UISCE EIREANN : IRISH WATER **MONAGHAN COUNTY COUNCIL**

WASTE WATER DISCHARGE LICENCE
REGISTER NUMBER: D0346
AGGLOMERATION: Glaslough
ANNUAL ENVIRONMENTAL REPORT (AER)
1st JANUARY 2013 - 31st DECEMBER 2013

County Manager: E Cummins
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Glaslough Waste Water Treatment Plant – Annual Environmental Report 2013

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Monaghan County Council Water Services Section
Annual Environmental Report 2013

1.1 Summary **report on 2013.**

1.1.1 Introduction.

This is the ***third*** Annual Environmental Report (AER) for Glaslough ICW Town Waste Water Treatment Plant.

The Environmental Protection Agency granted a Waste Water Discharge Licence (Register No. D0347) in respect of the agglomeration named to Monaghan County Council on the 9th Feb 2011.

The purpose of this Annual Environmental Report (AER) is to provide a summary of activities relevant to the discharges from 1st January 2013 to the 31st December 2013 as required by Condition 6.10. The Annual Environmental Report (AER) for Glaslough Agglomeration includes the information specified in Schedule D of the Wastewater Discharge Licence D0347

1.2 Site Information.

Glaslough is an historic village located approximately 10 km to the Northeast of Monaghan town. The village is situated within the fertile Blackwater river basin and is connected to the villages of Caledon and Middletown in Northern Ireland and Emyvale in County Monaghan. The village has developed around the renowned Castle Leslie Estate and Glaslough Lake. The population of the sewered Glaslough village is estimated at approximately 400 persons. This figure is based on Census 2011 for the Ardbannagher and Glasough small areas.

Business capacity should also be added to this figure, estimated in 2011, to be 350pe. (Castle Leslie and Hunting lodge hotels).

The domestic population growth rate and population projection over the period of the licences are based on the population change between 2006 and 2011 (Census 2011) of +12.5% increase. The duration of the licence is 6 years (2011 to 2017), therefore based on the latter; a growth rate of +9% is predicted to 2016, giving a protected population of 818 (excluding pending planning permissions).

1.3 Description of Wastewater Treatment Works

The Glaslough pilot ICW (NGR 272027E, 342135N) is part of a unique initiative by the Department of Environment Heritage and Local Government in treating liquid waste streams in shallow vegetated ponds and to towards achieving effective social, economic and environmental water management. It is a co-operative undertaking by Monaghan County Council, Castle Leslie, DoEHLG and the University of Edinburgh.

The wetland, as noted above, treats the sewage from the village of Glaslough and has a design capacity of 1750 PE. The current load is approximately 750 PE (based on Census 2011 and business capacity in 2011; an element of which is seasonal) and provides tertiary treatment. No pre-treatment is carried out. The influent is pumped directly from the pumping station located on site (272019E, 342128N) to a receiving sludge pond 1or 2- currently Sludge Pond 2 (c365m3), since q4 2011. Sludge pond 1 (c280m3) operated for the initial years Oct 2007 to Oct 2011 and is currently being left to 'dry out' to determine quantities of dry solid remaining, with no sludge having been drawn away in those 5 years.

Thereafter, the liquid flows by gravity through 5No. Sequential, vegetated ponds through 150mm connecting pipes after which the effluent discharges to the Mountain Water River at 272194E 342230N.

The Pumping Station is located adjacent to the Integrated Constructed Wetlands at National Grid Reference 272019E, 342128N. There is one emergency overflow located at the pumping station (National Grid Reference 272029E, 342194N) which is designed to discharge to Pond 2- bypassing pond 1 only. There is no combined storm water overflows (CSO) associated with the works or CSOs connected with the agglomeration network.

1.4 Description of receiving aqueous environment

The Mountain Water River is in the Neagh Bann river basin district with overall status classified as '1a' –Poor status and at risk of not meeting good status by 2015, with overall objective to restore its status by 2021. The Blackwater Water Management Unit Action Plan (WMU) states that EPA licence information suggests that Glaslough WWTP (downstream of Emyvale WWTP), is not impacting on the receiving water as there is adequate dilution in the river, for the discharge (Ref. WFD website & reports). The WMU action plan requires the Implementation of a Performance Management system, which to date is not effectively in place, although the annual service plan for Irish Water has Red, amber, green (RAG) performance indicators.

The Mountain Water River is not a designated Salmonid Water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988) nor is it identified as sensitive water in terms of the Urban Waste Water Treatment Regulations 2001. The river is not designated as an SPA, SAC or NHA.

