



Comhairle Contae Mhuineacháin Monaghan County Council

Acmhainní Daonna
Human Resources
047 30586

Airgeadas
Finance
047 30589

Na Bóithre
Roads
047 30597

Clár na dToghthóirí
Register of Electors
047 30547

Comhshaol
Environment
047 30593

Deontais Ardoideachais
Higher Education Grants
047 30550

Na hEalaíona
Arts
047 71114

Iasachtaí /Deontais Tithíochta
Housing Loans/Grants
047 30527

Leabharlann an Chontae
County Library
047 74700

Mótarcháin
Motor Tax
047 81175

Músaem an Chontae
County Museum
047 82928

Pleanáil
Planning
047 30532

Pobal & Fiontar
Community & Enterprise
047 73719

Rialú Dóiteáin/Foirgnimh
Fire/Building Control
047 30521

Seirbhís Uisce
Water Services
047 30504

Administration, Environmental Licensing Programme,
Office of Climate, Licence and Resource Use,
Environmental Protection Agency,
Headquarters,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford.

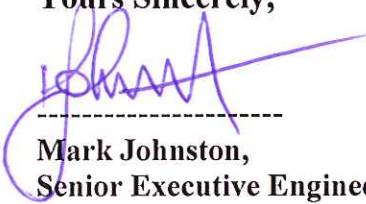
22nd February 2013

Re: Annual Environmental Return (AER) 2012 for the agglomeration
Castleblayney D0205.

Dear Sir/Madam,

I refer to the above licensed agglomeration in County Monaghan.
Enclosed is the Annual Environmental Return paper copy as required for 2012
for the Castleblayney agglomeration.

Yours Sincerely,



Mark Johnston,
Senior Executive Engineer,
Water Services Section,
Monaghan County Council.
047 30513

Fálltíonn an tÚdarás Áitiúil roimh chomhfhreagras i nGaeilge.

Comhairle Contae Mhuineacháin, Oifigí an Chontae, An Gleann, Muineachán, Éire.

Monaghan County Council, Council Offices, The Glen, Monaghan, Ireland.

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MONAGHAN COUNTY COUNCIL



WASTE WATER DISCHARGE LICENCE REGISTER NUMBER: D0205-01 AGGLOMERATION: Castleblayney Town ANNUAL ENVIRONMENTAL REPORT 1st JANUARY 2012 - 31st DECEMBER 2012

A/County Manager: D Fallon
Director of Services: D Fallon
Senior Engineer: M Murray

Castleblayney Waste Water Treatment Plant – Annual Environmental Report 2012

Document Amendment Record

Client: Monaghan County Council
Plant: Castleblayney Waste Water Treatment Plant
Title: Annual Environmental Report 2012

Ref No. : D0205

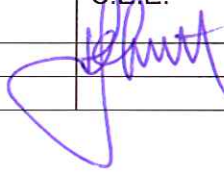
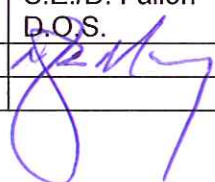
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| February 2013 | A Document for Submission: | S. Mallon A.E. | M. Johnston S.E.E. | M. Murray S.E./D. Fallon D.O.S. |
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Section 1. Introduction & background to 2012 AER

1.1 Introduction.

This is the second Annual Environmental Report (AER) for Castleblayney Town WasteWater Treatment Plant.

The Environmental Protection Agency granted a Waste Water Discharge Licence (Register No. D0205) in respect of the agglomeration named, to Monaghan County Council on the 2nd February 2011.

The purpose of this Annual Environmental Report (AER) is to provide a summary of activities relevant to the discharges from 1st January 2012 to the 31st December 2012 as required by Condition 6.8. The Annual Environmental Report (AER) for Castleblayney Agglomeration includes the information specified in Schedule D of the Wastewater Discharge Licence D0205.

The AER content and has been prepared in accordance with the Environmental Protection Agency (EPA) publications: -

“Guidance on the Preparation & Submission of the Annual Environmental Report (AER) for Waste Water Discharge Licences ”

And

‘A Step-by-Step Guide to reporting by EPA licensed facilities of AER/PRTR Emissions Data and the Annual Environmental Report’.

1.2 Description of Wastewater Treatment Works

Castleblayney town is the third largest town in County Monaghan and is located approximately 23km southeast of Monaghan town. The Waste Water treatment plant (WWTP) is located at a site adjacent to Muckno Street in the town. Castleblayney Wastewater treatment works was built in 1983 and operates an extended aeration plant. The Waste Water Works comprises of a gravity collection system with pumping stations due to the topography of the catchment area and a Waste Water Treatment Works with a design capacity of 12,960 P.E. The current load is approximately 11,133 P.E. (based on current flow and BOD loading).

The plant provides secondary treatment with facilities on site for nutrient removal (phosphorus reduction) for the effluent. Currently, dosing is not activated at the WWTP as the Phosphorus levels are below required emission limit values (ELV's) for the treated effluent. Inflow from the network is pumped up to the inlet works at the treatment plant from the Muckno Street pumping station. The Waste Water Treatment Plant provides treatment for a design load of 12,960 population equivalent (P.E) and comprises of aeration by mechanical aerators, followed by secondary settlement/clarification and a return activated sludge (RAS) system. Currently, there are two return sludge pumps in two separate adjacent sumps for returning activated sludge from the settlement tanks to the aeration tanks at the WWTP. Sludge is also diverted

from these sludge sumps by manual control of a valve by the caretaker at intervals, to a separate holding tank linked to the belt press for pressing sludge. At present, the current process for allowing sludge to go to the belt press from the RAS pump sumps, involves the RAS pumps being turned off alternately for a period, to allow the sludge to settle/thicken enough in the sump to be pressed by the double sludge belt press on site. A valve is then manually turned on site to divert the thickened sludge from the pump sump to the sludge holding tank for suction to the belt press. This process is usually carried out at night during periods of low flows into the plant, each pump can be controlled independently of one another thus allowing half of the treatment process to continue while sludge is allowed to thicken and be diverted to the belt press from the other sump. Pressed sludge is stored in trailers on site for transport by licensed haulier to the end receiver for land spreading.

1.3 Brief summary of monitoring results

For the year 2012, the treated effluent had an average BOD concentration of 7.08mg/l and average suspended solids concentration of 6.92mg/l. Average concentrations of nutrients are as follows; Total Phosphorus 0.62mg/l (P), ammonia 10.36mg/l and Total Nitrogen 14.00mg/l (N), (refer table 2.1, appendix 1). There were no exceedances of ELV's during 2012 for the WWTP and therefore no reportable incidents relating to ELV's. One other reportable incident due to a sludge spillage in the grounds of the WWTP that occurred in 2012 is detailed further in section 3.2 of this report.

The outfall from the Castleblayney Waste Water Plant discharges to the Lough Muckno via a small stream at National Grid Reference 283041E 319961N in the Town land of Drumillard Little, Castleblayney, Co Monaghan. The associated Waste Water Treatment Plant is located at 282914E 319951N also in the town land Drumillard Little.

Lough Muckno is identified as sensitive water in terms of the Urban Waste Water Treatment Regulations 2001. It is not designated Salmonid water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988) nor designated as an SPA, SAC or NHA.

Lough Muckno is in the Neagh Bann river basin district with overall status classified as 'Bad' and at risk of not meeting good status by 2015, with overall objective to restore its status by 2021. The 'point risk source' and potential for impact from the Castleblayney WWTP discharge on the lake is categorised as '2b – not at risk' and the combined storm overflows (CSOs) categorised as '2b – not at risk', however the overall objectives relating to this water body is to upgrade WWTP discharges by 2021 (ref: WFD Ireland maps/website & reports.) The EPA identifies Lough Muckno as being 'highly eutrophic', due to nutrient enrichment. With regards to nutrients discharged by Castleblayney WWTP, the discharges for Total Phosphorus average at 0.62mg/l and do not exceed the ELV specified in the discharge licence of 2mg/l in 2012, average total Nitrogen in the effluent is 14.00mg/l, however, ammonia levels are accepted as being high for the effluent with average for 2012 at 10.36mg/l, there is no ELV specified for ammonia currently in the discharge licence,

however, new lower ELV's are specified from 1st January 2016 for three parameters, BOD of 10mg/l, Total phosphorus of 0.3mg/l and Ammonia of 0.5mg/l. These new lower limits from 1st January 2016 are specified pending completion of specified improvement works (Schedule C of the licence) for the primary discharge to be completed by 31st December 2015 at the WWTP. These specified improvement works that were planned in 2008 in the initial discharge licence application for major upgrading and expansion of Castleblayney WWTP have been refused by An Bord Pleanala since then, section 1.4 of this report outlines further details in relation to these works.

Monaghan County Council's upstream monitoring results for 2012 (refer table 2.3, appendix 1) concur with the 'bad' status quality water in the lake with average BOD levels at 3.92mg/l and average ammonia levels at 0.166mg/l, however, the average MRP levels are 0.021mg/l below the surface water regulations 2009 'high' status level. The downstream monitoring results (refer table 2.4, appendix 1) detail similar results with average BOD levels at 2.85mg/l, average MRP levels at 0.031mg/l and average ammonia levels at 0.344mg/l.

1.4 Specified Improvement works

Under Schedule C.1 of the licence, '*Specified Improvement Programme*', waste water treatment plant and ancillary works are specified with completion date specified of 31st December 2015. In the initial discharge licence application in 2008, a large expansion of the Castleblayney WWTP was outlined to upgrade the design of the plant to 28,000 P.E. including major infrastructural works. However, since then, An Bord Pleanala have declared an upper limit of this expansion to the WWTP of 14,000 P.E. and only approved Stage 1 of the proposed works outlined as follows:

- Inlet pumping station
- 1 no. storm tank, 1,314m³ in volume
- Tertiary treatment units
- Picket fence thickener and
- New sludge dewatering building

An Bord Pleanala decided that Stage 2 of the proposed development is to be omitted entirely, Stage 2 involved upgrade of the WWTP capacity to 28,000 P.E., with land acquisition, additional secondary treatment, additional storm tank, inlet works, additional tertiary treatment units and a three stage odour control unit and building.

Stage 1 proposed upgrading works for Castleblayney WWTP will depend on DoECLG approval and funding, it is on the Water Services Investment Programme (WSIP) 2010 -2013 at an estimated cost of €3,927,000, however, it is currently at planning stage and is unlikely to be approved before the end of the current WSIP –December 2013.

Under schedule C.3 of the licence, upgrading of the Storm Water Overflows to comply with the criteria outlined in the DOEHLG '*Procedures and Criteria in*

relation to Storm Water Overflows, 1995' with completion date of 31st December 2015 specified. The CSO's on the Castleblayney sewer network were constructed prior to the publication of this document, a survey of the Storm Water Overflows on the Castleblayney sewerage network was carried out by Monaghan County Council in 2011/2012, two CSO's on the network were decommissioned in 2011 and some upgrading/improvement works have been identified for some of the remaining SWO's, including raising weir walls and installation of net bags to trap solids on the outflows from them. These improvement works will be completed in 2013. A storm water overflow identified from the inlet works at the WWTP was decommissioned in 2012, leaving the remaining SWO from the storm tank at the plant. A detailed storm water overflow report is included in section 4.2 of this report.

Section 2. Monitoring Reports Summary

2.1 Summary report on monthly influent monitoring

Monaghan County Council's summary on influent monitoring for Castleblayney WWTP is tabulated in table 1 attached in appendix 1. 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 averages over 87% for the parameters. The removal efficiencies for Total Nitrogen and Total Phosphorus are generally adequate achieving up to 96% removal within the treatment plant.

2.2 Discharges from the agglomeration

A summary presentation of monitoring results for the primary discharge (National Grid Reference 283041E 319961N) is tabulated in table 2.1 attached in appendix 1. The ELV's where applicable are included in the heading columns in accordance with schedule A.1 of the licence. There were 14 sample analysis carried out in 2012 for the effluent. There was one exceedance for BOD of 27mg/l on 24/02/12 which under condition 2 of the licence is not an incident as it is under allowable 100% deviation for BOD. The discharges from Castleblayney WWTP for 2012 were therefore compliant with ELV limits in the discharge licence with no reportable incidents to the EPA required.

2.3 Ambient monitoring summary

A summary presentation of the ambient monitoring results for the upstream (National grid reference 283028E 319980N) and downstream (National grid reference 283132E 319880N) receiving waters is tabulated in tables 2.3 and 2.4 attached in appendix 1. There were 12 sample analyses carried out in 2012 for the ambient monitoring. Lough Muckno is identified as sensitive water in terms of the Urban Waste Water Treatment Regulations 2001. It is

not a designated Salmonid water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988), nor designated as an SPA, SAC or NHA. The impact of the discharge from the agglomeration on Lough Muckno is assessed with regard to the Environmental Quality Standards (EQS), (Surface Water Regulations 2009) for BOD and total Ammonia in the following calculations:

Assimilative Capacity of Receiving Water:

There is no OPW flow monitoring data available near the outfall location. The OPW records for the river Fane downstream at Clarebane station, no. 06012 gives the 95-percentile flow at a figure of 0.2m³/s. However this is a considerable distance downstream and the river is wider and larger at this point, the EPA flow estimation website gives a 95-percentile flow for the river flowing upstream of the discharge point for Castleblayney of 0.102m³/s. This figure is considered more reflective of the receiving water flow at the discharge point and is therefore used in these calculations. Lough Muckno's overall status is classified as 'bad' and at risk of not meeting good status by 2015, with overall objective to restore it to good status by 2021.

The assessment has been undertaken on the basis of an average discharge flow to the receiving water from the Wastewater Treatment Plant and the measured average upstream BOD and Total Ammonia concentrations from Monaghan County Council 2012 results.

BOD Assimilative Capacity

95-percentile Flow Conditions

The BOD assimilative capacity of the river under 95-percentile flow conditions is calculated by:

$$AC = (C_{max} - C_{back}) \times 86.4 \times F$$

where,

AC = Assimilative capacity

C_{max} = maximum permissible concentration (EQS) in the river (mg/l) (in this case taken as a maximum of 2.6mg/l) (SW Reg's 2009 – good status (use good status as river is poor status))

C_{back} = background upstream concentration (mg/l) (3.92mg/l – M.C.C. Upstream 2012 data)

Use adjusted background concentration as measured background conc. Exceeds EQS: ((2.6-2.2)/2)+2.2=2.4mg/l

86.4 = constant to correct units to kg/day

F = flow in the river (m³/s) 95%ile flow (0.102m³/s or 8,812,800l/d)

Therefore,

$$AC = (2.6-2.4) \times 86.4 \times 0.102$$

$$AC = 1.76\text{kg/day}$$

Total Amount Discharge to River:

With an average effluent discharge volume of 2004m³/day, and average BOD 7.08mg/l (refer table 2.1, appendix 1), the total amount of BOD discharged to the Lough Muckno:

$$(2,004,000\text{/day} \times 7.08\text{mg/l}) / 1,000,000 \text{ (mg to Kg)} = \mathbf{14.19\text{kg/day}}$$

The Mass balance formula is used to calculate the **resulting BOD concentration in the receiving water** resulting from the effluent discharge:

$$T = \frac{FC + fc}{F + f}$$

Where;

T = resultant concentration due to the discharge (mg/l)

F = 95%ile flow of receiving water (m³/s) (95% flow of 0.102m³/s or 8,812,800l/d)

c = average concentration in discharge (7.08mg/l)

C = mean background concentration in receiving water u/s of discharge (3.92mg/l – M.C.C. Upstream 2012 data)

Use adjusted background concentration as measured background conc. Exceeds EQS: ((2.6-2.2)/2)+2.2=2.4mg/l

f = discharge volume 2,004,000l/d

$$1\text{m}^3/\text{s} = 86,400,000 \text{ l/d}$$

Therefore:

$$T = [(8,812,800 \times 2.4) + (2,004,000 \times 7.08)] / [8,812,800 + 2,004,000]$$

$$\mathbf{T = 3.27\text{mg/l}}$$

Summary Result - BOD

| BOD | 95-Percentile Flow |
|--|--|
| Assimilative Capacity of Receiving Water | 1.76kg/day |
| Total Amount Discharged | 14.19kg/day |
| % of Assimilative Capacity Absorbed | >100% |
| Existing Average Background Upstream | (3.92mg/l – M.C.C. Upstream 2012 data) Use adjusted background concentration as measured background conc. Exceeds EQS: ((2.6-2.2)/2)+2.2=2.4mg/l |
| Resultants Conc in River | 3.27mg/l |
| Standard EQS – S.W. Regs 2009 | 2.6mg/l (Good Status) |

There is no headroom available, as the current upstream concentration exceeds the EQS of 2.6mg/l already.

