate off the Dublin Rd to the south of the town.

- The 100mm rising main discharges to manhole SH82197005 near the entrance to the estate. Number of duty and standby pumps at each pump station; *There are two submersible pumps in the wet well arranged in a duty/standby configuration. The maximum pumping rate observed during the survey was 27.496 litres/sec.*
- The measures taken in the event of power failure; *There is no backup power supply in the case of a power failure.*
- Details of storage capacity at each pump station; *Pump sump volume is 16.1m³*
Frequency and duration of activation of emergency overflow to receiving waters. (Clarify the location where such discharges enter the receiving waters); *The facility contains an emergency overflow set at approximately 2.5m above the invert of the lowest incoming sewer. The destination for the overflow pipe is not known. Please note that the emergency overflow will normally only be activated in the event that the both pumps fail or there is a power failure. Frequencies are not known*

6. **Knockturnagh**

The **Knockturnagh** pumping station serves the Coill Darragh and Knockturnagh estates in Bree to the south west of the town.

- The 80mm rising main discharges to manhole SH82181804 behind the Rosevale estate. Number of duty and standby pumps at each pump station; *There are two submersible pumps in operation on a duty/standby arrangement. The maximum pumping rate observed during the survey 8 litres/sec.*
- The measures taken in the event of power failure; *There is no backup power supply in the case of a power failure.*
- Details of storage capacity at each pump station; *Pump sump volume is 8.5m³*
Frequency and duration of activation of emergency overflow to receiving waters. (Clarify the location where such discharges enter the receiving waters); *There is no emergency overflow facility at this pumping station.*

7. **Crescent Hill**

The **Crescent Hill** pumping station serves the western part of the Crescent Hill estate to the west of the town.

- The rising main discharges to manhole SH81198702 outside No 36 Crescent Hill. Number of duty and standby pumps at each pump station; *There are two submersible pumps in operation on a duty/standby arrangement. The maximum pumping rate observed during the survey 9 litres/sec.*
- The measures taken in the event of power failure; *There is no backup power supply in the case of a power failure.*
- Details of storage capacity at each pump station; *Pump sump volume is 27.4 m³*
- Frequency and duration of activation of emergency overflow to receiving waters. (Clarify the location where such discharges enter the receiving waters); *There is no emergency storm overflow facility at this pumping station.*

8. Ashview Court

The **Ashview Court** pumping station serves part of the Ashview Court estate off Shercock Rd towards the town centre.

- The 100mm rising main discharges to manhole SH82193702 outside No 20 Ashview Court. Number of duty and standby pumps at each pump station; *There are two submersible pumps in operation on a duty/standby arrangement. The maximum pumping rate observed during the survey 6 litres/sec.*
- The measures taken in the event of power failure; *There is no backup power supply in the case of a power failure.*
- Details of storage capacity at each pump station; *Pump sump volume is 2.2 m³*
- Frequency and duration of activation of emergency overflow to receiving waters. (Clarify the location where such discharges enter the receiving waters); *There is no emergency storm overflow facility at this pumping station.*

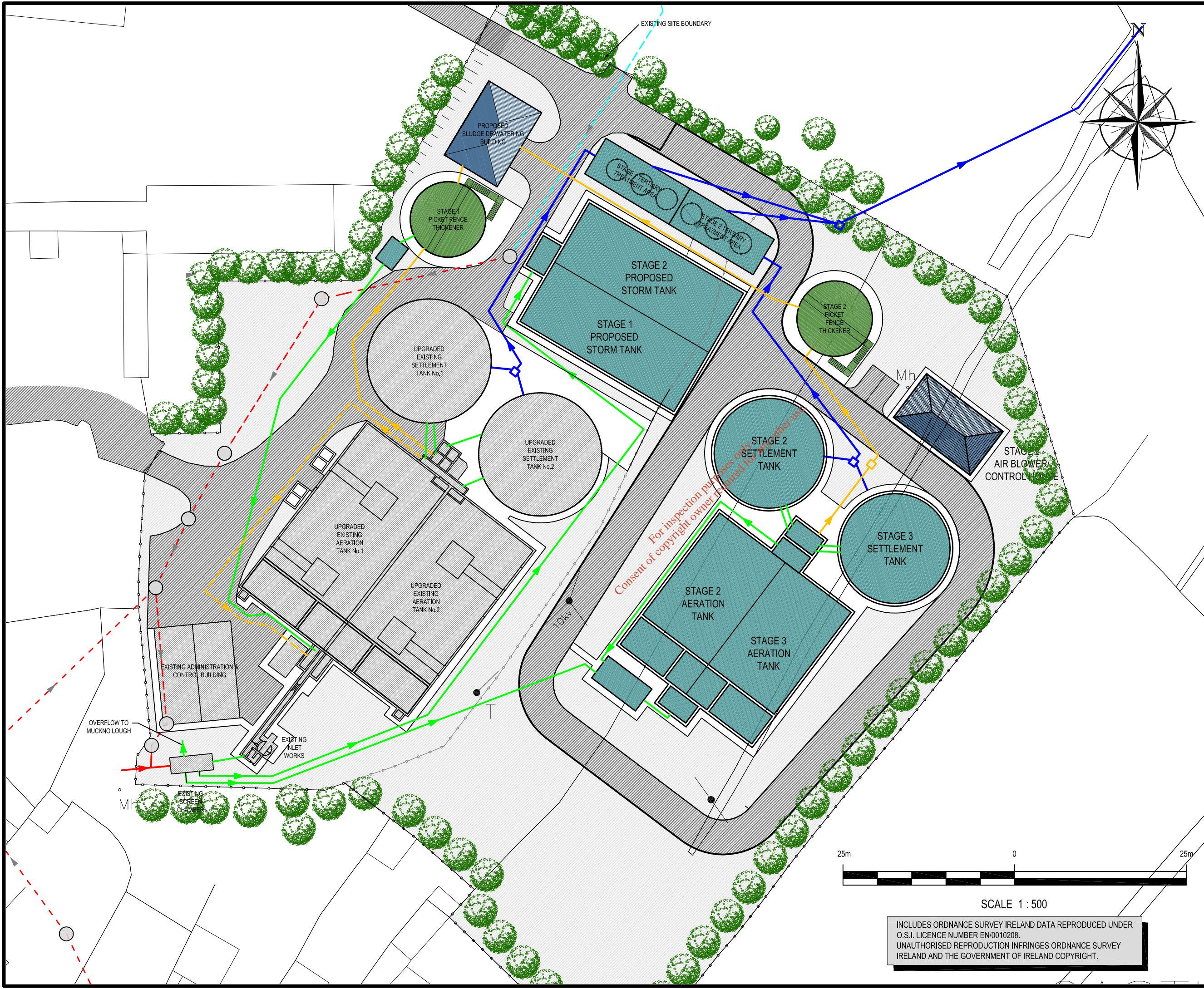
9. Laurel Hill

The **Laurel Hill** pumping station serves part of the Laurel Hill Place estate also off Shercock Rd and adjacent to Ashview Court.

- The 100mm rising main discharges to manhole SH82192605 at the entrance to the estate off Shercock Rd. Number of duty and standby pumps at each pump station; *There are two submersible pumps in the wet well arranged in a duty/standby configuration. The maximum pumping rate observed during the survey was 6 litres/sec.*
- The measures taken in the event of power failure; *There is no backup power supply in the case of a power failure.*
- Details of storage capacity at each pump station; *Pump sump volume is 15.7m³*
Frequency and duration of activation of emergency overflow to receiving waters. (Clarify the location where such discharges enter the receiving waters); *The*

facility contains an emergency overflow set at approximately 1.8m above the invert of the incoming sewer. The destination for the overflow pipe is not known. Please note that the emergency overflow will normally only be activated in the event that the both pumps fail or there is a power failure. Frequencies are not known.