The River is a tributary of the Blackwater Monaghan which is designated as sensitive from the confluence of the River Shambles to Newmills Bridge under
the Urban Waste Water Treatment Regulations 2001. However, the confluence of the Mountain water with the Blackwater is some kilometres downstream of this sensitive portion.
The treated ICW discharge effluent (2008-2011) has an average (± standard deviation) BOD concentration of 5.81 ± 5.28 mg/l and average suspended solids concentration of 5.31 ± 5.19 mg/l. Average concentrations of nutrients are as follows; orthophosphate 0.25 ± 0.44 mg/l (P), Total Phosphorus 0.35 ± 0.50 mg/l (P), Total Nitrogen 2.39 ± 2.37 mg/l (N) and Ammonia 1.20 ± 2.29 mg/l (NH3-N).
The nearest flow monitoring data available for the Mountain Water River is at the Bridge North of Glaslough (NGR 271979; 342193) (OPW Station 03055). The 95-percentile flow (m3/s) is given as 0.020m3/s; the average flow as 1.34 (m3/s).
A Q value of 3-4 was recorded upstream of the discharge point (Nr of Glaslough Bridge Station No. 0650) in 2004. The overall status of the river is "poor" status, 1a "at risk", with overall objective to restore status by 2021.
EPA Physiochemical water quality monitoring data at this site from 1998 and 2000 gave a median BOD level of 2.5mg /l, Oxidised Nitrogen 1.2 mg N/l and Total Ammonia level of 0.07 mg N/l.
Monaghan Co. Co. monitors the river both upstream and downstream of the discharge from the ICW Waste Water Works. The *upstream* monitoring results (2008-2011), indicate relatively good water quality in the river, with the average orthophosphate level recorded of 0.08 ± 0.08 mg/l P, average ammonia levels of 0.41 ± 0.54 mg/l NH3-N, average BOD of 3.87 ± 5.75 mg/l, average TP of 0.11 ± 0.12 mg/l, average TN of 1.95 ± 1.00 mg/l N and average suspended solids of 8.39 ± 14.15 mg/l. Dangerous substances concentrations were below detection level for 15 of the 19 parameters tested in February 2009. No levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.
Results from the *downstream* monitoring site (aSW1 (P) d) indicates generally good water quality with average orthophosphate levels of 0.08 ± 0.07 mg/l P recorded between 2008 and 2011, average ammonia 0.45 ± 0.49 mg/l NH3-N, average BOD of 3.42 ± 4.63 mg/l, average TP of 0.12 ± 0.10 mg/l, average TN of 1.87 ± 1.05 mg/l N and average suspended solids of 8.13 ± 14.06 mg/l.
Comparing *Upstream and Downstream* figures across all parameters above, it can be seen that negligible impact is being made upon the receiving water.
The assimilative capacity calculations indicate that there is significant dilution capacity within the receiving water, even at low flows, to assimilate discharges from the Waste Water Works. The results of the assimilative capacity are consistent with the physiochemical water quality monitoring results (EPA and Monaghan County Council Data) and indicate that the discharges from the works are not having a significant detrimental impact on the receiving environment.

The Waste Water Treatment Plant (WWTP) which provides treatment for a design load of 1750 population equivalent comprises aeration by natural biological means; by settlement and clarification and tertiary treatment through heavy vegetative planting to reduce phosphate levels. The plant is designed to produce a fully nitrified effluent of 5:5mg/l BOD: Suspended Solids. Sludge dewatering has not occurred in the years of operation 2007-2012- all sludge to date is contained in sludge pond1&2 (mainly No. 1). Sludge pond 2 is now being used since q4 2011, for the waste water sludge entering ICW. Sludge pond 1 should be allowed to dry naturally for a further 2-5 years.

1.1 Discharge Points

Discharge Point Ref.	Discharge	Easting	Northing	Description
SW1	Primary	272194	342230	To Mountain water river via 150mm UPVC pipe
SW2	overflow	272029E,	342194N	Overflow from

				pump stn to Pond No.2

1.5 Effluent Outfall (Primary Discharge) (Ref. SW1)

The existing outfall (150mm diameter UPVC pipe) is discharging the treated effluent into the Mountain water River adjacent to the treatment works location.

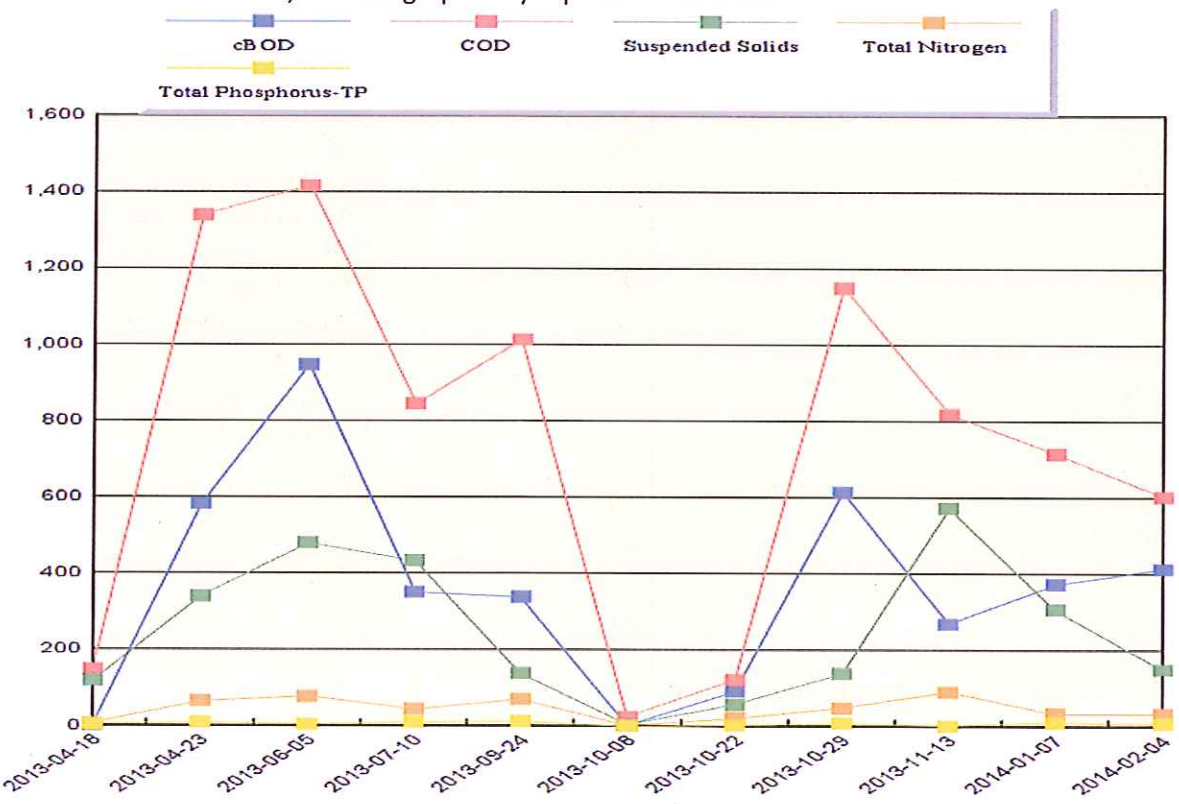
1.6 Storm Tanks (Secondary Discharge) (Ref. SW2)