The resultant concentration is above the EQS of 2.6mg/l for 95%ile flow conditions (Surface water regs 2009), at a figure of 3.27mg/l. This can be attributed to the receiving Lough Muckno's existing 'bad' status, therefore the existing background upstream BOD concentration is already higher (3.92mg/l - 2012 results) than the Surface Water Regs 2009 EQS of 2.6mg/l therefore adjusted figures for the background upstream concentration has to be used (assuming 'good' status), leaving the assimilative capacity of the Lough Muckno very low for BOD.

Total Ammonia Assimilative Capacity

95-percentile Flow Conditions

The Total Ammonia assimilative capacity of the receiving waters under 95-percentile flow conditions is calculated by:

$$AC = (C_{max} - C_{back}) \times 86.4 \times F$$

where,

AC = Assimilative capacity

C_{max} = maximum permissible concentration (EQS) in the river (mg/l) (in this case taken as a maximum of 0.14mg/l) (SW Reg's 2009 – good status (use good status as receiving water is poor status))

C_{back} = background upstream concentration (mg/l) (0.166mg/l – M.C.C. Upstream 2012 data)

Use adjusted background concentration as measured background conc. Exceeds EQS: $((0.14-0.09)/2)+.09=0.115\text{mg/l}$

86.4 = constant to correct units to kg/day

F = flow in the receiving water (m³/s) 95%ile flow (0.102m³/s or 8,812,800/d)

Therefore,

$$AC = (0.14-0.115) \times 86.4 \times 0.102$$

$$AC = 0.22\text{kg/day}$$

Total Amount Discharge to receiving waters:

With an average effluent discharge volume of 2,004m³/day, and average total ammonia of 10.36mg/l (refer table 2.1, appendix 1), the total amount of ammonia discharged to Lough Muckno:

$$(2,004,000\text{/day} \times 10.36\text{mg/l}) / 1,000,000 \text{ (mg to Kg)} = \mathbf{20.76\text{kg/day}}$$

The Mass balance formula is used to calculate the **resulting total Ammonia concentration in the receiving water** resulting from the effluent discharge:

$$T = \frac{FC + fc}{F + f}$$

Where;

T = resultant concentration due to the discharge (mg/l)

F = 95%ile flow of receiving water (m³/s) (0.102m³/s or 8,812,800l/d)

c = average concentration in discharge (10.36mg/l)

C = mean background concentration in receiving water u/s of discharge (0.166mg/l – M.C.C. Upstream 2012 data)

Use adjusted background concentration as measured background conc. Exceeds EQS: $((0.14-0.09)/2)+.09=0.115\text{mg/l}$

f = discharge volume 2,004,000l/d

1m³/s = 86,400,000 l/d

Therefore:

$$T = [(8,812,800 \times 0.115) + (2,004,000 \times 10.36)] / [8,812,800 + 2,004,000]$$

$$\mathbf{T = 2.01\text{mg/l}}$$

Summary Result – Total Ammonia

| | |
|--|---|
| Total Ammonia | 95-Percentile Flow |
| Assimilative Capacity of Receiving waters | 0.22kg/day |
| Total Amount Discharged | 20.76kg/day |
| % of Assimilative Capacity Absorbed | >100% |
| Existing Average Background Upstream | 0.115mg/l – Use adjusted method as existing status poor |
| Resultants Conc in Receiving water | 2.01mg/l |
| Standard EQS – S.W. Regs 2009 | 0.14mg/l (Good Status) |

There is no headroom available, as the current upstream concentration exceeds the EQS of 0.14mg/l already.

The resultant concentration is above the EQS of 0.14mg/l for 95%ile flow conditions (Surface water regs 2009), at a figure of 2.01mg/l. As previously stated for total Ammonia assimilative capacities, this can be attributed to the existing status of Lough Muckno being 'bad' with the existing background upstream total Ammonia concentration already higher (0.166mg/l - 2012 results) than the Surface Water Regs 2009 EQS of 0.14mg/l therefore adjusted figures for the background upstream concentration has to be used (assuming 'good' status), leaving the assimilative capacity of the Lough Muckno very low for Total Ammonia.

2.4 Data Collection and reporting requirements under the UWWT Directive.

This information will be submitted separately to the EPA through EDEN.

2.5 Pollutant Release and Transfer Register (PRTR) – report for 2012.

This information is submitted electronically via the EPA website. Both the AER/PRTR Emissions Data information and the Excel calculation toolset are printed out and included at the end of this AER in Appendix 2.

Section 3. Operational Reports Summary

3.1 Complaints Summary

There were no complaints of an environmental nature related to the discharge from Castleblayney WWTP in 2012.

3.2 Reported Incidents Summary

As stated in section 2.2, there were no reportable incidents relating to exceedances of ELV's for Castleblayney discharge in 2012.

One other incident reported to the EPA on 22/03/2012, related to a leak of stored pressed sludge into the aeration tanks from a sludge holding area at the WWTP caused by heavy rain (adverse weather) and irregular collection of sludge by a licensed haulier at the time. This sludge leak deactivated the activated sludge in the aeration tanks for a time. The corrective action taken was to remove all sludge from the holding area by licensed haulier for disposal and reseedling of the aeration tanks was undertaken with activated sludge from Carrickmacross WWTP. The preventative action taken at the time was to remove stored sludge at frequent intervals from the storage area to ensure no build up would occur and thus no leaks/movement from the storage area again. Further measures have been completed in January 2013 by Monaghan County Council in relation to pressed sludge storage at

Castleblayney WWTP. Prior to this, pressed sludge from the belt press was collected in an open trailer which was tipped into a concrete sludge storage area at the WWTP when full, for collection by licensed haulier for disposal. This storage area is not covered and therefore not aesthetically pleasing and may have caused odours from time to time. A new system has been installed in January 2013 at the belt press shed whereby pressed sludge is collected into a hopper and then pumped into an enclosed 18 tonne trailer, this trailer is removed from site by licensed haulier for disposal when full, thus eliminating the need for the use of the open storage area on site. The cost of this new system was €20,000.

Section 4. Infrastructural Assessment & Programme of Improvements

4.1 Treatment Capacity

As per condition 1.7 of the licence, an annual assessment of the remaining hydraulic and organic treatment capacities of the waste water works is required. This assessment is tabulated in table 1.2, appendix 1, as stated in the table there is hydraulic remaining capacity of 14% and Organic remaining capacity of 43% at the treatment works based on the current loading from 2012 figures. Hydraulically, based on the average figure of inflow used of 2004m³, there is only 14% capacity or 1,827 P.E. available at the WWTP, however, these calculations are based on the figures recorded on the date of influent sampling only, which vary widely from 602m³ in March to one particularly high figure of 3868m³ that occurred in November during heavy rainfall conditions, thus bringing the average up. Organically there is adequate capacity remaining at the WWTP from these calculations with 43% or 5,518P.E. available. The population equivalent of Castleblayney town was last estimated at approximately 1,751 persons. This figure is based Census 2011 data. The domestic population growth rate and population projection for the next three years is based on the population change between 2006 and 2011 (Census 2011 data), these figures show that there was a decline of 3.9% in population growth. Based on this population decline and the current economic climate, it is not anticipated that there will be any population increase of significance in the next three years, thus there is adequate capacity available at the Castleblayney WWTP.

4.2 Storm water and Emergency overflows identification and inspection report

As per condition 4.12.1 of the licence, a report on the investigation and assessment of Storm Water and Emergency overflows is required as part of the second AER. This report is included under appendix 2 of this report.

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

As per condition 5.1 of the licence, a programme of infrastructural improvements to maximise the efficiency and effectiveness of the waste water works shall be prepared and submitted:

Under Schedule C.1 of the licence, '*Specified Improvement Programme*', waste water treatment plant and ancillary works are specified with completion date specified of 31st December 2015. In the initial discharge licence application in 2008, a large expansion of the Castleblayney WWTP was outlined to upgrade the design of the plant to 28,000 P.E. including major infrastructural works. However, since then, An Bord Pleanala have declared an upper limit of this expansion to the WWTP of 14,000 P.E. and only approved Stage 1 of the proposed works outlined as follows:

- Inlet pumping station
- 1 no. storm tank, 1,314m³ in volume
- Tertiary treatment units
- Picket fence thickener and
- New sludge dewatering building

An Bord Pleanala decided that Stage 2 of the proposed development is to be omitted entirely, Stage 2 involved upgrade of the WWTP capacity to 28,000 P.E., with land acquisition, additional secondary treatment, additional storm tank, inlet works, additional tertiary treatment units and a three stage odour control unit and building.

Stage 1 proposed upgrading works for Castleblayney WWTP will depend on DoECLG approval and funding, it is on the Water Services Investment Programme (WSIP) 2010 -2013 at an estimated cost of €3,927,000, however, it is currently at planning stage and is unlikely to be approved before the end of the current WSIP –December 2013. It will also depend on DoECLG approval and funding, as to whether the completion date of December 31st 2015 will be realised for these 'Stage 1' works.

Under schedule C.3 of the licence, upgrading of the Storm Water Overflows to comply with the criteria outlined in the DOEHLG '*Procedures and Criteria in relation to Storm Water Overflows, 1995*' with completion date of 31st December 2015 specified. A detailed storm water and emergency overflow report is included in section 4.2/appendix 2 of this report. Works completed to date by Monaghan County Council regarding this specified improvement are, two CSO's on the network have been decommissioned and one SWO from the inlet works of the WWTP has been decommissioned in 2012. Further upgrading/improvement works have been identified for two of the remaining SWO's. New storm water storage facilities are proposed in 'Stage 1' works for upgrading the WWTP as outlined above, this additional storage would

minimise/eliminate the risk of overflows to Lough Muckno from SW3 at the WWTP.

Under condition 5.2 (a) of the licence, the programme of infrastructural improvements shall include an assessment of the waste water treatment plant having regard to the effectiveness of the treatment provided by reference to the following:

(i) The existing level of treatment, capacity of treatment plant and associated equipment:

The existing level of treatment at the plant is secondary with dosing facilities on site for Phosphorus, currently, there is no dosing at the plant as the Phosphorus levels are within ELV's specified in the licence. Ammonia levels are high in the effluent, consideration is being given by Monaghan County Council to creating/installing an anoxic zone within the treatment plant to reduce these levels, (pending costs and funding being available). The capacity of the treatment plant is currently adequate as outlined in section 4.1 of this report.

(ii) The emission limit values specified in *Schedule A: Discharges*, of this licence:

The WWTP is currently effectively treating the effluent to the ELV's specified in Schedule A of the licence, however, with no incidents in 2012. There are new lower ELV's specified under Schedule A for the primary discharge point from 1st January 2016 for the WWTP. The proposed specified improvement works approved by 'An Bord Pleanála' for tertiary treatment, storm tanks and a sludge picket fence thickener would improve the effluent parameters overall with additional treatment provided and eliminating the current requirement to turn off the RAS pumps from the clarifiers to allow sludge to be pressed. Dosing can be commenced to further reduce the Phosphorus levels at the WWTP to meet the reduced ELV's in 2016.

(iii) The designations of the receiving water body:

The outfall from the Castleblayney Waste Water Plant discharges to the Lough Muckno Lake via a small stream at National Grid Reference 283041E 319961N in the Town land of Drumillard Little, Castleblayney, Co Monaghan. Lough Muckno is identified as sensitive water in terms of the Urban Waste Water Treatment Regulations 2001. It is not designated Salmonid water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988) nor designated as an SPA, SAC or NHA.

Lough Muckno is in the Neagh Bann river basin district with overall status classified as 'Bad' and at risk of not meeting good status by 2015, with overall objective to restore its status by 2021. The 'point risk source' and potential for impact from the Castleblayney WWTP discharge on the lake is categorised as '2b – not at risk' and the combined storm overflows (CSOs) categorised as '2b – not at risk', however the overall objectives relating to this water body is to upgrade WWTP discharges by 2021 (ref: WFD Ireland maps/website & reports.) The treatment being provided at present is not adequate for

ammonia and nitrogen reduction at the WWTP and therefore impacting on the lake, however there are new lower ELV limits specified in the licence from 1st January 2016 of ammonia at 0.5mg/l and Total P of 0.3mg/l. These reduced ELV's that have to be met will reduce the impact from the WWTP on Lough Muckno. The specified improvements under schedule C1 of the licence for the WWTP that have been approved by 'An Bord Pleanála' – proposed Stage 1 works if completed, would also provide additional tertiary treatment for the effluent thus reducing emissions from the WWTP and provision of additional storm tanks would minimise the risk of storm water overflows to the lake, thus assisting in enabling the overall objective to restore it to 'good status' by 2021 under the Water Framework Directive.

(iv) Downstream abstractions and uses of water:

Lough Muckno is a large lake in Castleblayney that is used for fishing and recreational activities. There are three drinking water abstraction points further downstream of Lough Muckno. The first drinking water abstraction point is by Northern Ireland Water, from Lough Ross some 3km downstream of Lough Muckno, at Carran hill water supply scheme which supplies approximately 3600m³/day for the South Armagh area.

The second drinking water abstraction point is by Monaghan County Council, from the River Fane some 16km downstream of Lough Muckno, at Inniskeen Public Water Supply (PWS) water supply scheme which supplies approximately 186m³/day for the Inniskeen area.

The third drinking water abstraction is located at Stephenstown in County Louth (Cavan Hill water supply scheme) approximately 26km downstream of Lough Muckno supplying Dundalk town and parts of County Louth. As stated in point no. (iii) above, the new lower ELV's specified in the licence from January 2016 will reduce the impact from the effluent discharge from the WWTP on Lough Muckno and if the approved upgrading works are completed, they will also further reduce the impact of the WWTP on Lough Muckno, thus assisting in enabling the overall objective to restore it to 'good status' by 2021 under the Water Framework Directive.

(v) Water quality objective for the receiving water body:

This item was addressed in point no. 4.3 (iii) above.

(vi) The standards and volumetric limitations applied to any industrial waste water that is licensed to discharge to the waste water works:

There are a small number of licences applicable in Castleblayney, one meat plant operator ceased production in 2012 due to the economic downturn. There are no other food processors licensed to the WWTP at present. The remainder operate within the standards and volumetric limitations of their licences.

Under condition 5.2 (b) of the licence, the programme of infrastructural improvements shall include an assessment of the integrity of the waste water works having regard to:

(i) Capacity of the waste water works:

The capacity of the treatment plant is currently adequate as outlined in section 4.1 of this report.

(ii) Leaks from the waste water works:

There are no known leaks from the waste water works.

(iii) Misconnections between foul sewers and surface water drainage network:

Monaghan County Council's Environment section monitor surface waters and investigate any misconnections highlighted. The more recent housing developments would have separate foul and surface water systems. Any misconnections brought to Monaghan County Council's attention are investigated.

(iv) (v) Infiltration by surface water/ground water:

A detailed survey was carried out of the Castleblayney network and treatment plant in 2008 by Consultants for Monaghan County Council. This survey highlighted deficiencies within the sewer network under various headings – structural, hydraulic and service condition. Detailed drawings and reports were produced by the Consultants, there are no plans to address deficiencies highlighted on the network or upgrade the network due to funding constraints.