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NOTES

THIS IS A PRELIMINARY DRAWING SUBMITTED WITH THE PRELIMINARY REPORT

LEGEND

- EXISTING FOUL SEWER --- ○ ---
- EXISTING FOUL SEWER --- ○ ---
- EXISTING (FOUL) RISING MAIN --- ○ ---
- EXISTING OUTFALL --- ○ ---
- PROPOSED WASTEWATER SEWER --- ○ ---
- PROPOSED EFFLUENT SEWER --- ○ ---
- EXISTING SLUDGE SEWER --- ○ ---
- PROPOSED SLUDGE SEWER --- ○ ---
- PROCESS PIPES --- ○ ---

REV	DATE	DESCRIPTION	D	C	A

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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 PROPOSED FUTURE WASTEWATER TREATMENT PLANT LAYOUT**

SCALES	DRAWN	CHECKED	APPROVED
1:500 @ A3	D.Rimdzius	P.McAree	F.Lane
CAD REFERENCE	SECTION	DRAWING No.	REV
C.1 20384-DL-CY-08	C.1	08	-

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NOTES

LEGEND

EXISTING FOUL SEWER	
EXISTING COMBINED SEWER	
EXISTING (FOUL) RISING MAIN	
EXISTING OUTFALL	

REV	DATE	DESCRIPTION	D	C	A

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Council Offices,
The Glen, Monaghan.
Tel: (047) 30500 Fax: (047) 82739

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

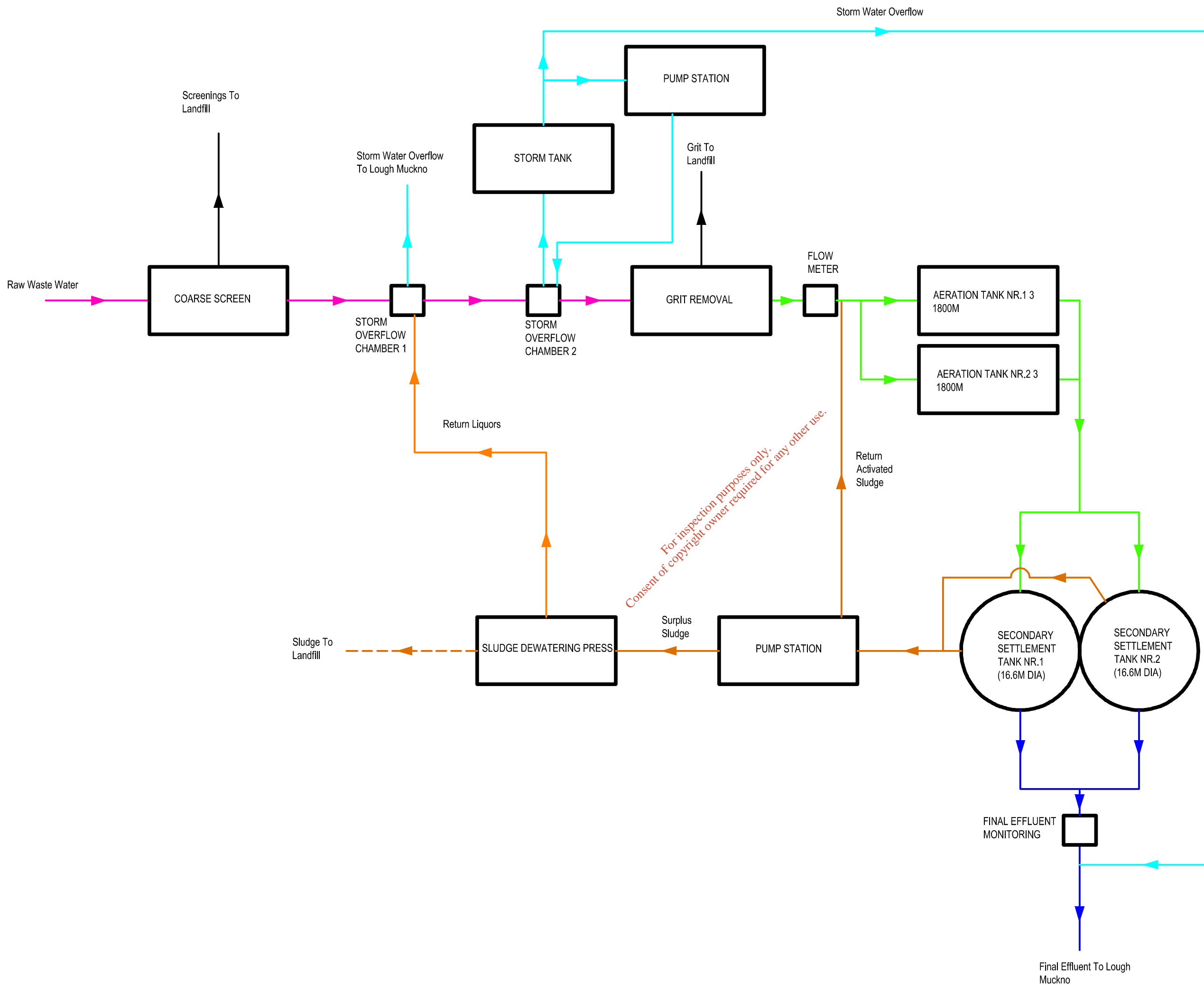
TITLE: **CASTLEBLAYNEY WASTEWATER TREATMENT PLANT LAYOUT**

SCALES	DRAWN	CHECKED	APPROVED
1:500 @ A3	D.Rimdzius	P.McAree	F.Lane
CAD REFERENCE	SECTION	DRAWING No.	REV
C.1 20384-DL-CY-07	C.1	07	-

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LEGEND

- Raw Waste Water —
- Final Effluent —
- Sludge —
- Dewatered Sludge —
- Flow to Secondary Tanks —
- Screenings/Grit —
- Storm Water —
- Return Liquors —
- Chemical Dosing —



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REV	DATE	DESCRIPTION	D	C	A

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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 WASTEWATER TREATMENT WORKS, FLOW DIAGRAM (P&ID)**

SCALES	DRAWN D.Rimdzius	CHECKED P.McAree	APPROVED F.Lane
NTS	DATE 11.11.2008	DATE 11.11.2008	DATE 11.11.2008
CAD REFERENCE C.1 20384-DL-CY-09	SECTION C.1	DRAWING No. 09	REV -

ATTACHMENT No: C.2
OUTFALL DESIGN AND CONSTRUCTION

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C.2 Outfall Design and Construction

Provide details on the primary discharge point & secondary discharge points and storm overflows to include reference, location, design criteria and construction detail.

Primary Discharge – Effluent Outfall – PSW1 (E282914, N319951)

Treated effluent is discharged from the wastewater treatment plant to Lough Muckno via a single outfall. The final effluent gravitates via a 530mm diameter gravity main to the primary discharge point PSW01. It is designed to be below the water level of the river at all times of the year and open ended.

The primary discharge point is 250m down stream of the treatment plant.

Secondary discharge points

There are no secondary discharge points.