No storm tank as such however there is considerable redundancy in terms of storage at present throughout the system with average retention time of 53days. Should the pumping station at inlet be inundated the overflow activates into pond No. 2.

Section 2. Monitoring Reports Summary

2.1 Summary report on monthly influent monitoring

Monaghan County Council's summary on influent monitoring for Glaslough WWTP is tabulated in Tables 1.1 and Table 2.2, but also graphically represented below:



Above: Influent Monitoring results 2013 (rouge result probable 8th Oct 2013)

APPENDIX I details, Table 2: The monitoring results for Influent samples taken in 2013 at ISCO auto composite refrigerated samplers.

Table 1.1

Influent monitoring summary table

	BOD mg/l	COD mg/l	SS mg/l	Total P mg/l P	Total N mg/l N	Volumetric Loading m3/day	Loading PE/day
Number of samples	10	10	10	10	10	n/a	n/a

Maximum result	947	1416	573	11.4	90	221	
Annual Mean	445	759	259	6.5	46	74	549

As required under condition 4.15 of the licence, monthly monitoring of the influent stream to the WWTP for BOD, COD, Suspended Solids, Total Nitrogen and Total Phosphorus measuring **mass loadings and removal efficiencies** has been calculated and tabulated in table 3.1

2.1.1 Flow rates

Table below details flow data relating to inflow to plant in 2013; flow is measured and recorded electronically on daily basis and the below data is segments of this data.

date	***Inflow rate m3/day***	***Outflow rate m3/day***
30/1/13	*221*	*226*
16/4/13	*97*	*217*
23/4/13	*64*	*224*
30/4/13	*66*	*124*
5/6/13	*77*	*22*
25/6/13	*67*	*Zero discharge during dry weather period*
10/7/13	*74*	*Zero discharge during dry weather period.*
25/9/13	*68*	*Zero discharge during dry weather period.*
8/10/13	*50*	*38*
22/10/13	*45*	*93*
29/10/13	*61*	*114*
13/11/13	*37*	*79*
3/12/13	*41*	*23*

Table 2.1 summary of flows into and out of ICW

AVERAGE,INFLOW=74M3/DAY:AVERAGE,OUTFLOW=89M3/DAY

2.2 DISCHARGES FROM THE AGGLOMERATION

This is summarised in Table 2.2 below.