Under condition 5.2 (c) of the licence, the programme of infrastructural improvements shall include an assessment of all storm water overflows associated with the waste water works to determine the effectiveness of their operation and in particular identify improvements necessary to comply with the requirements of this licence:

This item is addressed in the SWO/CSO detailed report included under appendix 2 of this report.

Condition 5.3 (a) and (b) of the licence, the programme of infrastructural improvements shall include a plan for implantation for each individual improvement identified:

This item is addressed/covered in section 4.3 above.

Section 5. Environmental liability and Financial Provisions

5.1 Statement of measures

Appendix 2 details this item.

5.2 Environmental Liabilities Risk Assessment

Appendix 2 details this item.

Section 6. Licence Specific Reports

There are three licence specific reports required under the Castleblayney licence:

Report 1: Priority Substance Assessment

Appendix 2 details this item.

Report 2: Drinking Water Abstraction Point Risk Assessment

Under condition 4.17 of the licence 'a risk assessment for the protection of the downstream drinking water abstraction points' is required. This risk assessment is assessing the impact of the Castleblayney waste water treatment plant and its discharges on the receiving water, Lough Muckno. Lough Muckno flows via a short river namely the Clarebane River (approx. 3km long), into Lough Ross and out into the river Fane, there are three drinking water abstraction points further downstream of Lough Muckno. The first drinking water abstraction point is by Northern Ireland Water, from Lough Ross some 3km downstream of Lough Muckno, at Carran hill water supply scheme which supplies approximately 3600m³/day for the South Armagh area. Carran hill Water treatment works is situated on the outskirts of Crossmaglen in County Armagh. Northern Ireland Water commissioned a new £10 million modern treatment works in August 2006 at Carran hill. The second drinking water abstraction point is by Monaghan County Council, from the River Fane some 16km downstream of Lough Muckno, at Inniskeen Public Water Supply (PWS) water supply scheme which supplies approximately 186m³/day for the Inniskeen area. Inniskeen Water treatment works is situated on the outskirts of the village of Inniskeen in County Monaghan. Inniskeen PWS is part of a Design, Build and Operate bundle in County Monaghan, whereby a private contractor operates the treatment plant for the Council. The water treatment plant is a modern treatment plant using coagulation and dissolved air flotation that was commissioned in 2004. The third drinking water abstraction is located at Stephenstown in County Louth (Cavan Hill water supply scheme) approximately 26km downstream of Lough Muckno supplying Dundalk town and parts of County Louth. Cavan Hill water supply scheme abstracts water from the River Fane at Stephenstown in County Louth and treats the water at a treatment plant located approximately 2km from the intake at 'Cavan Hill'. Cavan Hill water

treatment plant is a large modern treatment plant using rapid gravity filtration. Dundalk Town Council have a Water Order for abstraction of 36,400m³/day from the River Fane, they are presently abstracting half of this amount producing an average of 18,000m³/day treated water for it's consumers.

Castleblayney WWTP discharge has the potential to impact on the downstream water abstraction points in relation to pollutant loading into Lough Muckno and hence Lough Ross and the River Fane. The risk from the Castleblayney WWTP will be assessed under four separate headings with an overall risk ranking applied in a conclusion:

- (1) Level of treatment and capacity of WWTP.
- (2) Discharge compliance.
- (3) Lough Muckno and the River Fane quality and monitoring data.
- (4) Discharges impact during periods of normal and abnormal operation and control measures.

(1) Level of treatment and capacity of WWTP:

Castleblayney WWTP provides secondary treatment with nutrient removal (phosphorus reduction) facilities that are not currently operational due to Phosphorus levels being within required ELV's. The plant is operated and maintained to a good standard with a caretaker 8 hours per day Monday to Friday and 2 hours Saturdays and Sundays. The design P.E. of the plant is 12,960 with it currently treating 11,133 P.E. An assessment of the remaining capacities at the plant is outlined in section 4.1 of this AER, (tabulated in table 2.3, appendix 1). The conclusion of this is that there is remaining hydraulic capacity of 14% and Organic capacity of 43% at the treatment works based on the current loading.

The level of treatment and capacity of the treatment works is adequate to cater for the loading into the plant and to produce effluent compliant with licence requirements, thus the risk ranking for this element of the WWTP is applied as *low risk*.

(2) Discharge Compliance:

Under Schedule B and condition 2 of the licence (ref. table 2.1, appendix 1 and section 2.2 of this AER report) the Castleblayney WWTP discharge is compliant for all licensed parameters in 2012. A regular monitoring and sampling program is in place for analysis of the discharge at the Castleblayney WWTP thus minimising the risk of pollution to Lough Muckno and the river Fane.

The assimilative capacity calculations for the impact of the discharge on the receiving Lough Muckno are calculated in this report, the existing status of Lough Muckno is 'bad' (WFD website and reports) and highly eutrophic (EPA website and reports), therefore the existing BOD and total Ammonia upstream levels in the catchment are higher than the EQS before the primary discharge

point of the Castleblayney WWTP, therefore 'good status' adjusted figures were applied as required in the assimilative calculations to assess the impact of the BOD and total Ammonia loading from the plant effluent on the receiving water. The assimilative capacity calculations for BOD and total Ammonia from the plant to the receiving Lough Muckno (ref. section 2.3 of this AER report) conclude that they are over the EQS applicable for each parameter in the Lake and are therefore impacting upon the existing Lough Muckno quality. There are other factors causing pollution to Lough Muckno upstream of Castleblayney WWTP such as agricultural activities. The risk ranking for this element of the discharge from the WWTP is therefore applied as '*medium risk*'.

(3)Lough Muckno lake and downstream River Fane quality and monitoring data.

Lough Muckno lake existing status has been discussed under item (2) above with existing status designated as 'bad' (WFD website and reports), Lough Muckno flows into the Clarebane river which is approximately 3.6km long flowing into Lough Ross and then out into the River Fane which flows to County Louth via Inniskeen village. Clarebane river has a 'Q3' quality rating in 2006 by the EPA thus it is 'moderate' status, however, the groundwater status for the catchment area is classified as 'good' in 2011 from monitoring by the EPA at the Clarebane bridge monitoring station no. 300 (EPA website and reports). There is no surface water quality data available for Lough Ross as the majority of the Lough is in Northern Ireland, however, the groundwater status for the catchment area is classified as 'good' in 2011 from monitoring by the EPA. The river Fane downstream of this Lough has a 'Q3' quality rating in 2009 thus it is moderate status, by the EPA, but it is classified as being 'poor' overall status (WFD website and reports) under the river basin district assessment 2009-2015, with overall objective to restore 'good status' by 2021. This 'poor status' applies for the length of the Fane River to the border with Louth. Given the fact that the local and downstream receiving waters are already 'poor status', it is concluded that any discharge will impact the receiving waters as there is no assimilative capacity available within the waters as outlined in section 2.3 of this AER report, however, the Castleblayney WWTP discharges for 2012 are compliant. There are 3 combined sewer overflows on the network as outlined in the CSO report in appendix 2 of this report, 2 are considered to operate in periods of heavy rainfall which overflow to the receiving waters upstream of the discharge point on occasion, which would obviously impact on the quality of the receiving waters. Improvement works to decommission one of these CSO's and raise the weir wall in the other one are planned for 2013. Other contributors to the upstream pollution could be attributed to farming practices such as slurry spreading, fertiliser runoff, poor storage facilities and also from other sources such as septic tanks. The impact of the Castleblayney WWTP discharge could be improved with the decommissioning of the CSO's and additional storm storage at the WWTP.

The risk ranking for this element of the discharges from the WWTP is therefore applied as '*medium risk*'.

(4) Discharges impact during periods of normal and abnormal operation and control measures.

The impact of the Castleblayney discharge on the drinking water abstraction points downstream is considered low -medium risk as discussed in points 1 to 3 above. Periods of abnormal operation at the plant would be considered to occur due to extreme storm conditions, equipment malfunction or breakdown, Power cut, or dumping of toxic waste e.g. diesel wash into the network. The impact to the treatment plant and discharge to Lough Muckno and the receiving waters from these events occurring is minimised by having a plant operator on site every day at the plant, therefore identifying any abnormal events that occur and implementing control measures as necessary to alleviate them. There is a storm tank on site, which has a storage capacity of 300m³, which has a storm overflow that will activate during periods of prolonged rainfall, additional storm storage would minimise the risk of overflow to Lough Muckno from this tank. There are 2 number CSOs on the network that could activate during storms, thus impacting on the quality of the receiving waters. All pumping stations on the network have a dial out facility to the caretakers phone to alert him of pump malfunction or breakdown, thus enabling immediate response. The controls and monitors at the treatment works are continually monitored by the plant operator, which would highlight any problem with the treatment plant equipment or treatment process. The risk of a chemical spill or overdose into the treatment system at the plant is minimised as the storage tanks for all chemicals are bunded. Regular monitoring of the effluent also ensures that any deviations in the effluent parameters resulting from problems with the treatment process are addressed. In the event of a power cut, the electricity supply company will be contacted and a standby generator brought in. There has been no incidents of illegal waste being dumped into the sewer network in Castleblayney, however given the proximity of the plant to the border of Northern Ireland and that the dumping of illegal diesel wash is prevalent in the Monaghan/Northern Ireland border area, consideration is given to this event occurring. If this event occurred, it may lead to a worst case scenario of the Castleblayney WWTP being effectively 'shut down' while a clean up of the treatment plant is undertaken and removal of the toxic material and effected plant media to a licensed disposal facility in Germany. While the WWTP is unable to operate and treat the influent from the agglomeration, consideration would be given to tanker the influent by a licensed haulier to a WWTP elsewhere in Monaghan with available capacity to treat it, until the WWTP is up and running again. If there is an event at the plant that leads to a pollution incident in Lough Muckno, Monaghan County Council will immediately notify the downstream drinking water sources, Carran Hill Water supply scheme – Northern Ireland Water, Inniskeen PWS – Monaghan County Council and Dundalk town council who are responsible for the Cavan Hill downstream water abstraction water

supply scheme, the EPA and the Inland Fisheries Board and implement any control measures and necessary works to address the incident. From the occurrence of these periods of abnormal operation and the control measures in place to deal with them should they occur, the risk ranking for this element of the discharge from the WWTP is applied as '**medium risk**'.

Conclusion:

From the risk ranking applied to the impacts of the Castleblayney WWTP discharge on the downstream drinking water abstraction points in the four situations addressed previously in this section, it is concluded that the **overall risk is 'medium'**.

Report 3: Assessment to investigate options to relocate the primary discharge point:

This assessment has not been completed to date, it will be completed and submitted to the EPA in 2013.

Appendix 1

| | |
|--------------------------|--|
| Table 1 & 1.1 | Influent monthly monitoring summary |
| Table 1.2 | Remaining Hydraulic & Organic treatment capacities |
| Table 2 | Monitoring results for Castleblayney WWTP |
| Table 2.1 | Effluent monitoring results |
| Table 2.2 | Influent monitoring results |
| Table 2.3 | Upstream monitoring results |
| Table 2.4 | Downstream monitoring results |

Table 1
Influent monthly monitoring - as per condition 4.15 of licence.

| Location | Daily Flow M3 | Influent/ Effluent | Date of Sampling | Sample Type (C or G) | BOD mg/l | BOD Loading (Kg/day) | BOD Removal Efficiency % | COD mg/l | COD Loading (Kg/day) | COD Removal Efficiency % | SS mg/l | SS Loading (Kg/day) | SS Removal Efficiency % | Total P mg/l P | Total P Loading (Kg/day) | Total P Removal Efficiency % | Total N mg/l N | Total N Loading (Kg/day) | Total N Removal Efficiency % |
|---------------|---------------|--------------------|------------------|----------------------|---------------|----------------------|--------------------------|----------|----------------------|--------------------------|---------|---------------------|-------------------------|----------------|--------------------------|------------------------------|----------------|--------------------------|------------------------------|
| Castleblayney | 1750.00 | Influent | 24/02/2012 | C | 214.0 | 374.50 | | 567.00 | 992.25 | | 188.00 | 294.00 | | 3.390 | 5.93 | | 35.10 | 61.43 | |
| | 1750.00 | Effluent | 24/02/2012 | C | 27.0 | 47.25 | 87.38 | 71.00 | 124.25 | 87.48 | 10.00 | 17.50 | 94.05 | 1.400 | 2.45 | 58.70 | 18.24 | 31.92 | 48.03 |
| Castleblayney | 602.00 | Influent | 03/03/2012 | C | 375.00 | 225.75 | | 1076.00 | 647.75 | | 481.00 | 289.56 | | 7.043 | 4.24 | | 57.12 | 34.39 | |
| | 602.00 | Effluent | 03/03/2012 | C | 16.00 | 9.63 | 95.73 | 72.00 | 43.34 | 93.31 | 19.00 | 11.44 | 96.05 | 1.775 | 1.07 | 74.80 | 24.75 | 14.90 | 56.67 |
| Castleblayney | 1445.00 | Influent | 18/05/2012 | C | 185.00 | 267.33 | | 923.00 | 1333.74 | | 326.00 | 471.07 | | 3.989 | 5.76 | | 47.04 | 67.97 | |
| | 1445.00 | Effluent | 18/05/2012 | C | 4.00 | 5.78 | 97.84 | 33.00 | 47.69 | 96.42 | 4.00 | 5.78 | 98.77 | 0.159 | 0.23 | 96.01 | 16.41 | 23.71 | 65.11 |
| Castleblayney | 2146.00 | Influent | 19/06/2012 | C | 305.00 | 654.53 | | 792.00 | 1699.63 | | 338.00 | 725.35 | | 9.116 | 19.56 | | 66.32 | 146.61 | |
| | 2,146.00 | Effluent | 19/06/2012 | C | 1.80 | 3.66 | 99.41 | 17.00 | 36.48 | 97.85 | 4.00 | 8.58 | 98.82 | 0.299 | 0.64 | 96.72 | 11.40 | 24.46 | 83.31 |
| Castleblayney | 2977.00 | Influent | 16/07/2012 | C | No lab result | | | 343.00 | 1021.11 | | 244.00 | 726.39 | | 3.656 | 10.88 | | 54.88 | 163.38 | |
| | 2977.00 | Effluent | 16/07/2012 | C | 12.00 | 35.72 | | 22.00 | 65.49 | 93.59 | 3.00 | 8.93 | 98.77 | 0.178 | 0.53 | 95.13 | 10.64 | 31.68 | 80.61 |
| Castleblayney | 1896.00 | Influent | 14/08/2012 | C | 220.00 | 417.12 | | 562.00 | 1065.55 | | 183.00 | 346.97 | | 3.757 | 7.12 | | 31.92 | 60.52 | |
| | 1896.00 | Effluent | 14/08/2012 | C | 2.00 | 3.79 | 99.09 | 22.00 | 41.71 | 96.09 | 6.00 | 11.38 | 96.72 | 1.174 | 2.23 | 68.75 | 15.52 | 29.43 | 51.38 |
| Castleblayney | 1729.00 | Influent | 05/09/2012 | C | 265.00 | 458.19 | | 534.00 | 923.29 | | 312.00 | 539.45 | | 4.914 | 8.50 | | 46.48 | 80.36 | |
| | 1729.00 | Effluent | 05/09/2012 | C | 13.00 | 22.48 | 95.09 | 41.00 | 70.89 | 92.32 | 3.00 | 5.19 | 99.04 | 0.189 | 0.33 | 96.15 | 16.05 | 27.75 | 65.47 |
| Castleblayney | 1726.00 | Influent | 19/09/2012 | C | 190.00 | 327.94 | | 506.00 | 873.36 | | 160.00 | 276.16 | | 6.904 | 11.92 | | 53.20 | 91.82 | |
| | 1726.00 | Effluent | 19/09/2012 | C | 2.00 | 3.45 | 98.95 | 29.00 | 50.05 | 94.27 | 9.00 | 15.53 | 94.38 | 1.276 | 2.20 | 81.52 | 14.50 | 25.03 | 72.74 |
| Castleblayney | 2491.00 | Influent | 17/10/2012 | C | 49.00 | 122.06 | | 245.00 | 610.30 | | 103.00 | 256.57 | | 1.902 | 4.74 | | 16.24 | 40.45 | |
| | 2491.00 | Effluent | 17/10/2012 | C | 0.90 | 2.24 | 98.16 | 22.00 | 54.80 | 91.02 | 2.00 | 4.98 | 98.06 | 0.116 | 0.29 | 93.90 | 5.12 | 12.75 | 68.47 |
| Castleblayney | 3868.00 | Influent | 14/11/2012 | C | 235.00 | 906.98 | | 2278.00 | 8811.30 | | 646.00 | 2498.73 | | 1.993 | 7.71 | | 40.33 | 156.00 | |
| | 3868.00 | Effluent | 14/11/2012 | C | 2.00 | 7.74 | 99.15 | 21.00 | 81.23 | 99.08 | 2.00 | 7.74 | 98.69 | 0.469 | 1.81 | 76.47 | 9.33 | 36.09 | 76.87 |
| Castleblayney | 2701.00 | Influent | 03/12/2012 | C | 180.00 | 513.19 | | 746.00 | 2014.95 | | 183.00 | 494.28 | | 1.431 | 3.87 | | 38.08 | 102.85 | |
| | 2701.00 | Effluent | 03/12/2012 | C | 3.30 | 8.91 | 98.26 | 22.00 | 59.42 | 97.05 | 9.00 | 24.31 | 95.08 | 0.118 | 0.32 | 91.75 | 7.42 | 20.04 | 80.51 |