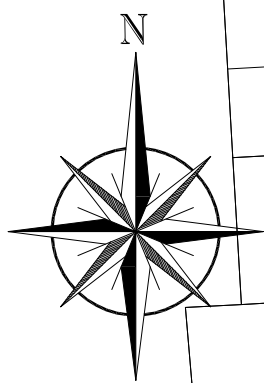
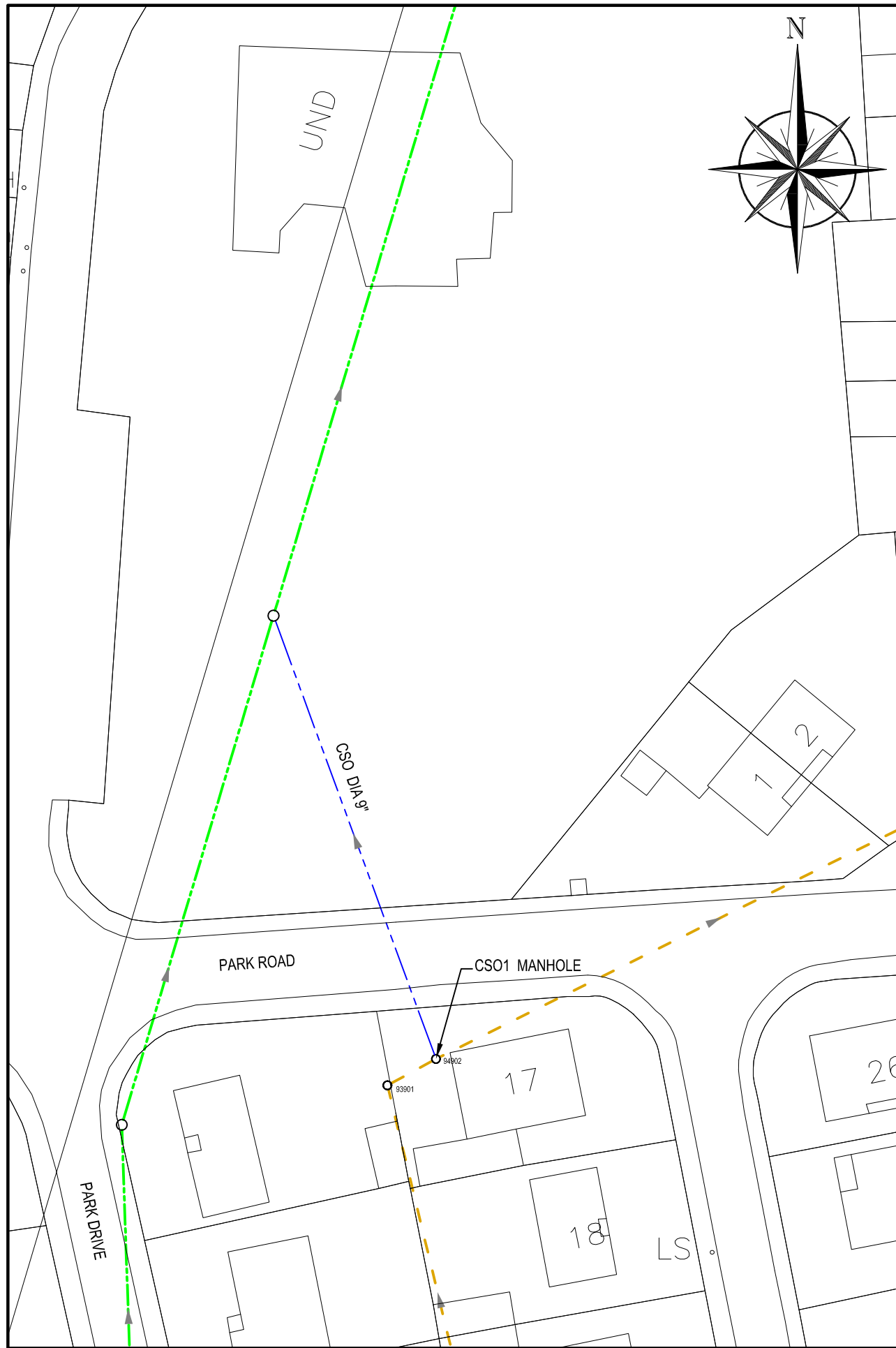
Storm Water Overflow (SW2) – E282879, N320154

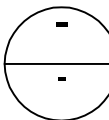
Main Roundabout CSO

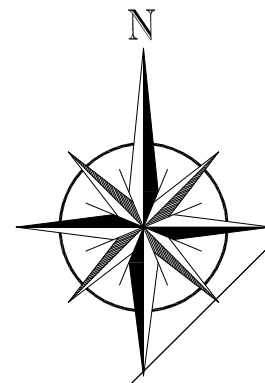
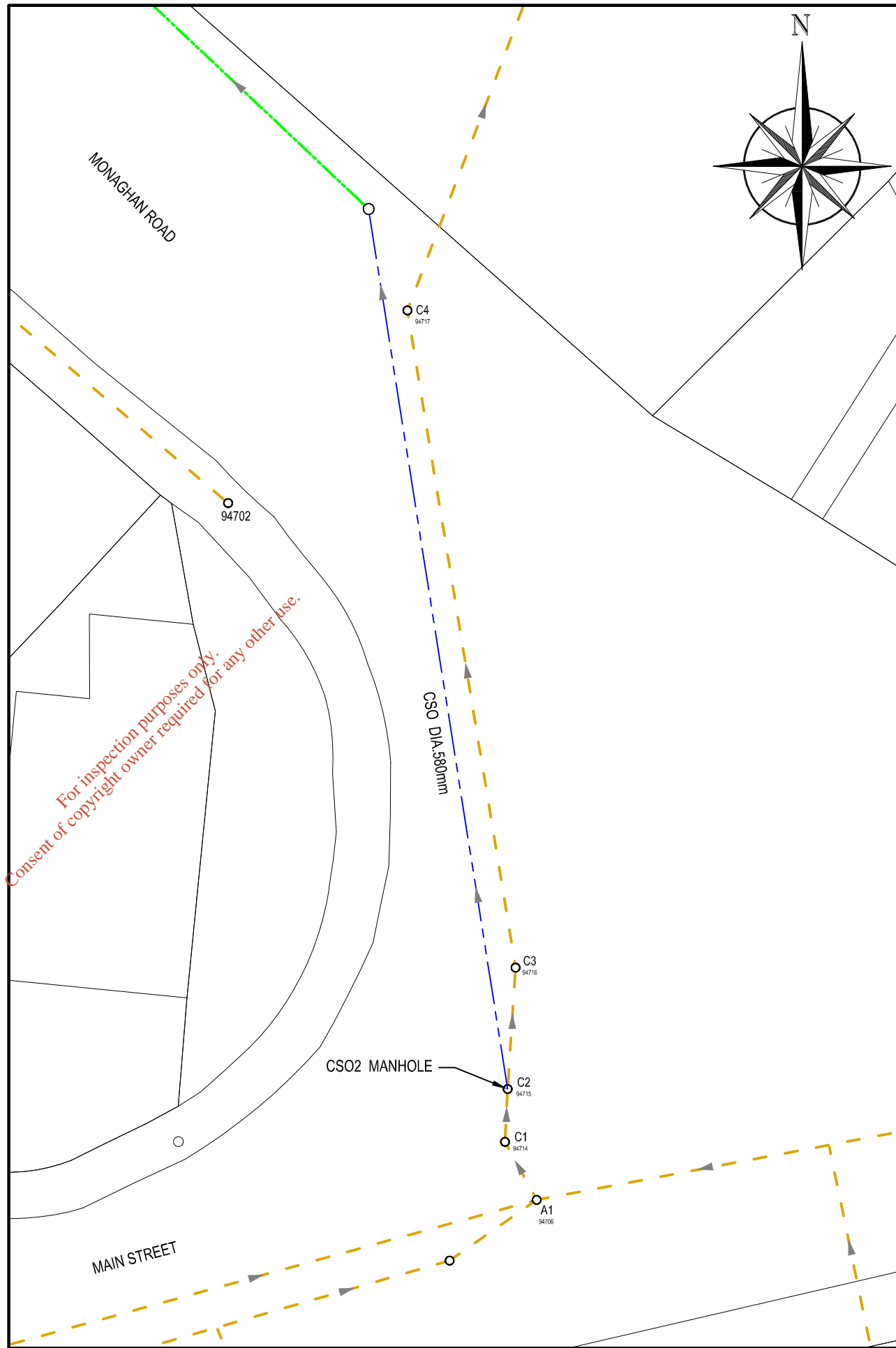
This overflow is located on a 375mm diameter concrete combined sewer at the junction of the Monaghan Road and Main Street. Excess flow discharges to a nearby separate storm water network over a low level weir and 580mm diameter overflow pipe. There is also a gate valve located on the combined sewer that 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 O5, attachment B5.