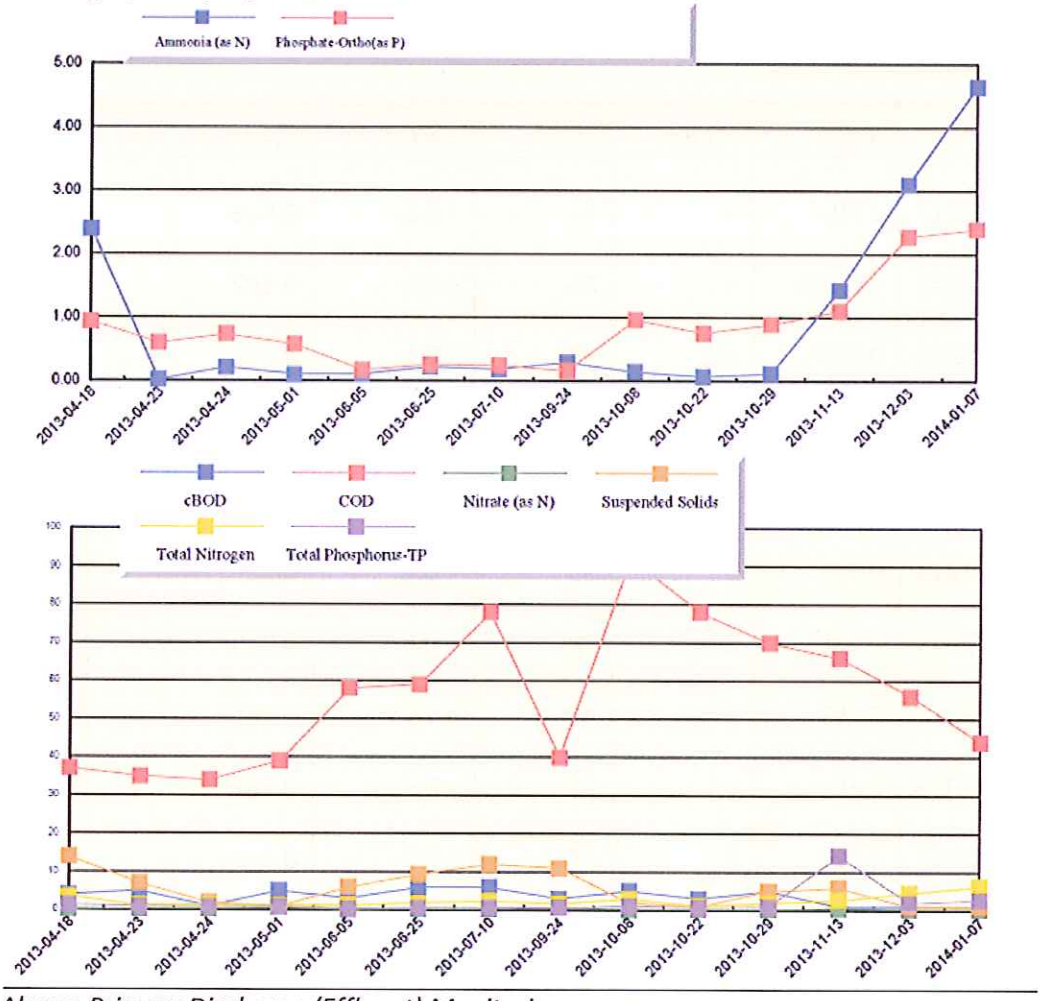
12No samples are required under schedule B of the licence but quarterly for Nitrate, Ammonia, Total P, and MRP-13No. were actually collected. pH monitoring is required daily for the effluent; this is recorded daily on site by the caretaker along with flow figures and visual inspection details. All pH values recorded for 2013 ranged between 6 and 9, the lowest figure recorded 6.7 and the highest figure 7.9.

TABLE 2.2 EFFLUENT MONITORING SUMMARY TABLE (ELV exceedance in red)

			Ammonia (N)	BOD, 5 days with inhibition (CBOD)	Chemical Oxygen Demand	Nitrates(N)	Orthophosphate (P)	pH	Suspended Solids
ELV			**1**	**10**	**50**	**_**	**0.5**	**6-9**	**15**
Sample Template	Sample Method	Sample Date	mg/l	mg/l	mg/l	mg/l	mg/l	Ph	mg/l
Effluent	24 hr composite	18/04/2013	2.393	4	37	< 0.6	0.939	7.1	14
Effluent	24 hr composite	23/04/2013	< 0.035	5	35	< 0.6	0.602	7.5	7
Effluent	24 hr composite	24/04/2013	0.213	< 1	34	< 0.6	0.741	7.3	< 5
Effluent	24 hr composite	01/05/2013	0.101	5	39	< 0.6	0.581	6.8	< 5
Effluent	24 hr composite	05/06/2013	0.11	3	58	< 0.6	0.174	7	6
Effluent	24 hr composite	25/06/2013	0.226	6	59	< 0.6	0.26	7.2	9
Effluent	24 hr composite	10/07/2013	0.188	6	78	< 0.6	0.245	7.4	12
Effluent	24 hr composite	24/09/2013	0.291	3	40	0.79	0.168	7.6	11
Effluent	24 hr composite	08/10/2013	0.15	5	92	< 0.6	0.967	7.8	< 5
Effluent	24 hr composite	22/10/2013	0.071	3	78	< 0.6	0.757	7.9	< 5
Effluent	24 hr composite	29/10/2013	0.124	5	70	< 0.6	0.899	6.7	5
Effluent	24 hr composite	13/11/2013	1.434	< 1	66	< 0.6	1.108	7.1	6
Effluent	24 hr composite	03/12/2013	3.103	< 1	56	< 0.6	2.283	7.3	< 5
13No									
	Glaslough	**AVERAGES=**	**0.7**	**4.5**	**57**		**0.75**		**8.75**
Number of 2013 samples results above WWDL ELV			**3**		**8**		**8**		
Overall compliance WITH Cond.2 interp.			**(8of10) pass**	**pass**	**pass**	**pass**	**fail**	**pass**	**pass**

The discharge from the WWTP had some exceedances in 2013, allowable exceedance (<150%) for Suspended Solids, but 3No exceedances for Ammonia above the allowable limit at 1mg/l, or 20% over under condition 2 interpretation, which was reported to the EPA. There was no obvious cause for this Ammonia exceedance at the Waste Water Treatment Plant (WWTP) and the trend prior to and after this exceedance for Ammonia is under the Emission Limit Value (ELV) for this parameter, 8No. out of 10No. consecutive passing. The downstream result on the same date is under the 'mean'

Surface Water Environmental Quality Standard (EQS) for ammonia in the receiving water, thus indicating that there impact from this exceedance was minimal on the receiving water.
The MRP had a series of exceedances above the ELV of 0.5mg/l (which was set extremely low by EPA), but most are marginally above (and over the 0.6mg/l condition 2 interpretation), however the average is 0.75mg/l.
This is graphically represented below:



Above: Primary Discharge (Effluent) Monitoring.