Table 1.1
Influent monitoring summary table

| | BOD mg/l | COD mg/l | Total P mg/l | Total N mg/l/N | Volumetric Loading m ³ /day | Leading PE/day |
|-------------------|----------|----------|--------------|----------------|--|--|
| Number of samples | 10 | 11 | 11 | 11 | n/a | n/a |
| Maximum result | 375.00 | 2278.00 | 9.116 | 68.32 | 3868.00 | 21,489 |
| Annual Mean | 222.80 | 779.27 | 4.37 | 44.43 | 2,004 | 11,133 |
| | | | | | | Storm conditions for max. inflow result 14/11/2012 |

Table 1.2

| Remaining Hydraulic & Organic treatment capacities - as per condition 1.7.1 of licence. | | | | | | |
|---|--------------------------|-----------------------------------|-------------------|-----------------------------|-------------------------------|--|
| | Design capacity of plant | Current Flowloading to plant 2012 | Current PE equiv. | Remaining capacity of plant | Remaining capacity of plant % | Remaining capacity of plant (P.E. equiv) |
| Design PE Hydraulic loading M ³ /day | 12,960 | | | | | |
| Organic loading BOD kg/day | 2,333 | 2004 | 11,133 PE equiv. | 328.80 | 14.09 | 1826.67 |
| | 778 | 446.49 | 7,442 PE equiv. | 331.11 | 42.58 | 5518.48 |

Table 2: Monitoring Results for Castleblayney WWTP

| Location | Out Flow M3/day | Location | Date of Sampling | Sample Type (C or G) | Temp | PH | cBOD mg/l | COD mg/l | Suspended Solids mg/l | Ortho Phosphorus/M RP mg/l | Total Phosphorus mg/l (as P) | Ammonia (as N) | Total Nitrogen mg/l (as N) |
|---------------|-----------------|----------------------|------------------|----------------------|------|----|-----------|----------|-----------------------|----------------------------|------------------------------|----------------|----------------------------|
| Castleblayney | | Influent | 02/02/2012 | C | | | | | | | | 12.10 | 17.68 |
| Castleblayney | | Effluent | 02/02/2012 | C | | | 22.00 | 58.00 | 12.00 | <2 | | | |
| Castleblayney | | Up Stream Of Works | 02/02/2012 | | | | 2.00 | | | <0.5 | 0.08 | <0.1 | <7 |
| Castleblayney | | Down Stream of Works | 02/02/2012 | | | | <2 | | | <0.5 | 0.15 | <0.1 | <7 |
| Castleblayney | | Influent | 24/02/2012 | C | | | 214.00 | 567.00 | 168.00 | | 3.39 | | 35.10 |
| Castleblayney | | Effluent | 24/02/2012 | C | | | 27.00 | 71.00 | 10.00 | <6 | 1.40 | 13.57 | 18.24 |
| Castleblayney | | Up Stream Of Works | 24/02/2012 | | | | <2 | 21.00 | | <6 | <1 | <1 | <7 |
| Castleblayney | | Down Stream of Works | 24/02/2012 | | | | <2 | 19.00 | | <6 | <1 | <1 | <7 |
| Castleblayney | | Influent | 03/03/2012 | C | | | 375.00 | 1076.00 | 481.00 | | 7.043 | | 57.120 |
| Castleblayney | | Effluent | 03/03/2012 | C | | | 16.00 | 72.00 | 19.00 | 1.244 | 1.775 | 22.870 | 24.750 |
| Castleblayney | | Up Stream Of Works | 03/03/2012 | | | | 9.00 | | | <0.006 | 0.053 | 0.031 | 1.150 |
| Castleblayney | | Down Stream of Works | 03/03/2012 | | | | <2.00 | | | <0.006 | 0.136 | 0.719 | 1.860 |
| Castleblayney | | Influent | | | | | | | | | | | |
| Castleblayney | | Effluent | 10/04/2012 | C | | | <2 | 6.00 | 2.00 | 0.065 | | 18.420 | |
| Castleblayney | | Up Stream Of Works | | | | | | | | | | | |
| Castleblayney | | Down Stream of Works | | | | | | | | | | | |
| Castleblayney | | Influent | | | | | | | | | | | |
| Castleblayney | | Effluent | 19/04/2012 | C | | | 1.60 | 14.00 | 5.00 | 0.148 | 0.273 | 10.040 | 14.980 |
| Castleblayney | | Up Stream Of Works | | | | | | | | | | | |
| Castleblayney | | Down Stream of Works | | | | | | | | | | | |
| Castleblayney | | Influent | | | | | | | | | | | |
| Castleblayney | | Effluent | 23/04/2012 | C | | | 1.90 | | | 0.155 | | 21.660 | |
| Castleblayney | | Up Stream Of Works | | | | | | | | | | | |
| Castleblayney | | Down Stream of Works | | | | | | | | | | | |
| Castleblayney | | Influent | 18/05/2012 | C | | | 185.00 | 923.00 | 326.00 | | 3.989 | | 47.040 |
| Castleblayney | | Effluent | 18/05/2012 | C | | | 4.00 | 33.00 | 4.00 | | 0.159 | 12.930 | 16.410 |
| Castleblayney | | Up Stream Of Works | 18/05/2012 | | | | 2.00 | | 2.00 | <0.006 | <0.007 | 0.152 | 2.730 |
| Castleblayney | | Down Stream of Works | 18/05/2012 | | | | 3.60 | | 12.00 | 0.109 | 0.112 | 0.823 | 3.360 |
| Castleblayney | | Influent | 19/06/2012 | C | | | 305.00 | 792.00 | 338.00 | | 9.116 | | 68.320 |
| Castleblayney | | Effluent | 19/06/2012 | C | | | 1.80 | 17.00 | 4.00 | | 0.299 | 6.060 | 11.400 |
| Castleblayney | | Up Stream Of Works | 19/06/2012 | | | | 1.00 | | | <0.006 | 0.052 | 0.044 | 2.080 |
| Castleblayney | | Down Stream of Works | 19/06/2012 | | | | 2.00 | | | <0.006 | 0.064 | 0.047 | <1.00 |
| Castleblayney | | Influent | 16/07/2012 | C | | | | 343.00 | 244.00 | | 3.656 | | 54.880 |
| Castleblayney | | Effluent | 16/07/2012 | C | | | 1.50 | 22.00 | 3.00 | | 0.178 | | 10.640 |
| Castleblayney | | Up Stream Of Works | 16/07/2012 | | | | 1.50 | | | 0.037 | 0.072 | | <1.00 |
| Castleblayney | | Down Stream of Works | 16/07/2012 | | | | 1.30 | | | 0.029 | 0.136 | | 1.390 |
| Castleblayney | | Influent | 14/08/2012 | C | | | 220.00 | 562.00 | 183.00 | | 3.757 | | 31.920 |
| Castleblayney | | Effluent | 14/08/2012 | C | | | 2.00 | 22.00 | 6.00 | | 1.174 | 12.300 | 15.520 |
| Castleblayney | | Up Stream Of Works | 14/08/2012 | | | | 2.20 | | | 0.020 | 0.073 | 0.110 | 1.250 |
| Castleblayney | | Down Stream of Works | 14/08/2012 | | | | 2.30 | | | 0.036 | 0.084 | 0.233 | 1.940 |
| Castleblayney | | Influent | 05/09/2012 | C | | | 265.00 | 534.00 | 312.00 | | 4.914 | | 46.480 |
| Castleblayney | | Effluent | 05/09/2012 | C | | | 13.00 | 41.00 | 3.00 | | 0.189 | 9.720 | 16.050 |
| Castleblayney | | Up Stream Of Works | 05/09/2012 | | | | 12.00 | | | 0.037 | 0.108 | 0.087 | 2.240 |
| Castleblayney | | Down Stream of Works | 05/09/2012 | | | | 12.00 | | | 0.033 | 0.088 | 0.172 | 2.240 |
| Castleblayney | | Influent | 19/09/2012 | C | | | 190.00 | 506.00 | 160.00 | | 6.904 | | 53.200 |
| Castleblayney | | Effluent | 19/09/2012 | C | | | <2 | 29.00 | 9.00 | | 1.276 | 12.240 | 14.500 |
| Castleblayney | | Up Stream Of Works | 19/09/2012 | | | | 1.00 | | | 0.029 | 0.063 | 0.029 | 1.120 |
| Castleblayney | | Down Stream of Works | 19/09/2012 | | | | 1.10 | | | 0.044 | 0.044 | 0.543 | 1.690 |
| Castleblayney | | Influent | 17/10/2012 | C | | | 49.00 | 245.00 | 103.00 | | 1.902 | | 16.240 |
| Castleblayney | | Effluent | 17/10/2012 | C | | | 0.90 | 22.00 | <2 | | 0.116 | 0.824 | 5.120 |
| Castleblayney | | Up Stream Of Works | 17/10/2012 | | | | 0.80 | | | 0.034 | 0.408 | 0.077 | 1.650 |
| Castleblayney | | Down Stream of Works | 17/10/2012 | | | | 0.80 | | | 0.039 | 0.134 | 0.128 | 1.140 |
| Castleblayney | | Influent | 14/11/2012 | C | | | 235.00 | 2278.00 | 646.00 | | 1.993 | | 40.330 |
| Castleblayney | | Effluent | 14/11/2012 | C | | | <2 | 21.00 | 2.00 | | 0.469 | 3.080 | 9.330 |
| Castleblayney | | Up Stream Of Works | 14/11/2012 | | | | 8.00 | | | 0.017 | 0.105 | 0.055 | 1.170 |
| Castleblayney | | Down Stream of Works | 14/11/2012 | | | | <2 | | | 0.033 | 0.071 | 0.112 | 1.160 |
| Castleblayney | | Influent | 03/12/2012 | C | | | 190.00 | 746.00 | 183.00 | | 1.431 | | 38.080 |
| Castleblayney | | Effluent | 03/12/2012 | C | | | 3.30 | 22.00 | 9.00 | | 0.118 | 0.577 | 7.420 |
| Castleblayney | | Up Stream Of Works | 03/12/2012 | | | | 1.60 | | | 0.014 | 0.053 | 0.075 | 1.280 |
| Castleblayney | | Down Stream of Works | 03/12/2012 | | | | 3.10 | | | <0.006 | 0.033 | 0.012 | 1.220 |

Table 2.1: Castleblayney Effluent monitoring results: Note current ELV's in red text

| NB NOTE** ELV's will change from Jan 1st 2016 to Blue limits: | | | | | | | | | | | | | | |
|---|-------------------|----------|------------------|----------------------|---------------|----------|--|--|---|--|---------------------------------------|---|--------------------------------------|--|
| Location | Daily Flow M3/day | Effluent | Date of Sampling | Sample Type (C or G) | Temp 22°C max | PH 8 - 9 | 10mg/l | 125mg/l | 35mg/l | Ortho Phosphorus mg/l | 0.3mg/l | 0.5mg/l | | |
| | | | | | | | cBOD mg/l 25mg/l | COD mg/l 125mg/l | Suspended Solids mg/l 35mg/l | | Total Phosphorus (as P) mg/l 2mg/l | Ammonia (as N) | Total Nitrogen mg/l (as N) 15mg/l | |
| Castleblayney | 2014 | Effluent | 02/02/2012 | C | | | 22.00 | 58.00 | 12.00 | <2 | | 12.10 | 17.68 | |
| Castleblayney | 1750 | Effluent | 24/02/2012 | C | | | 27.00 | 71.00 | 10.00 | <6 | 1.40 | 13.57 | 18.24 | |
| Castleblayney | 602 | Effluent | 03/03/2012 | C | | | 16.00 | 72.00 | 19.00 | 1.244 | 1.775 | 22.870 | 24.75 | |
| Castleblayney | 1127 | Effluent | 10/04/2012 | C | | | <2 | 6.00 | 2.00 | 0.065 | No lab result | 18.420 | No lab result | |
| Castleblayney | 1587 | Effluent | 19/04/2012 | C | | | 1.60 | 14.00 | 5.00 | 0.148 | 0.273 | 10.040 | 14.98 | |
| Castleblayney | 1445 | Effluent | 18/05/2012 | C | | | 4.00 | 33.00 | 4.00 | | 0.159 | 12.930 | 16.41 | |
| Castleblayney | 2146 | Effluent | 19/06/2012 | C | | | 1.80 | 17.00 | 4.00 | | 0.299 | 6.060 | 11.40 | |
| Castleblayney | 2977 | Effluent | 16/07/2012 | C | | | 1.50 | 22.00 | 3.00 | | 0.178 | | 10.64 | |
| Castleblayney | 1896 | Effluent | 14/08/2012 | C | | | 2.00 | 22.00 | 6.00 | | 1.174 | 12.300 | 15.52 | |
| Castleblayney | 1729 | Effluent | 05/09/2012 | C | | | 13.00 | 41.00 | 3.00 | | 0.189 | 9.720 | 16.05 | |
| Castleblayney | 1726 | Effluent | 19/09/2012 | C | | | <2 | 29.00 | 9.00 | | 1.276 | 12.240 | 14.50 | |
| Castleblayney | 2491 | Effluent | 17/10/2012 | C | | | 0.90 | 22.00 | <2 | | 0.116 | 0.824 | 5.12 | |
| Castleblayney | 3868 | Effluent | 14/11/2012 | C | | | <2 | 21.00 | 2.00 | | 0.469 | 3.080 | 9.33 | |
| Castleblayney | 2701 | Effluent | 03/12/2012 | C | | | 3.30 | 22.00 | 9.00 | | 0.118 | 0.577 | 7.42 | |
| Average | 2004 | | | | | | 7.08 | 32.14 | 6.92 | | 0.62 | 10.36 | 14.00 | |
| Condition 2 Licence: Interpretation | | | | | | | Compliance analysis -13 samples taken - max. no samples that may exceed ELV = 2 no. (Schedule B 3) | | | | | | | |
| Condition 2 Licence: Interpretation | | | | | | | No allowable failures, no deviation allowed | 2 allowable failures provided under 100% of ELV (50mg/l) | 2 allowable failures provided under 100% of ELV (250mg/l) | 2 allowable failures provided under 150% of ELV (87.5mg/l) | | Eight out of ten consecutive samples shall not exceed ELV. No individual result shall exceed ELV by more than 20% = (Total P 2.4mg/l) | | |
| Total Incidents: | | | | | | | 0 | 0 | 0 | | 0 | | | |