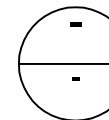
Drumillard CSO

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 O5, attachment B5.




COMBINED SEWER OWERFLOW CSO1
 SCALE 1:500








COMBINED SEWER OWERFLOW CSO2
 SCALE 1:200

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NOTES

LEGEND

- COMBINED SEWER 
- FOUL SEWER 
- STORM SEWER 
- COMBINED SEWER OVERFLOW 

REV	DATE	DESCRIPTION	D	C	A

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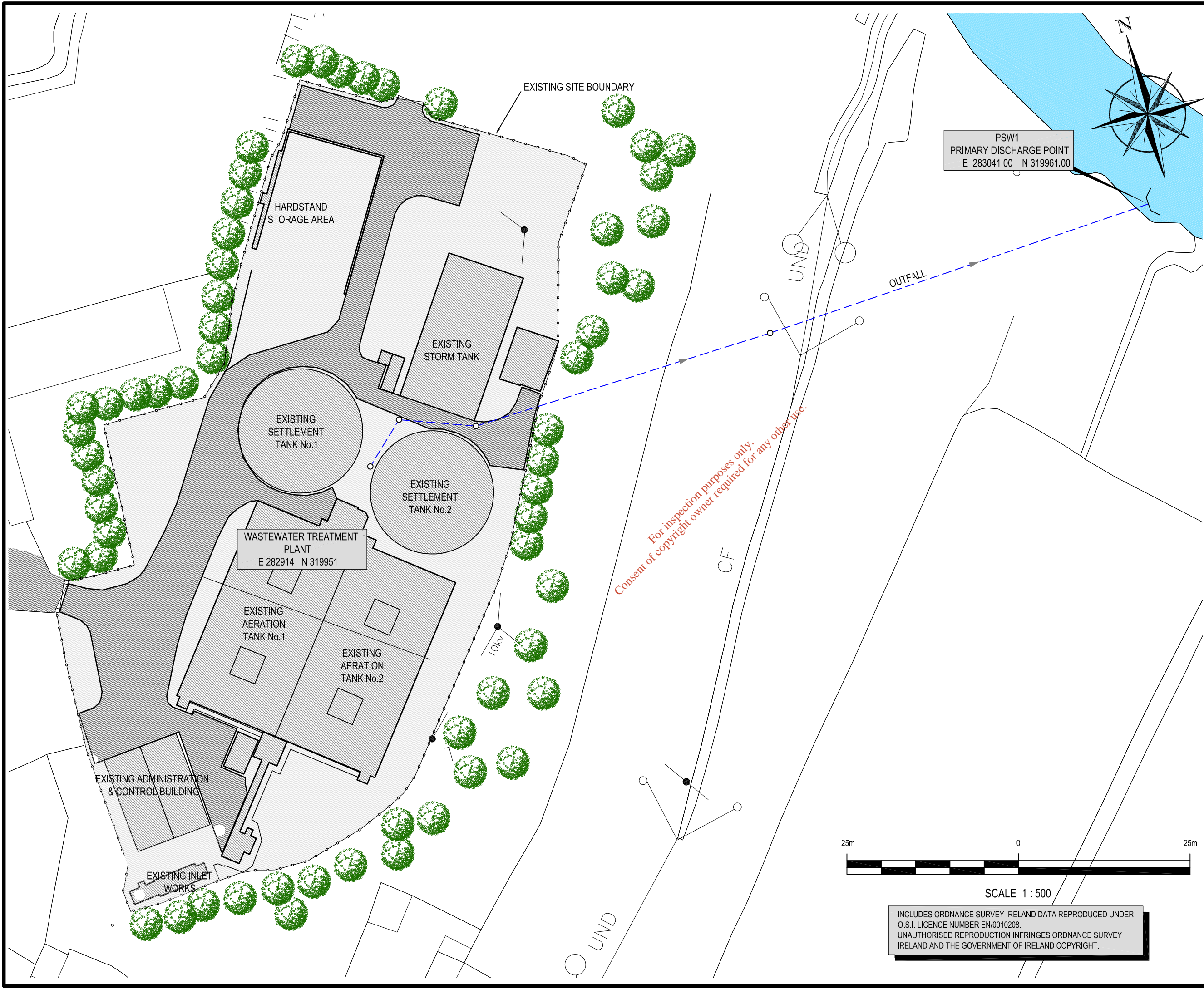
PROJECT
**WASTE WATER LICENCE APPLICATION
 FOR CASTLEBLAYNEY
 SEWERAGE SCHEME**

TITLE
**CASTLEBLAYNEY
 COMBINED SEWER OVERFLOWS
 CSO1 & CSO2**

SCALES	DRAWN	CHECKED	APPROVED
1:200 @ A3 1:500	D.Rimdzius	P.McAree	F.Lane
CAD REFERENCE	SECTION	DRAWING No.	REV
C:2 20384-DL-CY-11	C.2	11	-