See Table 2.2 for the monitoring results for Primary Discharge effluent samples taken in 2013 at ISCO auto composite refrigerated samplers

2.2.1 BOD

The discharge, in terms of BOD concentration, is not impacting on the water quality of the river. The mean background US is high; the resultant only marginally higher in river.
The resultant concentration is above the EQS of 2.6mg/l for 95%ile flow conditions at 1.61mg/l (Surface water regs. 2009).

2.2.2 AMMONIA

The discharge, in terms of Total Ammonia concentration, is not impacting on the water quality of the river and the resultant concentration is under the EQS of <0.14mg/l for 95%ile flow conditions at 0.073mg/l (Surface water regs. 2009).

2.3 Ambient monitoring summary- Upstream & Downstream.

A summary presentation of the ambient monitoring results for the upstream and downstream receiving waters are tabulated in tables 3 and 4 attached in appendix 1. There were 8-9No samples analyses carried out in 2013 for the ambient monitoring. The monitoring was conducted at the following locations:

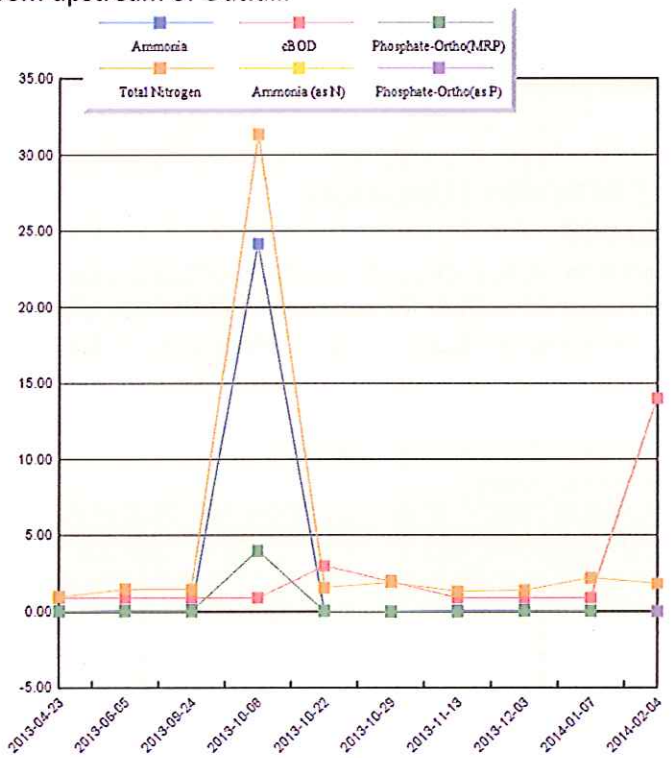
ambient monitoring point from WWDL	IG co-ords	FCT Station Code	Discharge impacting on water quality?	Sample Template
aSW1(P)u	272001E, 342192N	RS03M010670	No	Upstream
aSW1(P)d	272357E, 342273N	RS03M010680	No	Downstream

The average results in the river are under the surface water regulations Environmental Quality Standards (EQS) for Ammonia and Ortho Phosphorus. The BOD results are higher than the 'mean' status surface water figure of 1.5mg/l both upstream and downstream of the discharge. As stated in section 1.3 of this report the Blackwater River is neither sensitive water nor designated Salmonid water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988, nor designated as an SPA, SAC or NHA. It is classified as 'good status' with overall objective to 'protect' it. The impact of the discharge from the agglomeration on the Blackwater River is assessed with regard to the Environmental Quality Standards (EQS), (Surface Water Regulations 2009) for BOD and total Ammonia.

Monaghan County Council's summary on influent monitoring for Glaslough ICW is tabulated in table 2 attached in appendix I. As required under *condition 4.15* of the licence, *monthly monitoring of the influent stream to the WWTP for BOD, COD, Suspended Solids, Total Nitrogen and Total Phosphorus measuring mass loadings and removal efficiencies has been calculated and tabulated in the aforementioned table*. The removal efficiencies for BOD, COD and SS within the treatment plant are adequate achieving good reductions for the parameters listed in Table 3.1.