Table 2.2 Influent monitoring results

| Location | Inflow M3/day | Location | Date of Sampling | Sample Type (C or G) | Temp | PH | cBOD mg/l | COD mg/l | Suspended Solids mg/l | Ortho Phosphorus/M RP mg/l | Total Phosphorus mg/l (as P) | Ammonia (as N) | Total Nitrogen mg/l (as N) |
|---------------|---------------|----------|------------------|----------------------|------|----|---------------|----------|-----------------------|----------------------------|------------------------------|----------------|----------------------------|
| Castleblayney | | Influent | 24/02/2012 | C | | | 214.00 | 567.00 | 168.00 | | 3.39 | | 35.10 |
| Castleblayney | | Influent | 03/03/2012 | C | | | 375.00 | 1076.00 | 481.00 | | 7.043 | | 57.120 |
| Castleblayney | | Influent | 18/05/2012 | C | | | 185.00 | 923.00 | 326.00 | | 3.989 | | 47.040 |
| Castleblayney | | Influent | 19/06/2012 | C | | | 305.00 | 792.00 | 338.00 | | 9.116 | | 68.320 |
| Castleblayney | | Influent | 16/07/2012 | C | | | No lab result | 343.00 | 244.00 | | 3.656 | | 54.880 |
| Castleblayney | | Influent | 14/08/2012 | C | | | 220.00 | 562.00 | 183.00 | | 3.757 | | 31.920 |
| Castleblayney | | Influent | 05/09/2012 | C | | | 265.00 | 534.00 | 312.00 | | 4.914 | | 46.480 |
| Castleblayney | | Influent | 19/09/2012 | C | | | 190.00 | 506.00 | 160.00 | | 6.904 | | 53.200 |
| Castleblayney | | Influent | 17/10/2012 | C | | | 49.00 | 245.00 | 103.00 | | 1.902 | | 16.240 |
| Castleblayney | | Influent | 14/11/2012 | C | | | 235.00 | 2278.00 | 646.00 | | 1.993 | | 40.330 |
| Castleblayney | | Influent | 03/12/2012 | C | | | 190.00 | 746.00 | 183.00 | | 1.431 | | 38.080 |
| Average | | | | | | | 222.80 | 779.27 | 285.82 | | 4.37 | | 44.43 |

Table 2.3
Upstream monitoring results

| Location | Out Flow M3/day | Location | Date of Sampling | Sample Type (C or G) | Temp | PH | cBOD mg/l | COD mg/l | Suspended Solids mg/l | Ortho Phosphorus/MP mg/l | Total Phosphorus mg/l (as P) | Ammonia (as N) | Total Nitrogen mg/l (as N) |
|---------------|-----------------|--------------------|------------------|----------------------|------|----|-----------|----------|-----------------------|--------------------------|------------------------------|----------------|----------------------------|
| Castleblayney | | Up Stream Of Works | 02/02/2012 | G | | | 2.00 | | | <0.5 | 0.08 | <0.1 | <7 |
| Castleblayney | | Up Stream Of Works | 24/02/2012 | G | | | <2 | 21.00 | | <6 | <1 | <1 | <7 |
| Castleblayney | | Up Stream Of Works | 03/03/2012 | G | | | 9.00 | | | <0.006 | 0.053 | 0.031 | 1.150 |
| Castleblayney | | Up Stream Of Works | 18/05/2012 | G | | | 2.00 | | 2.00 | <0.006 | <0.007 | 0.152 | 2.730 |
| Castleblayney | | Up Stream Of Works | 19/06/2012 | G | | | 1.00 | | | <0.006 | 0.052 | 0.044 | 2.080 |
| Castleblayney | | Up Stream Of Works | 16/07/2012 | G | | | 1.50 | | | 0.037 | 0.072 | No Lab result | <1.00 |
| Castleblayney | | Up Stream Of Works | 14/08/2012 | G | | | 2.20 | | | 0.020 | 0.073 | 0.110 | 1.250 |
| Castleblayney | | Up Stream Of Works | 05/09/2012 | G | | | 12.00 | | | 0.037 | 0.108 | 0.087 | 2.240 |
| Castleblayney | | Up Stream Of Works | 19/09/2012 | G | | | 1.00 | | | 0.029 | 0.063 | 0.029 | 1.120 |
| Castleblayney | | Up Stream Of Works | 17/10/2012 | G | | | 0.80 | | | 0.034 | 0.408 | 0.077 | 1.650 |
| Castleblayney | | Up Stream Of Works | 14/11/2012 | G | | | 8.00 | | | 0.017 | 0.105 | 0.055 | 1.170 |
| Castleblayney | | Up Stream Of Works | 03/12/2012 | G | | | 1.60 | | | 0.014 | 0.053 | 0.075 | 1.260 |
| Average | | | | | | | 3.92 | | | 0.021 | | 0.166 | |

Table 2.4
Downstream monitoring results

| Location | Out Flow M3/day | Location | Date of Sampling | Sample Type (C or G) | Temp | PH | cBOD mg/l | COD mg/l | Suspended Solids mg/l | Ortho Phosphorus/MP mg/l | Total Phosphorus mg/l (as P) | Ammonia (as N) | Total Nitrogen mg/l (as N) |
|---------------|-----------------|----------------------|------------------|----------------------|------|----|-----------|----------|-----------------------|--------------------------|------------------------------|----------------|----------------------------|
| Castleblayney | | Down Stream of Works | 02/02/2012 | G | | | <2 | | | <0.5 | 0.15 | <0.1 | <7 |
| Castleblayney | | Down Stream of Works | 24/02/2012 | G | | | <2 | 19.00 | | <6 | <1 | <1 | <7 |
| Castleblayney | | Down Stream of Works | 03/03/2012 | G | | | <2.00 | | | <0.006 | 0.136 | 0.719 | 1.860 |
| Castleblayney | | Down Stream of Works | 18/05/2012 | G | | | 3.60 | | 12.00 | 0.109 | 0.112 | 0.823 | 3.360 |
| Castleblayney | | Down Stream of Works | 19/06/2012 | G | | | 2.00 | | | <0.006 | 0.064 | 0.047 | <1.00 |
| Castleblayney | | Down Stream of Works | 16/07/2012 | G | | | 1.30 | | | 0.029 | 0.136 | No Lab result | 1.390 |
| Castleblayney | | Down Stream of Works | 14/08/2012 | G | | | 2.30 | | | 0.036 | 0.084 | 0.233 | 1.940 |
| Castleblayney | | Down Stream of Works | 05/09/2012 | G | | | 12.00 | | | 0.033 | 0.088 | 0.172 | 2.240 |
| Castleblayney | | Down Stream of Works | 19/09/2012 | G | | | 1.10 | | | 0.044 | 0.044 | 0.543 | 1.690 |
| Castleblayney | | Down Stream of Works | 17/10/2012 | G | | | 0.80 | | | 0.039 | 0.134 | 0.128 | 1.140 |
| Castleblayney | | Down Stream of Works | 14/11/2012 | G | | | <2 | | | 0.033 | 0.071 | 0.112 | 1.160 |
| Castleblayney | | Down Stream of Works | 03/12/2012 | G | | | 3.10 | | | <0.006 | 0.033 | 0.012 | 1.220 |
| Average | | | | | | | 2.85 | | | 0.031 | | 0.344 | |

Appendix 2

Pollutant Release and transfer Register

Excel calculation toolset

Flow Weighted Mass emissions calculations

Environmental Liabilities Risk Assessment

Priority Substance Assessment report

Storm water and Emergency overflow report



Environmental Protection Agency

| PRTR# : D0205 | Facility Name : Castleblayney Waste Water Treatment Plant |
 Filename : D0205_2012.xls | Return Year : 2012 |

[Guidance to completing the PRTR workbook](#)

AER Returns Workbook

Version 1.1.15

| | |
|-----------------------|------|
| REFERENCE YEAR | 2012 |
|-----------------------|------|

1. FACILITY IDENTIFICATION

| | |
|----------------------------|---|
| Parent Company Name | Monaghan County Council |
| Facility Name | Castleblayney Waste Water Treatment Plant |
| PRTR Identification Number | D0205 |
| Licence Number | D0205-01 |

Waste or IPPC Classes of Activity

| No. | class_name |
|------|------------|
| 30.4 | General |

| | |
|---|-------------------------|
| Address 1 | County Offices |
| Address 2 | The Glen |
| Address 3 | County Monaghan |
| Address 4 | |
| | Monaghan |
| Country | Ireland |
| Coordinates of Location | -6.73173 54.1218 |
| River Basin District | GBNIIENB |
| NACE Code | 3700 |
| Main Economic Activity | Sewerage |
| AER Returns Contact Name | Siobhan Mallon |
| AER Returns Contact Email Address | smallon@monaghancoco.ie |
| AER Returns Contact Position | A. Engineer |
| AER Returns Contact Telephone Number | 047 30574 |
| AER Returns Contact Mobile Phone Number | 087 6679454 |
| AER Returns Contact Fax Number | 047 82739 |
| Production Volume | 731538.0 |
| Production Volume Units | m3/day |
| Number of Installations | 1 |
| Number of Operating Hours in Year | 8736 |
| Number of Employees | 1 |
| User Feedback/Comments | |
| Web Address | |

2. PRTR CLASS ACTIVITIES

| Activity Number | Activity Name |
|-----------------|------------------------------------|
| 5(f) | Urban waste-water treatment plants |

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

| | |
|---|----|
| Is it applicable? | No |
| Have you been granted an exemption ? | |
| If applicable which activity class applies (as per Schedule 2 of the regulations) ? | |
| Is the reduction scheme compliance route being used ? | |

4. WASTE IMPORTED/ACCEPTED ONTO SITE

[Guidance on waste imported/accepted onto site](#)

| | |
|--|--|
| Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ? | |
|--|--|

Link to previous years emissions data

| PRTR# : D0205 | Facility Name : Castleblayney Waste Water Treatment Plant | Filename : D0205_2012.xls | Return Year : 2012 |

19/2/2013 16:40

4.1 RELEASES TO AIR

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

| No. Annex II | POLLUTANT | Name | M/C/E | Method Code | Method Used Designation or Description | Please enter all quantities in this section in KGs | | | |
|--------------|--|------|-------|-------------|---|--|-------------------|------------------------|----------------------|
| | | | | | | Emission Point 1 | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| 01 | Methane (CH4) | | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 02 | Carbon monoxide (CO) | | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 03 | Carbon dioxide (CO2) | | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 133828.0 | 133828.0 | 0.0 | 133828.0 |
| 05 | Nitrous oxide (N2O) | | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0.0 | 1.0 | 0.0 | 1.0 |
| 07 | Non-methane volatile organic compounds (NMVOC) | | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 08 | Nitrogen oxides (NOx/NO2) | | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | Sulphur oxides (SOx/SO2) | | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0.0 | 0.0 | 0.0 | 0.0 |

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

| No. Annex II | POLLUTANT | Name | M/C/E | Method Code | Method Used Designation or Description | Please enter all quantities in this section in KGs | | | |
|--------------|-----------|------|-------|-------------|---|--|-------------------|------------------------|----------------------|
| | | | | | | Emission Point 1 | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| | | | | | | 0.0 | 0.0 | 0.0 | 0.0 |

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

| Pollutant No. | POLLUTANT | Name | M/C/E | Method Code | Method Used Designation or Description | Please enter all quantities in this section in KGs | | | |
|---------------|-----------|------|-------|-------------|---|--|-------------------|------------------------|----------------------|
| | | | | | | Emission Point 1 | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| | | | | | | 0.0 | 0.0 | 0.0 | 0.0 |

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T (Total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

| Landfill: | Please enter summary data on the quantities of methane flared and / or utilised | T (Total) kg/Year | M/C/E | Method Used | | Facility Total Capacity m3 per hour |
|--|---|-------------------|-------|-------------|----------------------------|-------------------------------------|
| | | | | Method Code | Designation or Description | |
| Castleblayney Waste Water Treatment Plant | | 0.0 | | | | N/A |
| Total estimated methane generation (as per site model) | | 0.0 | | | | 0.0 (Total Flaring Capacity) |
| Methane flared | | 0.0 | | | | 0.0 (Total Utilising Capacity) |
| Methane utilised in engine/s | | 0.0 | | | | |
| Net methane emission (as reported in Section A above) | | 0.0 | | | | N/A |

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

FRTR# : D005 | Facility Name : Castleblayney Waste Water Treatment Plant | Filename : D005_2012.xls | Return Year : 2012

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of atmospheric water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this is

| POLLUTANT | | RELEASES TO WATERS | | | Please enter all quantities in this section in KGs | | | |
|--------------|---|--------------------|-------------|---------------------------------------|--|-------------------|------------------------|----------------------|
| No. Annex II | Name | M/C/E | Method Code | Method Used | Emission Point 1 | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| 34 | 1,2-dichloroethane (EDC) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 25 | Aldrich | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 26 | Aldein | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 61 | Altrazone | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.002 | 0.002 | 0.0 |
| 37 | Aromatic amines compounds (as As) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.256 | 0.256 | 0.0 |
| 27 | Azoxin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.008 | 0.008 | 0.0 |
| 63 | Benzene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.012 | 0.012 | 0.0 |
| 61 | Benzyl hydroperoxide | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.001 | 0.001 | 0.0 |
| 63 | Brominated diphenylethers (BDE) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 15 | Calcium and compounds (as Ca) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.037 | 0.037 | 0.0 |
| 23 | Chlordane | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 23 | Chlordane | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 30 | Chlorobenzene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 79 | Chlorides (as Cl) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 62096.636 | 62096.636 | 0.0 | 1.944 |
| 31 | Chloroalkanes (C15-C13) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.154 | 0.154 | 0.0 |
| 32 | Chloroalkenes | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 19 | Chromium and compounds (as Cr) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.213 | 0.213 | 0.0 |
| 23 | Copper and compounds (as Cu) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 2.256 | 2.256 | 0.0 |
| 67 | Cyanides (as total Cn) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 2.145 | 2.145 | 0.0 |
| 33 | DOT | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 72 | Di-(2-ethyl hexyl) phthalate (DEHP) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.671 | 0.671 | 0.0 |
| 95 | Dichloromethane (DCM) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.033 | 0.033 | 0.0 |
| 25 | Dieldrin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 37 | Dioxin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.019 | 0.019 | 0.0 |
| 33 | Endosulphan | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 39 | Endrin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 65 | Ethyl benzene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.012 | 0.012 | 0.0 |
| 66 | Fluorethene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.002 | 0.002 | 0.0 |
| 63 | Fluorides (as total F) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 176.941 | 176.948 | 0.0 | 0.007 |
| 40 | Halogenated organic compounds (as AOX) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 1.745 | 1.745 | 0.0 |
| 41 | Heptachlor | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 30 | Hexabromobiphenyl | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 42 | Hexachlorobenzene (HCB) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 43 | Hexachlorocyclopentadiene (HCCD) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 69 | Isodrin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 67 | Isoctalin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.005 | 0.005 | 0.0 |
| 23 | Lead and compounds (as Pb) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 2.223 | 2.223 | 0.0 |
| 45 | Lindane | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 21 | Mercury and compounds (as Hg) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 46 | Mirex | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 66 | Napthalene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.003 | 0.003 | 0.0 |
| 22 | Nickel and compounds (as Ni) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 3.115 | 3.115 | 0.0 |
| 64 | Nonylphenol and Nonylphenol ethoxylates (NPN/NE) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.061 | 0.061 | 0.0 |
| 67 | Octylphenols and Octylphenol ethoxylates | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 69 | Organotin compounds (as total Sn) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 43 | Pentachlorobenzene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 43 | Perchlorophenol (PCP) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 71 | Phenols (as total O) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.668 | 0.668 | 0.0 |
| 60 | Polychlorinated biphenyls (PCBs) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 72 | Polycyclic aromatic hydrocarbons (PAHs) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.007 | 0.007 | 0.0 |
| 61 | Simazine | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.01 | 0.01 | 0.0 |
| 62 | Tetrachloroethylene (PER) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.043 | 0.043 | 0.0 |
| 63 | Tetrachloroethane (TCM) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 73 | Toluene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.361 | 0.361 | 0.0 |
| 12 | Total nitrogen | M | OTH | SOP 151 by automated element analyser | 10241.532 | 10242.236 | 0.0 | 0.704 |
| 76 | Total organic carbon (TOC) (as total C or COD _{Cr}) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 6744.614 | 6745.007 | 0.0 | 0.393 |
| 13 | Total phosphorus | M | OTH | SOP 168 by automated element analyser | 453.554 | 453.683 | 0.0 | 0.129 |
| 69 | Toxaphene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 76 | Triastin and compounds | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 64 | Trichlorobenzenes (TCB) (isomers) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 67 | Trichloroethylene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 77 | Tributyltin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 76 | Triphenyltin and compounds | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 60 | Vinyl chloride | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 75 | Xylenes | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.065 | 0.065 | 0.0 |
| 23 | Zinc and compounds (as Zn) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 36.111 | 36.115 | 0.0 |