LEGEND

OUTFALL 



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SCALE 1 : 500

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REV	DATE	DESCRIPTION	D	C	A

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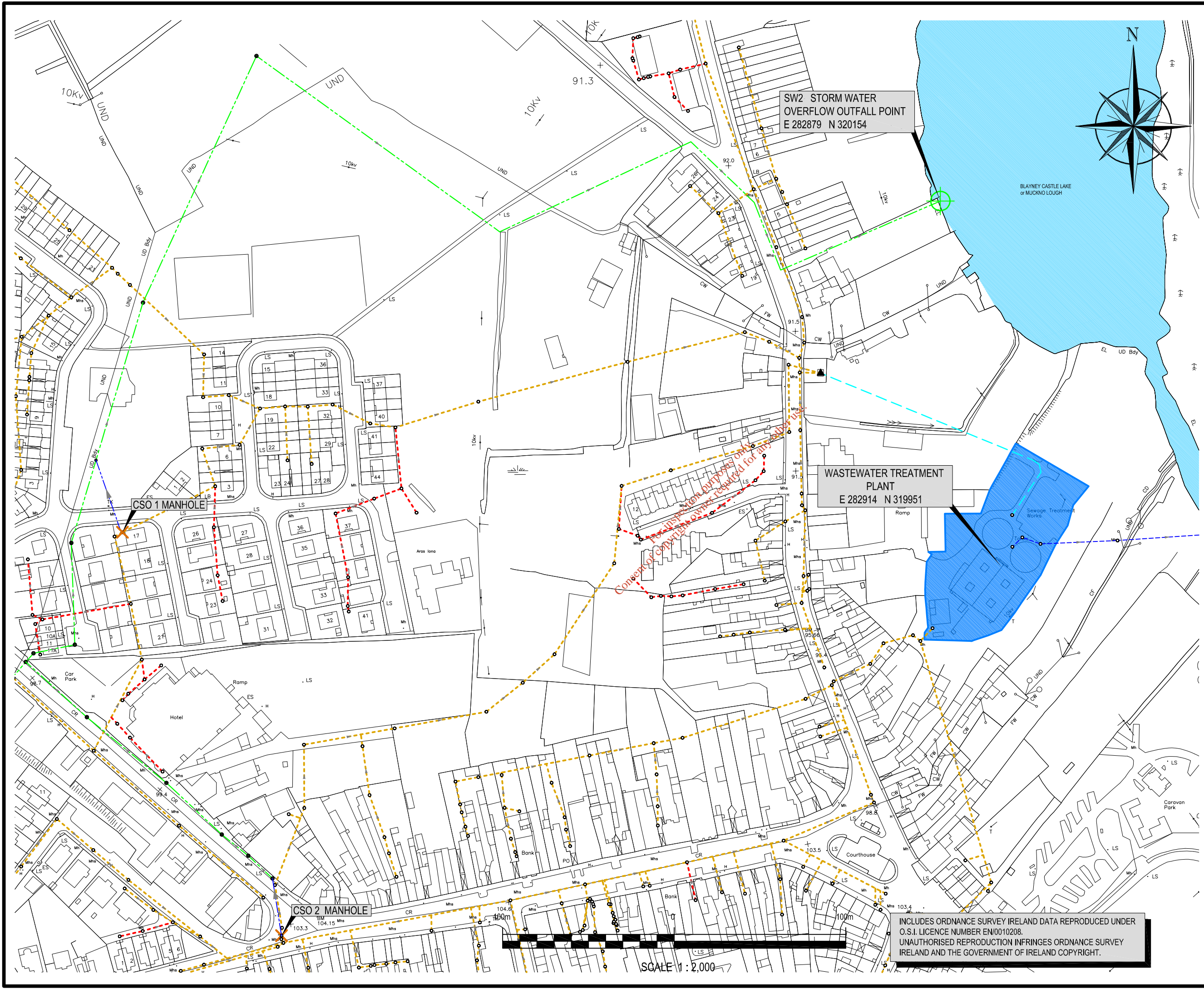
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PROJECT
WASTE WATER LICENCE APPLICATION FOR CASTLEBLAYNEY SEWERAGE SCHEME

TITLE
CASTLEBLAYNEY WASTEWATER TREATMENT WORKS, PRIMARY DISCHARGE POINT

SCALES	DRAWN	CHECKED	APPROVED
1:500 @ A3	D.Rimdzius	P.McAree	F.Lane
CAD REFERENCE	SECTION	DRAWING No.	REV
C.2 20384-DL-CY-10	C.2	10	-



NOTES

LEGEND

- COMBINED SEWER ---
- FOUL SEWER ---
- STORM SEWER ---
- COMBINED SEWER OVERFLOW --- CSO
- RISING MAIN ---
- OUTFALL ---
- STORM WATER OVERFLOW OUTFALL POINT ⊕ SW
- STORM WATER OVERFLOW POINT ✕ CSO
- WASTEWATER TREATMENT PLANT ■

REV	DATE	DESCRIPTION	D	C	A

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

TITLE: **CASTLEBLAYNEY COMBINED SEWER OVERFLOW OUTFALL**

SCALES 1:2000 @ A3	DRAWN D.Rimdzius	CHECKED P.McAree	APPROVED F.Lane
CAD REFERENCE C.2 20384-DL-CY-12	DATE 11.11.2008	DATE 11.11.2008	DATE 11.11.2008
SECTION C.2	DRAWING No. 12	REV -	

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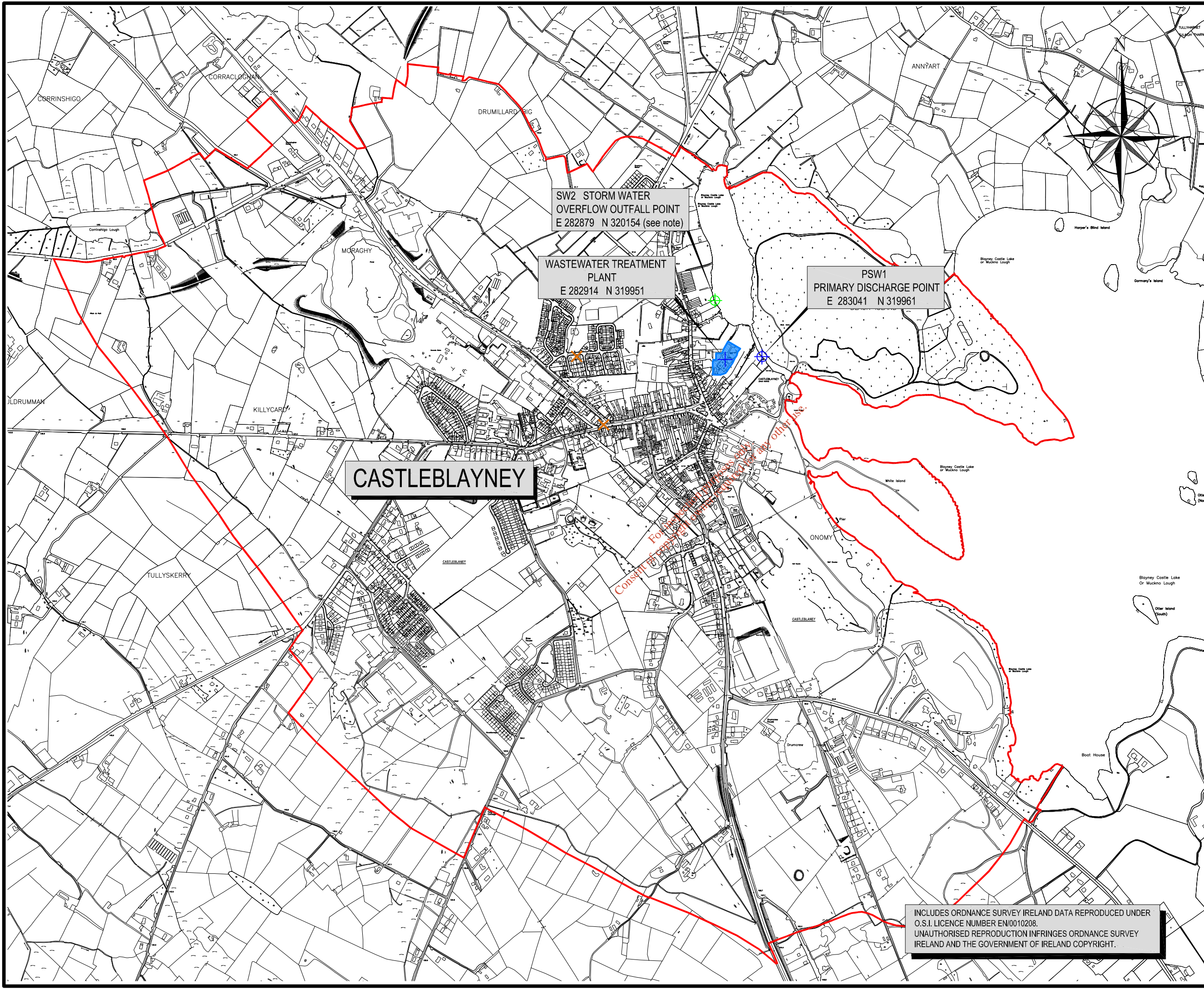
SCALE 1:2,000