2.3.1 Ambient Monitoring – Receiving Water Upstream- see graph below

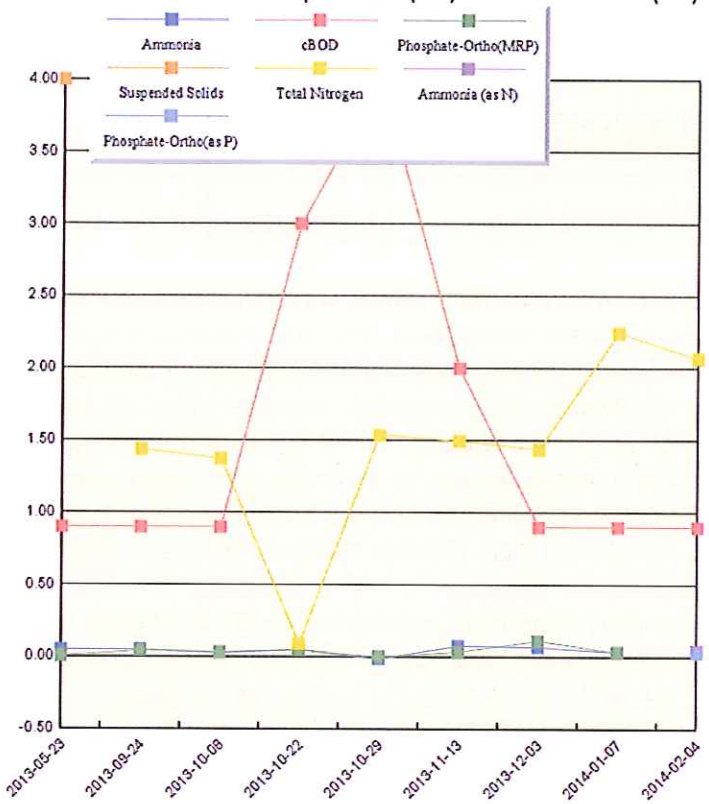
APPENDIX I, Table 3, details the monitoring results for Receiving Water Upstream grab samples taken in 2013, 50m upstream of Outfall.



2.3.2 Ambient Monitoring – Receiving Water Downstream- see graph below

APPENDIX I, Table 4 details the monitoring results for Receiving Water Downstream samples taken in 2013, 75m downstream of outfall.

Bacteria in the Influent & Effluent for Upstream (US) & Downstream (DS) results also listed.



2.4 Data collection and reporting requirements under the Urban Waste Water Treatment Directive

It is confirmed that the annual urban waste water information for agglomerations and treatment plants with a population equivalent greater than 500 is submitted in electronic format on an annual basis.

SECTION 3 OPERATIONAL REPORTS SUMMARY

3.1 TREATMENT EFFICIENCES REPORT

The WWTP is generally considered to be operating efficiently as effluent results are compliant for 2013 with the exception of 3No. reported incident for ammonia & MRP being slightly elevated above the 0.5mg/l ELV. The WWTP is achieving adequate removal efficiencies- Table 3.1- for BOD, COD, TSS, TN and TP.

Table 3.1

Treatment Efficiency Report Summary Table

	cBOD mg/l (kg/day)	COD mg/l (kg/day)	SS mg/l (kg/day)	TP mg/l (kg/day)	TN mg/l (kg/day)	Comment
Influent mass loading (kg/day)	445	759	259	6.5	46	comparing concentration coming in, mg/l

Effluent mass emission (kg/day)	4.5	57	8.75	0.8	2.1	comparing concentration going out mg/l
% Efficiency (% reduction of influent load)	**98.99**	**92.49**	**96.62**	**87.69**	**95.43**	

3.2 TREATMENT CAPACITY REPORT

3.2.1 Treatment Capacity

Under the terms of Condition 1.7.1 of the licence, the licensee shall on an annual basis undertake an assessment of the remaining organic and hydraulic treatment capacities within the waste water works (design capacity of plant, less flow-load calculation for representative period). Please include this report as part of the AER.

This assessment is tabulated in Table 3.2, as stated in the table there is ADEQUATE hydraulic remaining capacity and organic capacity for a number of years, indeed higher than the previous AER 2012, owing to relatively dry year with low rainfall.

Table 3.2

Remaining Hydraulic & Organic treatment capacities summary table:	m3/day
Hydraulic Capacity - Design (M^3/day)	394
Hydraulic Capacity - Current loading (M^3/day)	74
Hydraulic Capacity - Remaining (M^3/day)	**320**
Organic Capacity - Design (PE)	1750
Organic Capacity - Current loading (PE)	549
Organic Capacity - Remaining (PE)	**1201**
Will the capacity be exceeded in the next 3 years?	no

3.7 Abstraction Points

There is no drinking water abstraction point downstream of the discharge point. Discharge does not impact significantly on the water environment.

The impact of the discharge from the wastewater treatment plant in Glaslough ICW has been calculated in the Assimilative Capacity calculations in main application previously. These results show that the impact of the discharge can be assimilated into the river and will not have a pollution effect over long distances and is therefore of **minimal risk** to drinking water contamination:

4.1.1 Complaints Summary

There were no complaints of an environmental nature related to the discharge(s) to waters from the waste water works.

4.1.2 Reported Incidents Summary

There were 2No recorded & reported incidents:

Date & Time	Incident Description	Authorities Contacted	Corrective Action	Closed (Y/N)

30/04/2013 14:57	Breach of ELV Exceedance of ELVs in effluent on 18/04/2013 for Ortho P = 0.939mg/l (limit 0.5mg/l) and Ammonia = 2.393mg/l (limit 1mg/l)	EPA	NONE No impact on receiving stream as evinced by the US and DS receiving river	YES
05/09/2013 16:10+ 3rd Dec2013.	Breach of ELV COD=78mg/l and December sample results exceeding ELVs as follows: Effluent sample dated 3/12/2013: Ammonia = 3.1mg/l, Ortho P = 2.283mg/l & COD = 56mg/l.	EPA	NONE Outflow pipe level raised by 150mm, thus increasing depths of ponds, thus temperature in ponds should remain more constant during cold weather periods, thus enabling biological breakdown process to be sustained during periods of low temperatures.	NO

Table 2.5 Incidents in 2013

4.1.3 Notices of Non-Compliance

There were no Notices of Non-Compliance issued by the Agency in 2013.