* Select a row by double clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

| POLLUTANT | | RELEASES TO WATERS | | | Please enter all quantities in this section in KGs | | | |
|--------------|------|--------------------|-------------|-------------|--|-------------------|------------------------|----------------------|
| No. Annex II | Name | M/C/E | Method Code | Method Used | Emission Point 1 | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| | | | | | | 0.0 | 0.0 | 0.0 |

* Select a row by double clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

| POLLUTANT | | RELEASES TO WATERS | | | Please enter all quantities in this section in KGs | | | |
|--------------|------|--------------------|-------------|-------------|--|-------------------|------------------------|----------------------|
| No. Annex II | Name | M/C/E | Method Code | Method Used | Emission Point 1 | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| | | | | | | | | |

| Pollutant No | Name | M/C/E | Method Code | Dispersion or Detection | Emission Point 1 | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
|--------------|---|-------|-------------|--|------------------|-------------------|------------------------|----------------------|
| 970 | Selenium | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.32 | 0.32 | 0.0 |
| 975 | Ammony (as S ₂) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.113 | 0.113 | 0.0 |
| 988 | Molybdenum | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 989 | Tin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.079 | 0.079 | 0.0 |
| 973 | Barium | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 13.54 | 13.541 | 0.0 |
| 974 | Boron | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 45.995 | 45.999 | 0.0 |
| 966 | Cobalt | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.129 | 0.129 | 0.0 |
| 959 | Vanadium | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 1.995 | 1.995 | 0.0 |
| 988 | Dichloride | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.003 | 0.003 | 0.0 |
| 983 | Uranium | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 906 | Manganese Total | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.078 | 0.078 | 0.0 |
| 993 | 2,4-Dichloropheno (2,4-D) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.037 | 0.037 | 0.0 |
| 934 | MOPA | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.065 | 0.065 | 0.0 |
| 932 | Cyphosate | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 1.121 | 1.121 | 0.0 |
| 909 | Benzofluranthene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.001 | 0.001 | 0.0 |
| 910 | Benzofluoranthene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.001 | 0.001 | 0.0 |
| 991 | Benzofluoranthene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.001 | 0.001 | 0.0 |
| 972 | Indeno[1,2,3-c]pyrene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.002 | 0.002 | 0.0 |
| 993 | Carbon tetrachloride | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 914 | 2,6-Dichlorobenzamide | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.059 | 0.059 | 0.0 |
| 995 | Dieldrin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 999 | Hexachlorocyclopentadiene (HBCD) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 997 | PFOS | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 934 | Ammonia (as N) | M | OTH | SQP 114 by automated discrete analyser | | 7578.734 | 7578.734 | 0.0 |
| 903 | BOD | M | OTH | SQP 113 | | 5179.259 | 5179.259 | 0.0 |
| 906 | COD | M | OTH | SQP 107 | | 23511.631 | 23511.631 | 0.0 |
| 992 | Nitrate Nitrogen | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 927 | Nitrate (as N) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 972 | Nitrite (as N) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 971 | Ortho-phosphate (as P ₂ O ₄) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | | 0.0 | 0.0 | 0.0 |
| 923 | Suspended Solids | M | OTH | SQP 106 by gravimetry | | 5062.243 | 5062.243 | 0.0 |

* Select a row by double clicking on the Pollutant Name (Column B) then click the delete button

4.3 RELEASES TO WASTEWATER OR SEWER

SECTION A : PRTR POLLUTANTS

| OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER | | METHOD | | QUANTITY | | |
|--|-------|-------------|---|-------------------|------------------------|----------------------|
| POLLUTANT | M/C/E | Method Code | Method Used Designation or Description | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| No. Annex II | | | | 0.0 | 0.0 | 0.0 |

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

| OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER | | METHOD | | QUANTITY | | |
|--|-------|-------------|---|-------------------|------------------------|----------------------|
| POLLUTANT | M/C/E | Method Code | Method Used Designation or Description | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| Pollutant No. | | | | 0.0 | 0.0 | 0.0 |

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.4 RELEASES TO LAND

[Link to previous years emissions data](#)

| PRTR# : D0205 | Facility Name : Castlleyblayney Waste Water Treatment Plant | Filename : D0205_2012.xls | Return Year : 2012 |

19/02/2013 16:42

SECTION A : PRTR POLLUTANTS

| POLLUTANT | | M/C/E | | METHOD | | Emission Point 1 | | T (Total) KG/Year | | A (Accidental) KG/Year | |
|---|------|-------|--|-------------|----------------------------|------------------|--|-------------------|--|------------------------|-----|
| No. Annex II | Name | | | Method Used | Designation or Description | | | | | | |
| Please enter all quantities in this section in KGs | | | | | | | | | | | |
| | | | | | | | | 0.0 | | 0.0 | 0.0 |

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

| POLLUTANT | | M/C/E | | METHOD | | Emission Point 1 | | T (Total) KG/Year | | A (Accidental) KG/Year | |
|---|------|-------|--|-------------|----------------------------|------------------|--|-------------------|--|------------------------|-----|
| Pollutant No. | Name | | | Method Used | Designation or Description | | | | | | |
| Please enter all quantities in this section in KGs | | | | | | | | | | | |
| | | | | | | | | 0.0 | | 0.0 | 0.0 |

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

10/02/2013 10:42

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE | PRTR# : D0205 | Facility Name : Castleblayney Waste Water Treatment Plant | Filename : D0205_2012.xls | Return Year : 2012 |

Please enter all quantities on this sheet in Tonnes

| Transfer Destination | European Waste Code | Hazardous | Quantity (Tonnes per Year) | Description of Waste | Waste Treatment Operation | Method Used | | Location of Treatment | Lic.Waste: Name and Licence/Permit No of Next Destination Facility Lic.Waste: Name and Licence/Permit No of Recover/Disposer | Haz.Waste: Address of Next Destination Facility Non-Lic.Waste: Address of Recover/Disposer | Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY) | Actual Address of Final Destination (i.e. Final Recoverer / Disposal Site) (HAZARDOUS WASTE ONLY) |
|----------------------|---------------------|-----------|----------------------------|--|---------------------------|-------------|-------------|-----------------------|---|---|--|---|
| | | | | | | M/C/E | Method Used | | | | | |
| Within the Country | 19 08 01 | No | 12.48 | screenings sludges from treatment of urban waste | D5 | M | Weighted | Offsite in Ireland | Euromex Ltd. T/A McElvaney's Waste & Recycling, WCP/MH/2005/8 | Corcaghan, Co. Monaghan, Ireland | | |
| Within the Country | 19 08 05 | No | 932.48 | water | R10 | M | Weighted | Offsite in Ireland | BiCore Environmental Ltd. WCP/DO/11/1342/01 | Clarty House, Belgard Road, Tullaght, Dublin 24, Ireland | | |

* Select a row by double-clicking the Description of Waste then click the delete button

Air Emission - Inputs



CELL COLOUR KEY

- INPUT - type in your facility value in cell
- OUTPUT - automatically generated cell value

RELEASES TO AIR

Air: Emissions from WWTP Works

Data Entry Table: Characteristics of the WWTP

For use where no data from on-site monitoring of air emissions from the plant are available.
Nitrous Oxide (N2O) calculated directly for actual p.e. data

For information only: Calculated Values (see Calculations Worksheet)

1 Loadings and Works

| A Facility Loadings Data for Reporting Year | Value | |
|---|---------|--|
| Total p.e. served | 11,133 | Enter Actual Population Equivalent of catchment |
| Design p.e. | 12,950 | Enter Design Population Equivalent of facility |
| Total Influent BOD kg/annum (measured) | 162,697 | Enter total annual quantity, NB note units: kg/annum |
| Total Sludge removed off-site kg Dry Matter / annum | 139,672 | Enter total annual quantity, NB note units: kg/annum |
| Total Sludge digested on-site kg Dry Matter / annum | 0 | Enter total annual quantity, NB note units: kg/annum |

| | |
|--------------------|--|
| TOW kg BOD / annum | TOW = "Total Organically biodegradable material in domestic (=municipal) Wastewater" |
| 243,960 | Total p.e. served TOW equivalent |
| 284,018 | Design p.e. TOW equivalent |
| 7,437 | Quality check: p.e. of Influent BOD kg/annum |
| 55,949 | BOD content of sludge removed kg/annum |
| 0 | BOD content of sludge digested kg/annum |
| 107,038 | Residual BOD net of sludge removed/digested kg/annum |

B Characteristics of the Works

| B1 Aerobic plant | Status | |
|---|--------|---|
| Does the aerobic section of the plant contain dissolved oxygen? | Y | Y/N (default is "Y") Methane Conversion factor for the aerobic plant will be determined by this answer |
| All tanks covered and extracted to on-site flare? | N | Y/N (default is "N") Releases will be reported as "Fugitive" |
| % of Headspace biogas utilised on site (0 - 100) | 0 | Only required if Headspace extraction on site; Calculate by % operation of engine. Default assumption is Zero utilisation |
| % of Headspace biogas flared (0 - 100) | 0 | Only required if Headspace extraction on site; Calculate by % operation of flare. Default assumption is Zero flaring |
| Total % biogas utilised or flared onsite | | |
| B2 Onsite Anaerobic Digestion for sludge treatment | | |
| Anaerobic digestion on site? | N | Y/N (default is "N") Releases will be reported as "Emission Point 1" |
| % of Digester biogas utilised on site (0 - 100) | 0 | Only required if Anaerobic digestion on site; Calculate by % operation of engine. Default assumption is Zero utilisation |
| % of Digester biogas flared (0 - 100) | 0 | Only required if Anaerobic digestion on site; Calculate by % operation of flare. Default assumption is Zero flaring |
| Total % biogas utilised or flared onsite | | |

2 Estimated Fuel use at the UWWTP

| | | | |
|--------------------------------------|---|---------------|---|
| Diesel Usage Tonnes/annum | 0 | Tonne / annum | Releases will be reported as "Fugitive" |
| Total Diesel Use on site in the year | | | |

| | PRTR No. Annex II | Name | ESTIMATED QUANTITIES | | | |
|---|-------------------|--|----------------------|-------------------|------------------------|----------------------|
| | | | Emission Point 1 | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| The output data is presented on this worksheet in the precise format for transfer directly into the "Releases to Air" Worksheet of your AER/PRTR Emissions Reporting Workbook | 1 | Methane (CH4) | 0 | 0 | 0 | 0 |
| | 2 | Carbon Monoxide (CO) | 0 | 0 | 0 | 0 |
| | 3 | Carbon Dioxide (CO2) | 0 | 133,828 | 0 | 133,828 |
| | 5 | Nitrous oxide (N2O) | | 1 | 0 | 1 |
| | 7 | Non-methane volatile organic compounds (NMVOC) | | 0 | 0 | 0 |
| | 8 | Nitrogen oxides (NOx/NO2) | 0 | 0 | 0 | 0 |
| | 11 | Sulphur oxides (SOx/SO2) | | 0 | 0 | 0 |

Wastewater Treatment Data Input



CELL COLOUR KEY:

- INPUT - Select value from drop down list
- INPUT - type in your facility value in cell
- OUTPUT - automatically generated cell value

| | |
|------------------|---|
| Facility Name | Castleblayney Waste Water Treatment Works |
| Address | Muckno Street, Castleblayney, Co. Monaghan. |
| Reporting Year | 2012 |
| Licence Reg. No. | D0205 |

← Enter Facility Details

| | |
|-----------------------|---|
| P.E. (Actual Treated) | 10000 - 50000 p.e. |
| Saline Intrusion | No saline intrusion |
| Type of Treatment | Secondary Treatment - Activated Sludge |
| Nutrient Removal | Phosphorus Removal Only - Biological/Chemical/Wetland |

← These parameters are required to generate estimated PRTR mass emission values. Click on the cell and select from the drop down menu. Refer to the Definitions below for further information.

| | |
|---|-----------------------------------|
| Please enter Total Annual Flow (m ³ /annum): | |
| Treated (Predominant/Main Emission): | 731538 m ³ /annum |
| Fugitive Emissions: | 30 m ³ /annum |
| TOTAL: | 731568 m³/annum |

← Final effluent volume released via the main emission point

← Additional estimated volume released in storm bypasses

Definition of Input Requirements

P.E. (Actual Treated): P.E. (population equivalent) is a measurement of the average organic biodegradable load received daily at the treatment plant. A population equivalent of 1 (1 p.e.) means the organic biodegradable load having a five-day biochemical oxygen demand (BOD5) of 60g of oxygen per day. Select a P.E. band (<10,000 p.e., 10,000 - 50,000 p.e., >50,000 p.e.) into which the actual operating P.E. of the treatment plant falls. (Please note: the operating P.E. is based on the existing population served and not the design population size of the UWWTP).

Saline Intrusion: Identify whether saline intrusion is known to occur within the sewage network serving the treatment plant. This will be the case for some coastally located UWWTPs.

Type of Treatment: Identify the type of treatment provided at the plant. Treatment options are "No Treatment", "Primary Treatment Only", "Secondary Treatment - Activated Sludge", "Secondary Treatment - Attached Growth", "Tertiary Treatment - Filtration", and "Tertiary Treatment - Disinfection".

Nutrient Removal: Identify whether nutrient removal is employed at the treatment plant. Nutrient removal options are "Phosphorus Removal Only - Biological/Chemical/Wetland", "Nitrogen Removal Only", "Phosphorous and Nitrogen Removal", and "No Nutrient Removal".

Measured Values



CELL COLOUR
 INPUT - type in your facility value in cell
 OUTPUT - automatically generated cell value

Enter all measured values in this sheet

Note: If you do not have measured values then LEAVE THE CELL BLANK

Measured values reported in this worksheet should be the average concentration of the pollutant measured over the previous reporting year. Measured values should be used when they are available rather than estimated values from the Toolset. Measured values relate to parameters that are analysed in a laboratory. Please enter the measured values to the orange cells in mg/l for the year.

Note: the unit of measurement must be in mg/l for all parameters entered on this sheet.

Where measured values are reported, the Method Code must be indicated in the "Method of Measurement" column. The method code used shall be in accordance with the internationally approved measurement methods - please refer to the UWW PRTR Electronic Toolset Guidance Document on the EPA website. The method description should also be provided as indicated below.

Note: Wastewater licensed pollutants such as BOD and COD, Ortho- P are included at the bottom of this sheet - please enter annual measured data in mg/l for these.