ATTACHMENT No: D1
Discharge(s) to Surface Waters
Influent data

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EntityName	Influent Or Effluent	Date of Sampling	Sample Type (C or G)	BOD mg/l	COD mg/l	TSS mg/l	Total P mg/l P	Total N mg/l N	NH3-N mg/l N
Castleblayney	Influent	16/01/2007	C	148.2	461	270	3.13	1.16	15.1
Castleblayney	Influent	17/02/2007	C	237.7	564	198	1.34	2.22	16.70
Castleblayney	Influent	28/03/2007	C	307.8	600	208	0.90	1.93	27.37
Castleblayney	Influent	23/04/2007	C	198.0	541	176	1.56	0.98	32.21
Castleblayney	Influent	22/05/2007	C	236.0	672	187	6.65	2.87	28.76
Castleblayney	Influent	30/06/2007	C	231.0	562	232	6.43	0.34	23.45
Castleblayney	Influent	23/07/2007	C	345.0	571	341	4.76	0.19	29.65
Castleblayney	Influent	28/08/2007	C	80.0	317	162	15.87	<0.09	37.47
Castleblayney	Influent	19/09/2007	C	225.0	643	186	4.15	0.22	35.40
Castleblayney	Influent	29/10/2007	C	300.0	954	370	4.27	<0.09	29.05
Castleblayney	Influent	27/11/2007	C	298.0	876	234	3.56	1.12	23.87
Castleblayney	Influent	12/12/2007	C	198.0	499	287	2.76	1.54	19.76
Castleblayney	Influent	12/12/2007	C	198.0	499	287	2.76	1.54	19.76

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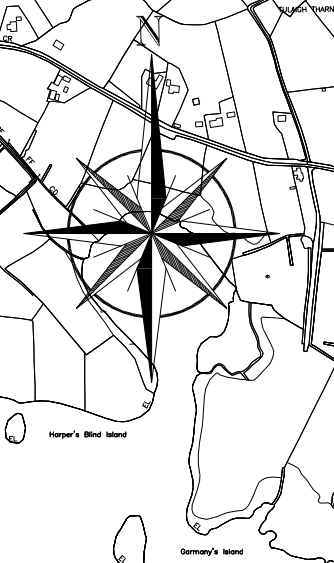


NOTES

1. STORM WATER OVERFLOW FROM CSO1 & CSO2 DISCHARGES AT SW2 ONLY

LEGEND

- AGGLOMERATION AREA
- WASTEWATER TREATMENT PLANT
- ⊕ PSW1 PRIMARY DISCHARGE POINT
- ⊕ SW STORM WATER OVERFLOW OUTFALL POINT
- ✕ CSO STORM WATER OVERFLOW POINT



SW2 STORM WATER
OVERFLOW OUTFALL POINT
E 282879 N 320154 (see note)

WASTEWATER TREATMENT
PLANT
E 282914 N 319951

PSW1
PRIMARY DISCHARGE POINT
E 283041 N 319961

CASTLEBLAYNEY

Consent for the use of the water and other use

REV	DATE	DESCRIPTION	D	C	A

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

TITLE: **CASTLEBLAYNEY WWTW DISCHARGES TO SURFACE WATERS**

SCALES	DRAWN	CHECKED	APPROVED
1:12,500 @ A3	D.Rimdzius	P.McAree	F.Lane
CAD REFERENCE	SECTION	DRAWING No.	REV
D.1 20384-DL-CY-13	D.1	13	-

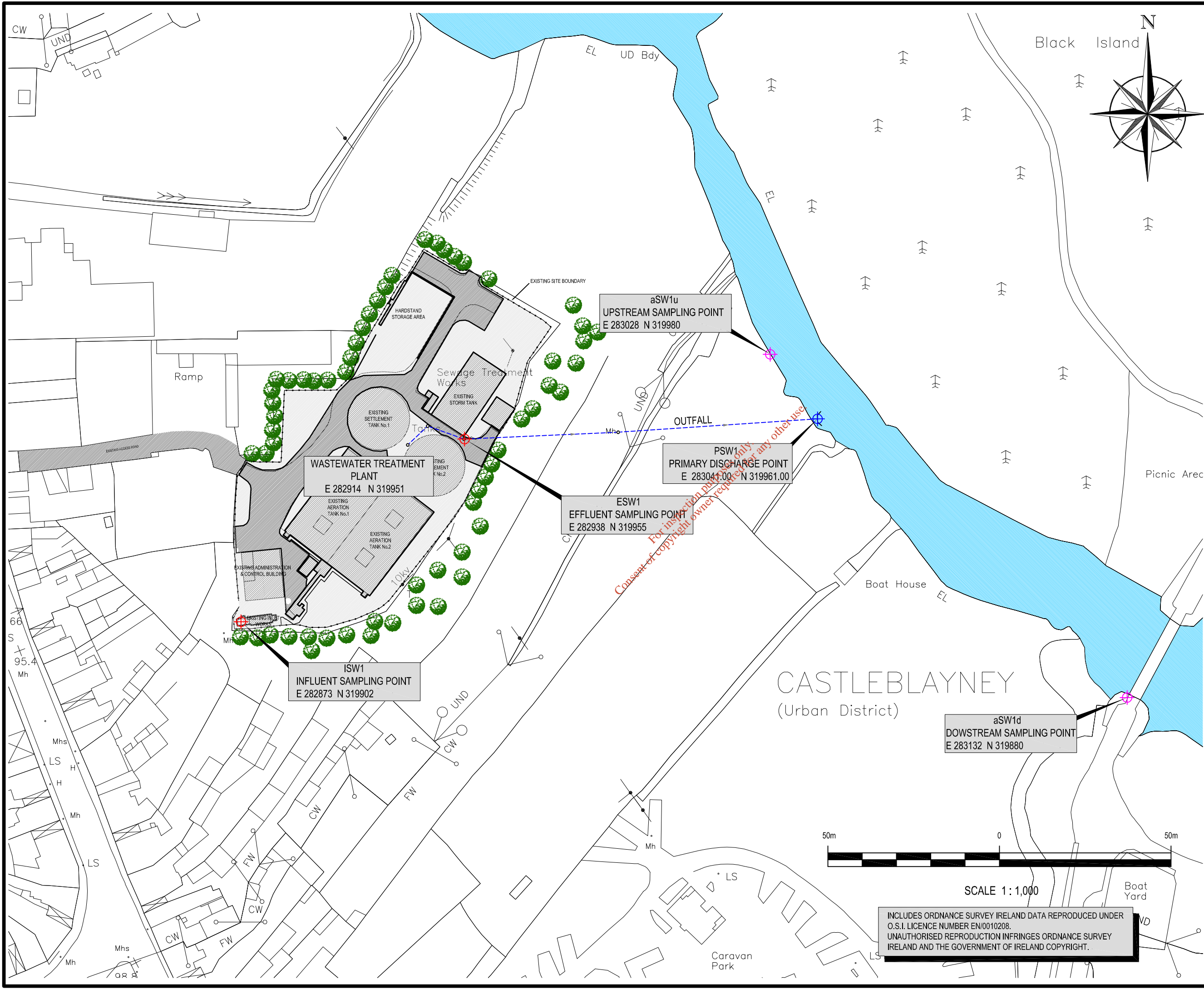
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ATTACHMENT No: E4
Sampling Data