SECTION 5: LICENCE SPECIFIC REPORTS:

Condition 7.2.1 Environmental Liabilities of Licence states:

*"The licensee shall as part of the **AER** provide an annual statement as to the measures taken or adopted in relation to the prevention of environmental damage, and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with discharges or overflows from the waste water works."*

Submission

An Environmental Liabilities Risk Assessment (ELRA) is NO LONGER REQUIRED IN 2013 BY EPA

5.1 Licence Specific Reports

The following reports are required by the Licence: -

5.1.1 Condition 4.12 of Licence relates to Storm water overflows.

4.12.1—Identification & Assessment of Storm water overflows

*"The licensee shall, prior to the date for submission of the **second AER** (required under Condition 6.11), carry out an investigation for the identification and assessment of storm water overflows. A report on the storm water overflows shall be submitted to the Agency as part of the second AER. The assessment shall include a determination of 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".*

Submission

There are no CSOs to report on the network.

5.1.2 4.12.2—Ongoing Assessment of Storm Water Overflows

*"The licensee shall carry out an assessment of storm water overflows at least once every three years thereafter and report to the Agency on each occasion as part of the **AER**. The assessment shall include a determination of 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. The licensee shall maintain a written record of all assessments and remedial measures arising from the assessment".*

Submission
There are no CSOs to report.

5.1.3 4.15—Monthly monitoring

"The licensee shall carry out monthly monitoring of the influent stream to the WWTP for cBOD COD SS Total N and Total P in order to measure the mass loadings and removal efficiencies within the WWTW
See table 3.1 and appendix 1 for calculations regarding these parameters.

5.2 Condition 4.13 of Licence relates to PRTR Report

*"The licensee shall prepare a PRTR report for the primary and secondary discharges. The substances to be included in the PRTR shall be as agreed by the Agency each year by reference to EC Regulation No. 166/2006 concerning the establishment of the European Pollutant and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC. The PRTR shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted electronically in specified format and as part of the **AER**"*

Submission
The PRTR is not required for the agglomeration as the p.e. is between 1,001 and 2,000-A PRTR report NO LONGER REQUIRED IN 2013 BY EPA

5.3 Condition 5.1 relates to Infrastructural Improvements

*"The licensee shall, as a part of the **second AER** (required under Condition 6.11), prepare and submit to the Agency a programme of infrastructural improvements to maximise the effectiveness and efficiency of the waste water works in order to:*
a) achieve improvements in the quality of all discharges from the works;
b) meet the emission limit values specified in Schedule A; Discharges, of this licence;
c) give effect to Regulation 2 of the Waste Water Discharge (Authorisation) Regulations 2007 (S.I. No. 684 of 2007);
d) reduce total phosphorous loadings in the discharge to the maximum practicable extent;
e) reduce Total Phosphorus loadings in the discharge to the maximum practicable extent;
f) meet the obligations of Condition 1.7".

Submission
No Major infrastructural improvements pending, but some optimisation improvements specified.
There are no other specified improvement works under schedule C, C2 or C3 of the discharge licence. However, the following suggestions would optimise process:

Table 5.1: Specified Improvement Programme summary report:

Specified Improvement Programmes	Licence Schedule (A or C)	Licence completion date	Date expired	Status of Works	% const. work completed	Licensee timeframe for completing the work	Comments
NONE specified							

5.3.1 Report on progress made and proposals being developed to meet the improvement programme requirements.

Under the terms of Condition 5 of the licence, the licensee shall submit to the Agency a programme of infrastructural improvements to maximize the effectiveness and efficiency of the waste water works.
As noted in Table 5.2 below, these work items have to be completed, currently scheduled for 2014/5.

Table 5.2: Improvement Summary Table

Improvement Identifier	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date
To improve MRP and Ammonia results	implement a return of activated wastewater to the head of the works, from cell pond 3 to pumping station at head of works ACTION: Open existing valve between cell 3 and PS to return flows	WWTP assessment (Condition 5.3)	0	Start aug. 14 Run to march 2015
Flooding from storm water around pump station and compound area	Flood control measure along river bank the storm water outflow pipe into river, which collects surface water from around the control building and pumping station, needs to have rubber check valve fitted	WWTP assessment (Condition 5.3)	0%	Q3 2014 This will prevent high level river water from back flowing into lower lying control building area
High inflows into the WWTP during storm conditions/periods of heavy rainfall	CCTV of network and establish where excess storm water ingression to collection network	WWTP assessment (Condition 5.3)	0%	IW funding dependant

5.4 Condition 6.8 relates to Public Awareness and Communications Programme

"The licensee shall establish and maintain a Public Awareness and Communications Programme...."

Submission
MCC website has been updated to include information about Glaslough ICW.

5.5 Condition 6.11 relates to Submission of AER

"The licensee shall submit to the Agency, by the 28th February of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in Schedule D: Annual Environmental Report, of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency".

Submission
This is the AER report required to be submitted by 28th Feb2014.

5.6 Condition 7.2.1 relates to Statement on the prevention of environmental damage.

*"The licensee shall as part of the **AER** provide an annual statement as to the measures taken or adopted in relation to the prevention of environmental damage, and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with discharges or overflows from the waste water works."*

Submission
This is discussed in Section 6.1 above.