Method Codes

| | | | |
|--|------------------------------|---------------------|--|
| ISO/CEN Standard - If the laboratory is working to an ISO/CEN standard that is on the approved list of standards, you should use this as the method code. Example for Total Nitrogen is EN ISO 11905-1:1998. Leave the Description Field Blank in the PRTR Workbook. | Example for Total Nitrogen | EN ISO 11905-1:1998 | Method Description: Blank |
| OTH - If the method you are using is not an ISO/CEN standard or does not fall under any of the other method codes then use OTH. This method code would apply when using methods from the Standard Methods for the Analysis of Water and Wastewater series or when using a Hach Spectrophotometric Method for Total Nitrogen, for example. Use the method code OTH and please put a description of the method in the method description field in the PRTR Emissions Reporting Workbook. | Example for Total Phosphorus | OTH | Method Description: Standard Methods for the Analysis of Water and Wastewater - Total P Analysis |

UWWT Facility Details: 10000 - 50000 p.e., No saline intrusion, Secondary Treatment - Activated Sludge, Phosphorus Removal Only - Biological/Chemical/Wetland

Enter your measured values in these two columns

Double-click the cells below to select the method code

Enter your method description in this column

PRTR Substances:

| PRTR Nr. | CAS No. | Parameter | Treated Effluent Concentration (mg/l) | Fugitive Emission Concentration (mg/l) | Treated Effluent Mass emission (kg/annum) | Fugitive Emission Mass emission (kg/annum) | Method of Measurement (Method Code) | Method Description (Analytical Method) |
|----------|------------|---|---------------------------------------|--|---|--|-------------------------------------|--|
| 12 | | Total nitrogen (as N) | 14.000 | | 10241.532 | 0.000 | OTH | 51 by automated discrete analyser |
| 13 | | Total phosphorus (as P) | 0.620 | | 453.554 | 0.000 | OTH | 56 by automated discrete analyser |
| 76 | | Total organic carbon | | | 0.000 | 0.000 | | |
| 79 | | Chlorides (as total Cl) | | | 0.000 | 0.000 | | |
| 82 | | Cyanides (as total CN) | | | 0.000 | 0.000 | | |
| 83 | | Fluorides (as total F) | | | 0.000 | 0.000 | | |
| 17 | | Arsenic and compounds (as As) | | | 0.000 | 0.000 | | |
| 18 | | Cadmium and compounds (as Cd) | | | 0.000 | 0.000 | | |
| 19 | | Chromium and compounds (as Cr) | | | 0.000 | 0.000 | | |
| 20 | | Copper and compounds (as Cu) | | | 0.000 | 0.000 | | |
| 21 | | Mercury and compounds (as Hg) | | | 0.000 | 0.000 | | |
| 22 | | Nickel and compounds (as Ni) | | | 0.000 | 0.000 | | |
| 23 | | Lead and compounds (as Pb) | | | 0.000 | 0.000 | | |
| 24 | | Zinc and compounds (as Zn) | | | 0.000 | 0.000 | | |
| 31 | 65535-84-8 | Chloroalkanes (C10-C13) | | | 0.000 | 0.000 | | |
| 25 | 15972-60-8 | Alachlor | | | 0.000 | 0.000 | | |
| 26 | 309-00-2 | Aldrin | | | 0.000 | 0.000 | | |
| 36 | 60-57-1 | Dieldrin | | | 0.000 | 0.000 | | |
| 39 | 72-20-8 | Endrin | | | 0.000 | 0.000 | | |
| 41 | 76-44-8 | Heptachlor | | | 0.000 | 0.000 | | |
| 28 | 57-74-9 | Chlordane | | | 0.000 | 0.000 | | |
| 29 | 143-50-0 | Chlordecone | | | 0.000 | 0.000 | | |
| 43 | 2385-85-5 | Mirex | | | 0.000 | 0.000 | | |
| 38 | 115-29-7 | Endosulphan | | | 0.000 | 0.000 | | |
| 45 | 58-83-9 | Lindane (1,2,3,4,5,6-hexachlorocyclohexane) | | | 0.000 | 0.000 | | |
| 89 | 465-73-6 | Isodrin | | | 0.000 | 0.000 | | |
| 33 | 50-29-3 | DDT - sum of all isomers | | | 0.000 | 0.000 | | |
| 77 | 1582-09-8 | Trifluralin | | | 0.000 | 0.000 | | |
| 42 | 118-74-1 | Hexachlorobenzene (HCB) | | | 0.000 | 0.000 | | |
| 43 | 87-68-3 | Hexachlorobutadiene (HCBd) | | | 0.000 | 0.000 | | |
| 30 | 470-90-6 | Chlorfenvinphos | | | 0.000 | 0.000 | | |
| 32 | 2921-63-2 | Chlorpyrifos | | | 0.000 | 0.000 | | |
| 27 | 1912-24-9 | Atrazine | | | 0.000 | 0.000 | | |
| 51 | 122-34-9 | Simazine | | | 0.000 | 0.000 | | |
| 37 | 330-54-1 | Diuron | | | 0.000 | 0.000 | | |
| 67 | 34123-59-6 | Isoproturon | | | 0.000 | 0.000 | | |
| 75 | | Triphenyltin | | | 0.000 | 0.000 | | |
| 69 | | Organotin | | | 0.000 | 0.000 | | |
| 74 | | Tributyltin | | | 0.000 | 0.000 | | |
| 72 | | PAH, Total | | | 0.000 | 0.000 | | |
| 91 | 191-24-2 | Benz[a]p]estylene | | | 0.000 | 0.000 | | |
| 61 | 120-12-7 | Anthracene | | | 0.000 | 0.000 | | |

| | | | | | | | | |
|----|------------|---|--|--|-------|-------|--|--|
| 68 | 91-20-3 | Naphthalene | | | 0.000 | 0.000 | | |
| 68 | 209-44-0 | Fluoranthene | | | 0.000 | 0.000 | | |
| 60 | 1336-96-3 | Polychlorinated biphenyls (PCBs) - sum of 11 congeners | | | 0.000 | 0.000 | | |
| 40 | | Halogenated organic compounds (as AOX) | | | 0.000 | 0.000 | | |
| 52 | 127-18-4 | Tetrachloroethylene (PER) | | | 0.000 | 0.000 | | |
| 53 | 56-23-5 | Tetrachloromethane (TCM) | | | 0.000 | 0.000 | | |
| 57 | 79-01-6 | Trichloroethylene | | | 0.000 | 0.000 | | |
| 60 | 75-01-4 | Vinyl chloride | | | 0.000 | 0.000 | | |
| 34 | 107-06-2 | 1,2-dichloroethane (EDC) | | | 0.000 | 0.000 | | |
| 35 | 75-09-2 | Dichloromethane (DCM) | | | 0.000 | 0.000 | | |
| 71 | 108-95-2 | Phenols (as total C) | | | 0.000 | 0.000 | | |
| 87 | 1606-26-4 | Octylphenols and Octylphenol Ethoxylates | | | 0.000 | 0.000 | | |
| 64 | | Nonylphenol and Nonylphenol ethoxylates (NP/NPEs) | | | 0.000 | 0.000 | | |
| 64 | 12002-43-1 | Trichlorobenzenes (TCBs) (all isomers) | | | 0.000 | 0.000 | | |
| 49 | 87-86-5 | Pentachlorophenol (PCP) | | | 0.000 | 0.000 | | |
| 43 | 608-93-5 | Pentachlorobenzene | | | 0.000 | 0.000 | | |
| 62 | 71-43-2 | Benzene as BTEX | | | 0.000 | 0.000 | | |
| 73 | 108-68-3 | Toluene as BTEX | | | 0.000 | 0.000 | | |
| 78 | 1330-20-7 | Xylenes (total mass of ortho, para and meta-xylene)BTEX | | | 0.000 | 0.000 | | |
| 65 | 100-41-4 | Ethyl benzene (BTEX) | | | 0.000 | 0.000 | | |
| 70 | 117-81-7 | Di(2-ethylhexyl)phthalate | | | 0.000 | 0.000 | | |
| 59 | 8001-35-2 | Teraphene | | | 0.000 | 0.000 | | |
| 60 | 36355-1-8 | Hexabromobiphenyl | | | 0.000 | 0.000 | | |
| 63 | | Brominated diphenylethers (PBDE) | | | 0.000 | 0.000 | | |

| Non-PRTR Substances: | | | | | | | | |
|----------------------|---------|-------------------------------|---------------------------------------|--|---|--|-------------------------------------|--|
| PRTR Nr. | CAS No. | Parameter | Treated Effluent Concentration (mg/l) | Fugitive Emission Concentration (mg/l) | Treated Effluent Mass emission (kg/annum) | Fugitive Emission Mass emission (kg/annum) | Method of Measurement (Method Code) | Method Description (Analytical Method) |
| 370 | | Selenium | | | 0.000 | 0.000 | | |
| 205 | | Antimony (as Sb) | | | 0.000 | 0.000 | | |
| 368 | | Molybdenum | | | 0.000 | 0.000 | | |
| 358 | | Tin | | | 0.000 | 0.000 | | |
| 373 | | Barium | | | 0.000 | 0.000 | | |
| 374 | | Boron | | | 0.000 | 0.000 | | |
| 356 | | Cobalt | | | 0.000 | 0.000 | | |
| 335 | | Vanadium | | | 0.000 | 0.000 | | |
| 333 | | Dichlobenil | | | 0.000 | 0.000 | | |
| 333 | | Linuron | | | 0.000 | 0.000 | | |
| 335 | | Macoprop Total | | | 0.000 | 0.000 | | |
| 330 | | 2,4 Dichlorophenol (2,4 D) | | | 0.000 | 0.000 | | |
| 334 | | MCPA | | | 0.000 | 0.000 | | |
| 332 | | Glyphosate | | | 0.000 | 0.000 | | |
| 339 | | Benzo[b]pyrene | | | 0.000 | 0.000 | | |
| 390 | | Benzo[b]fluoranthene | | | 0.000 | 0.000 | | |
| 391 | | Benzo[k]fluoranthene | | | 0.000 | 0.000 | | |
| 392 | | Indeno[1,2,3-c,d]pyrene | | | 0.000 | 0.000 | | |
| 393 | | Carbon tetrachloride | | | 0.000 | 0.000 | | |
| 394 | | 2,6-Dichlorobenzamide | | | 0.000 | 0.000 | | |
| 395 | | Dicofol | | | 0.000 | 0.000 | | |
| 396 | | Hexabromocyclododecane (HBCD) | | | 0.000 | 0.000 | | |
| 397 | | PFOS | | | 0.000 | 0.000 | | |
| 238 | | Ammonia (as N) | 10.360 | | 7578.734 | 0.000 | OTH | 14 by automated discrete analyser |
| 303 | | BOD | 7.050 | | 5179.289 | 0.000 | OTH | SOP 113 |
| 305 | | COD | 32.140 | | 23511.631 | 0.000 | OTH | SOP 107 |
| 332 | | Kjeldahl Nitrogen | | | 0.000 | 0.000 | | |
| 327 | | Nitrate (as N) | | | 0.000 | 0.000 | | |
| 372 | | Nitrite (as N) | | | 0.000 | 0.000 | | |
| 332 | | Ortho-phosphate (as PO4) | | | 0.000 | 0.000 | | |
| 240 | | Suspended Solids | 6.920 | | 5062.243 | 0.000 | OTH | SOP 108 by gravimetry |

Licensed Pollutants listed above

| | |
|-----------------|---|
| Facility Name: | Castleblayney Waste Water Treatment Works |
| Address: | Muckno Street, Castleblayney, Co. Monaghan. |
| Reporting year: | 2012 |

| | |
|--|---------|
| Treated: Final effluent volume released via main emission point | 731,538 |
| Fugitive: Estimated additional volume released in storm bypasses | 30 |
| Total Annual Flow (m ³ /annum): | 731,568 |

SECTION A : WWTP SPECIFIC PRTR POLLUTANTS

Note 'VALUE' error messages will disappear when flow data are entered above

| No. Annex II | POLLUTANT Name | M/E | Method Used | | QUANTITY | | | | E-PRTR reporting threshold kg/annum |
|--------------|--|-----|-----------------------|-------------------------------|-----------------------|----------------------|---|-------------------|-------------------------------------|
| | | | Method of Measurement | Designation or Description | SW 1 Emission Point 1 | F (Fugitive) kg/year | A (Accidental) kg/year (Enter site specific data) | T (Total) kg/year | |
| 12 | Total nitrogen | M | OTH | SOP 151 by automated discrete | 10 241 532 | 0 704 | | 10 242 236 | 50,000 |
| 13 | Total phosphorus | M | OTH | SOP 156 by automated discrete | 453 554 | 0 129 | | 453 682 | 5,000 |
| 76 | Total organic carbon (TOC) (as total C or COD ₃) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 6,744 614 | 0 393 | | 6 745 007 | 50,000 |
| 79 | Chlorides (as total Cl) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 62 096 936 | 1 944 | | 62 098 880 | 2,000,000 |
| 82 | Cyanides (as total CN) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 2 145 | 0 000 | | 2 145 | 50 |
| 83 | Fluorides (as total F) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 176 941 | 0 007 | | 176 947 | 2,000 |
| 17 | Arsenic and compounds (as As) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 256 | 0 000 | | 0 256 | 5 |
| 18 | Cadmium and compounds (as Cd) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 037 | 0 000 | | 0 037 | 5 |
| 19 | Chromium and compounds (as Cr) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 213 | 0 000 | | 0 213 | 50 |
| 20 | Copper and compounds (as Cu) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 2 256 | 0 000 | | 2 256 | 50 |
| 21 | Mercury and compounds (as Hg) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 22 | Nickel and compounds (as Ni) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 3 115 | 0 000 | | 3 115 | 20 |
| 23 | Lead and compounds (as Pb) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 2 223 | 0 000 | | 2 224 | 20 |
| 24 | Zinc and compounds (as Zn) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 38 111 | 0 004 | | 38 115 | 100 |
| 31 | Chloroalkanes (C10-C13) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 154 | 0 000 | | 0 154 | 1 |
| 25 | Alachlor | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 26 | Aldrin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 36 | Dieldrin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 39 | Endrin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 41 | Heptachlor | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 28 | Chlordane | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 29 | Chlordecone | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 46 | Mirex | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 38 | Endosulphan | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 45 | Lindane | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 69 | Isodrin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 33 | DDT | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 77 | Trifluralin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 42 | Hexachlorobenzene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 43 | Hexachlorobutadiene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 30 | Chlorovinylphos | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 32 | Chlorophos | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 27 | Atrazine | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 008 | 0 000 | | 0 008 | 1 |
| 51 | Simazine | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 010 | 0 000 | | 0 010 | 1 |
| 37 | Diazin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 019 | 0 000 | | 0 019 | 1 |
| 67 | Isoproturon | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 005 | 0 000 | | 0 005 | 1 |
| 75 | Triphenyltin and compounds | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 69 | Organotin compounds (as total Sn) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 50 |
| 74 | Tributyltin and compounds | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 72 | Polycyclic aromatic hydrocarbons (PAHs) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 007 | 0 000 | | 0 007 | 5 |
| 91 | Benzo(a)h(1)pyrene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 001 | 0 000 | | 0 001 | 1 |
| 61 | Anthracene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 002 | 0 000 | | 0 002 | 1 |
| 68 | Naphthalene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 003 | 0 000 | | 0 003 | 10 |
| 68 | Fluoranthene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 002 | 0 000 | | 0 002 | 1 |
| 50 | Polychlorinated biphenyls (PCBs) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 0,1 |
| 40 | Halogenated organic compounds (as AOX) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 1 746 | 0 000 | | 1 746 | 1,000 |
| 52 | Tetrachloroethylene (PER) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 043 | 0 000 | | 0 043 | 10 |
| 53 | Tetrachloromethane (TCM) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 57 | Trichloroethylene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 10 |
| 60 | Vinyl chloride | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 10 |
| 34 | 1,2-dichloroethane (EDC) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 10 |
| 35 | Dichloromethane (DCM) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 033 | 0 000 | | 0 033 | 10 |
| 71 | Phenols (as total C) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 666 | 0 002 | | 0 668 | 20 |
| 87 | Octylphenols and Octylphenol ethoxylates | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 64 | Nonylphenol and Nonylphenol ethoxylates (NPEs) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 061 | 0 000 | | 0 061 | 1 |
| 54 | Trichlorobenzenes (TCBs) (all isomers) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 49 | Pentachlorocyclopentadiene (PCP) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 48 | Pentachlorobenzene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 62 | Benzene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 012 | 0 000 | | 0 012 | 200 |
| 73 | Toluene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 361 | 0 000 | | 0 361 | 200 |
| 78 | Xylenes | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 085 | 0 000 | | 0 085 | 200 |
| 65 | Ethyl benzene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 012 | 0 000 | | 0 012 | 200 |
| 70 | Di-(2-ethyl hexyl) phthalate (DEHP) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 671 | 0 000 | | 0 671 | 1 |
| 59 | Toxaphene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |
| 80 | Hexabromobiphenyl | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 0,1 |
| 63 | Brominated diphenylethers (PBDE) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 | 1 |