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EntityName	Influent Or Effluent	Date of Sampling	Sample Type (C or G)	BOD mg/l	COD mg/l	TSS mg/l	Total P mg/l P PO ₄	Total N mg/l N	NH3-N mg/l N
Castleblayney	Effluent	16/01/2007	C	5.9	53	18	0.62	2.36	7.06
Castleblayney	Effluent	17/02/2007	C	8.9	48	10	0.56	2.65	12.40
Castleblayney	Effluent	28/03/2007	C	7.7	47	6	0.72	4.72	13.38
Castleblayney	Effluent	23/04/2007	C	11.0	29	7	0.45	2.54	12.50
Castleblayney	Effluent	22/05/2007	C	4.0	32	8	0.32	1.98	13.56
Castleblayney	Effluent	30/06/2007	C	8.7	23	127	0.54	2.54	12.10
Castleblayney	Effluent	23/07/2007	C	12.0	27	16	0.34	2.43	1.40
Castleblayney	Effluent	28/08/2007	C	<2	28	6	1.52	0.31	10.77
Castleblayney	Effluent	19/09/2007	C	<2	60	26	3.26	<0.09	27.78
Castleblayney	Effluent	29/10/2007	C	3.0	38	15	0.54	1.05	14.77
Castleblayney	Effluent	27/11/2007	C	3.5	29	12	0.19	0.29	12.98
Castleblayney	Effluent	12/12/2007	C	3.0	26	12	0.23	0.23	8.98

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NOTES

LEGEND

- OUTFALL
- PRIMARY DISCHARGE POINT
- EFFLUENT SAMPLING POINT
- INFLUENT SAMPLING POINT
- UPSTREAM SAMPLING POINT
- DOWNSAMPLING POINT

REV	DATE	DESCRIPTION	D	C	A

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

TITLE: **CASTLEBLAYNEY WWTW LOCATION OF MONITORING AND SAMPLING POINTS**

SCALES	DRAWN	CHECKED	APPROVED
1:1000 @ A3	D.Rimdzius	P.McAree	F.Lane
CAD REFERENCE	SECTION	DRAWING No.	REV
E.3 20384-DL-CY-14	E.3	14	-

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ATTACHMENT No: F1

Assessment of Impact on Receiving Surface or Ground Water

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- **Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.**

Lough Muckno/River Fane is monitored upstream of the treatment works at Station No. 0200, Derrycreevy Bridge and downstream of the works at Station No. 0300, Clarebane Bridge. The water quality at both stations has been classified as Q3 in 2003, this remains unchanged since 2000. The EPA Summary of Water Quality, 2004 states that the water quality of the River Fane was in a generally similar or slightly worse condition to that recorded in 2000. Lough Muckno was recorded as being eutrophic in the EPA Water Quality in Ireland 2001-2003. Lough Muckno continued to exert marked adverse effects on the reach immediately downstream during this period. Lough Muckno was designated as a sensitive area in S.I. No. 254 of 2001, Urban Waste Water Treatment Regulations, 2001.

Monitoring data for the effluent from the primary discharge point is included in Table D1 and monitoring data from monitoring points up and down stream of the treatment works is included in Table F1.

- **Details of all monitoring of the receiving water should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables F.1(i)(a) & (b) should be completed for the primary discharge point. Surface water monitoring locations upstream and downstream of the discharge point shall be screened for those substances listed in Tables F.1(i)(a) & (b). Monitoring of surface water shall be carried out at not less than two points, one upstream from the discharge location and one downstream.**

Table F.1(i)(a) and (b) are complete for the primary discharge point.

- **For discharges from secondary discharge points Tables F.1(ii)(a) & (b) should be completed. Furthermore, provide summary details and an assessment of the impacts of any existing or proposed emissions on the surface water or ground (aquifers, soils, sub-soils and rock environment), including any impact on environmental media other than those into which the emissions are to be made.**

There are no secondary discharge points. Table F1 (ii)(a) and (b) are therefore not complete.

There are no impacts on ground water or other environmental media. The impact of the primary discharge point on the River Fane is evaluated in the WAC assimilative capacity calculations below.

Castleblayney Wastewater Treatment Works

The design flow and loads, based on the 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 period of the Waste Water discharge Licence (2015).

TABLE 1 CASTLEBLAYNEY 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

Table 3 Dilution Factors at 95 Percentile River Flow

	River flow 95 Percentile (m ³ /s)	WWTP Flow (m ³ /s)	Dilution (FRiver/FWWTP)
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 (FRiver/FWWTP)
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 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:

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

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

C_{back} = background (upstream) pollutant concentration = 1.9 mg/L

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

F_{eff} = effluent flow, i.e. DWF/(3600 x 24) = 1917/(3600 x 24) = 0.02218m³/s

$$\text{BOD WAC} = [(4 \times (0.1 + 0.02218)) - (1.9 \times 0.1)] \times 86.4 = 25.81 \text{ kg BOD/day}$$

Taking a Design PE of 8,519 (PE for life time of the WWDL) the influent load to the treatment plant is calculated as 511 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 24.29 kgBOD/day which is less than that of the WAC of the stream. As shown in attachment E4 all of the effluent results from Jan-Dec 2007 have achieved $<13\text{mg/L}$. This is less than the WAC and therefore acceptable.

For an effluent BOD of $\leq 13\text{mg/L}$, a minimum level of BOD removal of 95.13% is required. A similar level of reduction in suspended solids is required. With a 95.13% reduction, an effluent **suspended solids** standard of **16.25mg/L** would be achieved. As shown in attachment E4 over 75% of the effluent results from Jan-Dec 2007 have achieved $<16.25\text{mg/L}$. This is less than the WAC and therefore acceptable.

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 1998-2000 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 = 0.03 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

$$\begin{aligned} \text{MRP WAC} &= [(0.05 \times (1.583 + 0.02218)) - (0.02 \times 1.583)] \times 86.4 \text{ [kg P/day]} \\ &= 4.20 \text{ kg MRP/day} \end{aligned}$$

Based on the above, the proposed effluent treatment standard should ensure that the MRP load to the river should be no more than 4.17 kg MRP/day.

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

$$\begin{aligned} \text{MRP (2.0 mg/L)} &= F_{eff} \text{ (m}^3\text{/day)} \times C_{eff} \text{ (mg/L)} / 1000 = 2916 \times 2 / 1000 \\ &= 3.83 \text{ kg MRP / day } (< 4.20 \text{ kg / day}) \end{aligned}$$

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 D1, 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
Effluent Nitrogen:	76.671 kg / day

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

$$WAC = [(C_{max} \times (F_{river} + F_{eff})) - (C_{back} \times F_{river})] \times 86.4$$

C_{max} = maximum permissible Ammonia concentration in river = 0.5 mg/L

C_{back} = background (upstream) pollutant concentration = 0.04 mg/L

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

F_{avg} = 1.583 = average flow in m³/sec

F_{eff} = effluent flow, i.e. DWF/(3600 x 24) = 1917/(3600 x 24) = 0.02218m³/s

86.4 = conversion factor (to kg/day)

$$NH_3 \text{ WAC} = (C_{max} - C_{back}) \times F_{avg} \times 86.4$$

$$\frac{\text{Effluent } NH_3(N)(kg/day) \times 1000}{\text{Flow m}^3/\text{day}} \text{ [mg/L]} = \frac{(76.671 \times 1000)}{136,745}$$

Increase in river ammonia nitrogen concentration: = 0.501 mg/L

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

$$NH_3 \text{ WAC} = (C_{max} - C_{back}) \times F_{avg} \times 86.4$$

$$\text{NH}_3 \text{ WAC} = (0.5 - 0.04) \times 1.583 \times 86.4 = 63.86 \text{ kg /day}$$

At 25mg/L, the maximum effluent ammonia of 47.92kg/day is less than the calculated waste assimilative capacity of 63.86 kg/day and is therefore acceptable. As can be seen in section D1, over 91% 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	25
Suspended Solids	31.15 kg/day	35
Orthophosphate	3.83 kg MRP / day	2.0
Ammonia (kg.N/day)	47.92kg/day	25

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

o Provide details of the extent and type of ground emissions at the works. For larger discharges to groundwaters, e.g., from Integrated Constructed Wetlands, large scale percolation areas, etc., a comprehensive report must be completed which should include, inter alia, topography, meteorological data, water quality, geology, hydrology, and hydrogeology. The latter must in particular present the aquifer classification and vulnerability. The Geological Survey of Ireland Groundwater Protection Scheme Dept of the Environment and Local Government, Geological Survey of Ireland, EPA (1999) methodology should be used for any such classification. This report should also identify all surface water bodies and water wells that may be at risk as a result of the ground discharge.