SECTION 6

Section 6. Certification and Sign Off

Annual Statement of measures

Annual Statement of Measures (See Specified Improvement Programme summary report above)

Risk /Description of issue	Risk Score	Mitigation Measure to be taken	Outcome	Action	Date for Completion	Owner/ Contact Person
Exceedence of ELV under MRP and ammonia	5x1=5	Return part treated waste water to head of works	TBC	As noted in Table 5.2	Aug 2014	C McCrossan

I confirm the above are the measures which will be taken in the local Authority in 2014/15.

Signed: Con M° Cross **Job Title:** A/SE

Name: Con M° CROSSAN **Date:** 27/2/2014

Certification and Sign Off

Does the AER include and executive summary	Yes
Does the AER include and assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements/EQS)	Yes
Is there a need to advise the EPA for consideration of a technical amendment/review of the licence?	Yes
List reason e.g. additional SWO identified	ELV for both MRP and COD are too low
Is there a need to request/advise the EPA of any modifications to the existing WWDL? (ref. cond. 1.7 & cond. 4)	yes
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements	The Borehole IG cords need correction

Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	N/A
List outstanding reports	N/A

Signed by: Con M° Rose

Date: 27/2/2014

Position in Organisation: ASE

SECTION 7:
Appendix I:
Influent monitoring results.
Upstream monitoring results.
Downstream monitoring results.

TABLE 2 INFLUENT MONITORING SUMMARY TABLE

			BOD, 5 days with inhibition (CBOD)	Chemical Oxygen Demand	Suspended Solids	Total Nitrogen (N)	Total Phosphorus (P)
Influent	24 hr composite	18/04/2013	< 93	148	118	5.4	2.94
Influent	24 hr composite	23/04/2013	583	1340	340	65.6	9.12
Influent	24 hr composite	05/06/2013	947	1416	480	77.1	4.19
Influent	24 hr composite	10/07/2013	351	845	433	44	10.2
Influent	24 hr composite	24/09/2013	338	1013	138	70.3	11.4
Influent	24 hr composite	08/10/2013	< 11	24	5	1.9	< 0.1
Influent	24 hr composite	22/10/2013	91	121	56	20.5	2.1
Influent	24 hr composite	29/10/2013	614	1149	138	47.9	7.7
Influent	24 hr composite	13/11/2013	269	818	573	90.4	0.7
		average=	**445**	**759**	**259**	**46**	**6.5**
		max=	947	1416	573	90	11.4

TABLE 3 UPSTREAM MONITORING SUMMARY TABLE

DATE	Ammonia (N)	BOD, 5 days with inhibition (CBOD)	Orthophosphate (P)	Total Nitrogen (kjeldahl)
	mg/l	mg/l	mg/l	mg/l
23/04/2013	0.039	< 1	0.011	< 1
01/05/2013	0.094	2	0.014	
05/06/2013	0.078	< 1	0.026	1.5
24/09/2013	0.093	< 1	0.024	1.4
08/10/2013	24.174		4	31.4
22/10/2013	0.04	3	0.04	1.6
29/10/2013	< 0.007	2	< 0.009	1.9
13/11/2013	0.049	< 1	< 0.009	1.3
03/12/2013	0.091	< 1	0.032	1.4

TABLE 4 DOWNSTREAM MONITORING SUMMARY TABLE

DATE	Ammonia (N)	BOD, 5 days with inhibition (CBOD)	Orthophosphate (P)	Total Nitrogen (kjeldahl)
	mg/l	mg/l	mg/l	mg/l
18/04/2013	0.141	2	0.042	
01/05/2013	0.081	2	< 0.009	
23/05/2013	0.049	< 1	< 0.009	
24/09/2013	0.051	< 1	0.044	1.4
08/10/2013	0.028	< 1	0.033	1.4
22/10/2013	0.05	3	0.049	< 1
29/10/2013	< 0.007	4	< 0.009	1.5
13/11/2013	0.076	2	0.032	1.5
03/12/2013	0.072	< 1	0.112	1.4

TABLE 6 BOREHOLE 1-4 MONITORING SUMMARY TABLE

			Ammonia (N)	BOD, 5 days with inhibition (CBOD)	Chemical Oxygen Demand	Nitrates(N)	Orthophosphate (P)	pH	Suspended Solids	Total Nitrogen (N)	Total Phosphorus (P)
ELV			1	10	50	_	0.5	6-9	15	_	_
Sample Template	Sample Method	Sample Date	mg/l	mg/l	mg/l	mg/l	mg/l	Ph	mg/l	mg/l	mg/l
BH1		03/12/2013		1	21	0.24	0.029		15	1.7	0.07
BH2		03/12/2013		1	13	0.12	0.026		20	1	0.1
BH3		03/12/2013		1	12	0.28	0.027		6	1	0.05
BH4		03/12/2013		1	9	0.12	0.014		5	1	0.01
BH1		20/12/2013		1	21	0.24	0.029		15	1.7	0.07
BH2		20/12/2013		1	13	0.12	0.026		20	1	0.1
BH3		20/12/2013		1	12	0.28	0.027		6	1	0.05
BH4		20/12/2013		1	9	0.12	0.014		5	1	0.01