There are no groundwater emissions at the Works.

o Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative standards. Submit a copy of the most recent water quality management plan or catchment management plan in place for the receiving water body. Give details of any designation under any Council Directive or Regulations that apply in relation to the receiving water.

o Provide a statement as to whether or not emissions of main polluting substances (as defined in the *Dangerous Substances Regulations S.I. No. 12 of 2001*) to water are likely to impair the environment.

The level of dangerous substances both in the effluent and in the River Fane as detailed in Tables D1 and Tables F1 show a level below that in S.I. No. 12 of 2001 and therefore the emissions are not considered likely to impair the environment.

○ In circumstances where water abstraction points exist downstream of any discharge describe measures to be undertaken to ensure that discharges from the waste water works will not have a significant effect on faecal coliform, salmonella and protozoan pathogen numbers, e.g., Cryptosporidium and Giardia, in the receiving water environment.

There is a drinking water abstraction from Lough Ross at Newry Water Treatment Plant, from the River Fane at Inniskeen Water Treatment Plant approximately 8km downstream and from the River Fane at Dundalk Water Treatment Plant towards the mouth of the river.

Details of this water abstraction are included in Table F2.

○ Indicate whether or not emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have a significant effect on –

(a) a site (until the adoption, in respect of the site, of a decision by the European Commission under Article 21 of Council Directive 92/43/EEC for the purposes of the third paragraph of Article 4(2) of that Directive) –

(i) notified for the purposes of Regulation 4 of the Natural Habitats Regulations, subject to any amendments made to it by virtue of Regulation 5 of those Regulations

(ii) details of which have been transmitted to the Commission in accordance with Regulation 5(4) of the Natural Habitats Regulations, or

(iii) added by virtue of Regulation 6 of the Natural Habitats Regulations to the list transmitted to the Commission in accordance with Regulation 5(4) of those Regulations,

(b) a site adopted by the European Commission as a site of Community importance for the purposes of Article 4(2) of Council Directive 92/43/EEC¹ in accordance with the procedures laid down in Article 21 of that Directive,

(c) a special area of conservation within the meaning of the Natural Habitats Regulations, or

(d) an area classified pursuant to Article 4(1) or 4(2) of Council Directive 79/409/EEC²;

¹Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ No. L 206, 22.07.1992)

²Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (OJ No. L 103, 25.4.1979)

- **Describe, where appropriate, measures for minimising pollution over long distances or in the territory of other states.**

The impact of the discharge from the wastewater treatment plant in Castleblayney has been calculated in the Waste Assimilative Capacity calculations above. This shows that the impact of the discharge can be assimilated into the river and will not have a pollution effect over long distances.

- **This section should also contain full details of any modelling of discharges from the agglomeration. Full details of the assessment and any other relevant information on the receiving environment should be submitted as Attachment F.1.**

A modelling report is currently being drafted for Monaghan County Council. This will be submitted once complete and approved. Where abstracts have been quoted in this application, this is from the draft report.

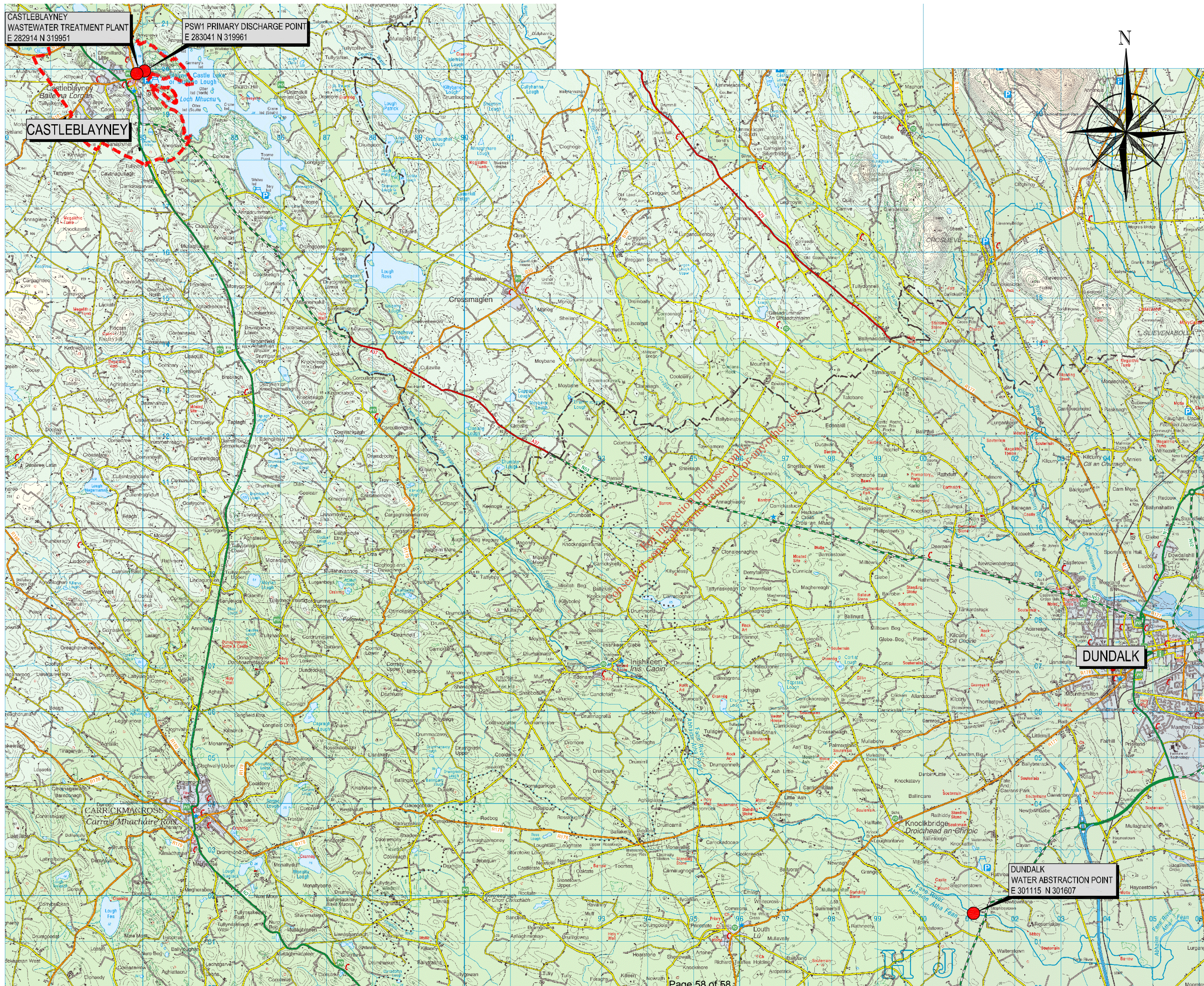
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ATTACHMENT No: F2

Tabular Data on Drinking Water Abstraction Point(s)

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NOTES

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



REV	DATE	DESCRIPTION	D	C	A

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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	D.Rimdzkus	P.McAree	F.Lane
CAD REFERENCE	SECTION	DRAWING No.	REV
F.2 -20384-DL-CY-15	F.2	15	-