SECTION C : REMAINING NON-PRTR SUBSTANCES AND POLLUTANT EMISSIONS AS REQUIRED IN YOUR LICENCE

| No. Annex II | POLLUTANT Name | M/E | Method Used | | QUANTITY | | | |
|--------------|-------------------------------|-----|-------------|--|-----------------------|----------------------|---|-------------------|
| | | | Method Code | Designation or Description (Note: replace with site-specific data if applicable) | SW 1 Emission Point 1 | F (Fugitive) kg/year | A (Accidental) kg/year (Enter site specific data) | T (Total) kg/year |
| 370 | Selenium | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 320 | 0 000 | | 0 320 |
| 205 | Antimony (as Sb) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 113 | 0 000 | | 0 113 |
| 368 | Molybdenum | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 |
| 358 | Tin | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 079 | 0 000 | | 0 079 |
| 373 | Barium | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 13 540 | 0 001 | | 13 541 |
| 374 | Boron | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 45 995 | 0 003 | | 45 998 |
| 356 | Cobalt | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 129 | 0 000 | | 0 129 |
| 366 | Vanadium | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 1 995 | 0 000 | | 1 995 |
| 368 | Dichlobenil | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 003 | 0 000 | | 0 003 |
| 383 | Linuron | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 |
| 385 | Metolachlor Total | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 078 | 0 000 | | 0 078 |
| 350 | 2,4-Dichlorophenol (2,4 D) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 037 | 0 000 | | 0 037 |
| 384 | MCPA | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 055 | 0 000 | | 0 055 |
| 382 | Glyphosate | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 1 121 | 0 000 | | 1 121 |
| 359 | Benzoflupyrone | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 001 | 0 000 | | 0 001 |
| 390 | Benzoflupyranthene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 001 | 0 000 | | 0 001 |
| 391 | Benzofluoranthene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 001 | 0 000 | | 0 001 |
| 392 | Indeno[1,2,3-cd]pyrene | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 002 | 0 000 | | 0 002 |
| 393 | Carbon tetrachloride | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 |
| 394 | 2,6-Dichlorobenzamide | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 059 | 0 000 | | 0 059 |
| 395 | Dicofol | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 |
| 396 | Hexabromocyclododecane (HBCD) | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 |
| 397 | PFOS | E | ESTIMATE | EPA UWWTP Tool Version 5.0 | 0 000 | 0 000 | | 0 000 |

| | | | | | | | | |
|-----|--------------------------|---|----------|--------------------------------------|------------|-------|--|------------|
| 238 | Ammonia (as N) | M | OTH | SOP 114 by <i>automated discrete</i> | 7,578.734 | 0.000 | | 7,578.734 |
| 303 | BOD | M | OTH | SOP 113 | 5,179.289 | 0.000 | | 5,179.289 |
| 306 | COD | M | OTH | SOP 107 | 23,511.631 | 0.000 | | 23,511.631 |
| 352 | Kjeldahl Nitrogen | E | ESTIMATE | EPA LWWTP Tool Version 5.0 | 0.000 | 0.000 | | 0.000 |
| 327 | Nitrate (as N) | E | ESTIMATE | EPA LWWTP Tool Version 5.0 | 0.000 | 0.000 | | 0.000 |
| 372 | Nitrite (as N) | E | ESTIMATE | EPA LWWTP Tool Version 5.0 | 0.000 | 0.000 | | 0.000 |
| 332 | Ortho-phosphate (as PO4) | E | ESTIMATE | EPA LWWTP Tool Version 5.0 | 0.000 | 0.000 | | 0.000 |
| 240 | Suspended Solids | M | OTH | SOP 106 by <i>gravimetry</i> | 5,062.243 | 0.000 | | 5,062.243 |

| Castleblayney | | Flow Weighted Mass Emission Calculations | | | | | | | | | | | | | | |
|---|------------------|--|----------|--------------------------|----------|--------------------------|-----------|--------------------------|----------------|--------------------------|----------------|--------------------------|-------------|--------------------------|---------|--|
| Effluent | | BOD | | | | COD | | | TSS | | Total P | | Total N | | Ammonia | |
| Location | Date of Sampling | Daily Outflow M3 | BOD mg/l | Daily mass load (kg/day) | COD mg/l | Daily mass load (kg/day) | TSS mg/l | Daily mass load (kg/day) | Total P mg/l P | Daily mass load (kg/day) | Total N mg/l N | Daily mass load (kg/day) | Ammonia NH4 | Daily mass load (kg/day) | | |
| Castleblayney | 02/02/2012 | 2014 | 22.00 | 44.31 | 58.00 | 116.81 | 12.00 | 24.17 | | 0.00 | 17.68 | 35.61 | 12.100 | 24.37 | | |
| Castleblayney | 24/02/2012 | 1750 | 27.00 | 47.25 | 71.00 | 124.25 | 10.00 | 17.50 | 1.400 | 2.45 | 18.24 | 31.92 | 13.570 | 23.75 | | |
| Castleblayney | 03/03/2012 | 602 | 16.00 | 9.63 | 72.00 | 43.34 | 19.00 | 11.44 | 1.775 | 1.07 | 24.75 | 14.90 | 22.870 | 13.77 | | |
| Castleblayney | 10/04/2012 | 1127 | 2.00 | 2.25 | 6.00 | 6.76 | 2.00 | 2.25 | | 0.00 | | 0.00 | 18.420 | 20.76 | | |
| Castleblayney | 19/04/2012 | 1587 | 1.60 | 2.54 | 14.00 | 22.22 | 5.00 | 7.94 | 0.273 | 0.43 | 14.98 | 23.77 | 10.040 | 15.93 | | |
| Castleblayney | 18/05/2012 | 1445 | 4.00 | 5.78 | 33.00 | 47.69 | 4.00 | 5.78 | 0.159 | 0.23 | 16.41 | 23.71 | 12.930 | 18.68 | | |
| Castleblayney | 19/06/2012 | 2146 | 1.80 | 3.86 | 17.00 | 36.48 | 4.00 | 8.58 | 0.299 | 0.64 | 11.40 | 24.46 | 6.060 | 13.00 | | |
| Castleblayney | 16/07/2012 | 2977 | 1.50 | 4.47 | 22.00 | 65.49 | 3.00 | 8.93 | 0.178 | 0.53 | 10.64 | 31.68 | | 0.00 | | |
| Castleblayney | 14/08/2012 | 1896 | 2.00 | 3.79 | 22.00 | 41.71 | 6.00 | 11.38 | 1.174 | 2.23 | 15.52 | 29.43 | 12.300 | 23.32 | | |
| Castleblayney | 05/09/2012 | 1729 | 13.00 | 22.48 | 41.00 | 70.89 | 3.00 | 5.19 | 0.189 | 0.33 | 16.05 | 27.75 | 9.720 | 16.81 | | |
| Castleblayney | 19/09/2012 | 1726 | 2.00 | 3.45 | 29.00 | 50.05 | 9.00 | 15.53 | 1.276 | 2.20 | 14.50 | 25.03 | 12.240 | 21.13 | | |
| Castleblayney | 17/10/2012 | 2491 | 0.90 | 2.24 | 22.00 | 54.80 | 2.00 | 4.98 | 0.116 | 0.29 | 5.12 | 12.75 | 0.824 | 2.05 | | |
| Castleblayney | 14/11/2012 | 3868 | 2.00 | 7.74 | 21.00 | 81.23 | 2.00 | 7.74 | 0.469 | 1.81 | 9.33 | 36.09 | 3.080 | 11.91 | | |
| Castleblayney | 03/12/2012 | 2701 | 3.30 | 8.91 | 22.00 | 59.42 | 9.00 | 24.31 | 0.118 | 0.32 | 7.42 | 20.04 | 0.577 | 1.56 | | |
| | Total | 28,059 | | | | | | | | | | | | | | |
| A - Sum of Daily Mass Loads (Kg/day) | | | 168.70 | | 821.15 | | 155.71 | | 12.53 | | 337.14 | | 207.04 | | | |
| B - Sum of Daily Flows for which Mass loadings are available (m3/day) | | | 28059 | | 28059 | | 28,059 | | 24,918 | | 26,932 | | 25,082 | | | |
| C - Flow weighted average concentration (A/B) - kg/m3 | | | 0.00601 | | 0.029265 | | 0.0055495 | | 0.0005 | | 0.01252 | | 0.00825 | | | |
| D - Total annual Flow M3 | | | 731460 | | 731460 | | 731460 | | 731460 | | 731460 | | 731460 | | | |
| E - Flow weighted Mass emission for 2012 (Cx D) -kg/annum | | | 4397.88 | | 21406.37 | | 4059.26 | | 367.81 | | 9156.55 | | 6037.96 | | | |
| | | | BOD | | COD | | TSS | | Total P | | Total N | | Ammonia | | | |

Monaghan County Council

Environmental Liability Risk Assessment & Statement of Measures for Castleblayney & Environs

2012

Urban Waste Water Discharge

Licence **D0205-01**

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| Document Amendment Record Client: Monaghan County Council Plant: Castleblayney Waste Water Treatment Plant Title: ERLA Report 2012 |
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Ref No. : D0205

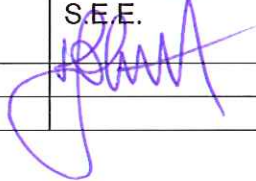
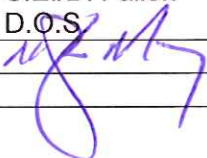
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| Feb 2013 | A Document for Submission: | M. Johnston A.E. | M. Johnston S.E.E.  | M. Murray S.E./D. Fallon D.O.S.  |
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1 Introduction

This Environmental Liability Risk Assessment relates to the agglomeration of Castleblayney and Environs. This report has been prepared in compliance with Condition 7.2 of Licence No. D0205-01 which requires the submission of:

- An annual statement as to the measures taken or adopted in relation to the prevention of environmental damage,
- The financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accident/incidents, as may be associated with discharges or overflows from the waste water works.
- Environmental Liabilities Risk Assessment (ELRA) to address the liabilities from present or planned discharges within twelve months of the date of grant of this licence.
- Under condition 7.2.2, completion of a comprehensive and fully costed ELRA to address the liabilities from present or planned discharges by an independent and appropriately qualified consultant is required as part of the second AER for Castleblayney WWTP. This requirement has not been completed for this AER, it will be completed in 2013 and submitted then.

1.1 Background

Castleblayney town is the third largest town in County Monaghan and is located approximately 23km southeast of Monaghan town. The Waste Water treatment plant is located at a site adjacent to Muckno Street in the town. Castleblayney Wastewater treatment works was built in 1983 and operates an extended aeration plant. The Waste Water Works comprises of a gravity collection system with pumping stations due to the topography of the catchment area and a Waste

Water Treatment Works with a design capacity of 12,960 P.E. The current load is approximately 11,133 P.E. (based on current flow and BOD loading).

2 Environmental Sensitivity and Risk Assessment

The main considerations in relation to the receiving waters for the primary discharge have been identified and given a designated score through the risk enforcement methodology developed by the EPA.

The Dynamic Risk Enforcement Assessment Methodology (DREAM) uses a decision making framework and toolset to assess the risk posed by the primary discharge from waste water agglomerations.

DREAM allocated an enforcement category to waste water agglomerations based on five environmental attributes:

- Level of treatment,
- Discharge compliance,
- Observed impact,
- Possible impact, and
- Enforcement record.

The DREAM map and pivot application may be accessed through the following link: <https://www.edenireland.ie>

Castleblayney Waste Water Treatment Plant agglomeration has been assigned an enforcement category of **B1-Medium**. The DREAM enforcement categories have been assigned the following site specific risk categories:

| DREAM Risk Category | Site Specific Risk Categories |
|---------------------|-------------------------------|
| A1 | Category 3 |
| A2 | Category 2 |
| B1 | |
| C1 | Category 1 |

Table 3 Risk Matrix:

| | | | | | | |
|---------------|----------|----------------|--------------|-----------------|--------------|----------------|
| V.High | 5 | | | | | |
| High | 4 | | | | | I |
| Medium | 3 | | | | | II |
| Low | 2 | | | | | III |
| V Low | 1 | | | | | |
| | | Trivial | Minor | Moderate | Major | Extreme |
| | | 1 | 2 | 3 | 4 | 5 |

| | |
|--|---|
| | These are considered to be high level risks requiring priority attention. These risks have the potential to be catastrophic and as such should be addressed quickly. |
| | These are medium level risks requiring action, but are not as critical as a red coded risk. |
| | Green (light and dark green) – These are lowest level risks and indicate need for continuing awareness and monitoring on a regular basis. Whilst they are currently low or minor risks, some have the potential to increase to medium or even high level risks and must therefore be monitored and if costs effective mitigation can be carried out to reduce the risk even further this should be pursued, |
| | |

3 Risk Prevention / Mitigation

The risk matrix above indicates that there are no high levels of risk classification for the site. The CSO activation could engender untreated effluent reaching the large water body which is Lough Muckno (325ha and up to 20m deep); however, some CSO's have been decommissioned in 2012 and improvement works are planned for the remainder.

4 Statement of Measures

The measures to be taken by Monaghan County Council are outlined in Table 4 below. Measures are in place within Castleblayney Waste Water Plant that are adequate to maintain the discharge at a quality that complies with the licence conditions and does not significantly impact on the conservation objectives of the Lough Muckno.

Table 4: Statement of Measures

| Risk I.D. | Risk Score | Mitigation Measure to be taken | Outcome | Action | Date for Competition | Owner/ Contact Person |
|-----------|------------|---|---|--|----------------------|-----------------------|
| I | 20 | Increase volume of storm overflow tank to 24hours DWF | Containment of raw effluent during high rainfall period | DOE funding WSIP awaited | Jan 2015 | M Johnston |
| II | 15 | High ammonia levels in effluent. | Reduction in ammonia and nitrogen levels | Effective treatment unit (pending funding) | Jan 2014 | E Farmer/M. Johnston |
| III | 10 | Provide standby generator | Plant continues to operate in Mains power outage. | Recommend purchase of generator | May 2013 | M Johnston |
| | | | | | | |
| | | | | | | |
| | | | | | | |

I confirm the above are the measures which will be taken in the local Authority in subsequent years.

Signed: 
 Name: Mark Johnston

Job Title: Sen Exec Eng
 Date: 25 Feb 13

5 FINANCIAL PROVISIONS

5.1 Estimation of remediation costs

Table 5 below outlines the estimated costs of remediation for different categories of events based on the location and current treatment provision.

Table 5: Risk Classification Table

| Rating | Severity | | |
|--------|----------|-------------|---------------------|
| | Category | Description | Cost of Remediation |
| 1 | Trivial | | €1500 |
| 2 | Minor | | |
| 3 | Moderate | | €5,000 |
| 4 | Major | | |
| 5 | Extreme | | €20,000 |

5.2 Details of Financial Provision / Insurance

In order to offset the risk to the environment, the Council submitted an enquiry proposal form for an Environmental Insurance Policy to IPB Insurers. Following a meeting with the company, the cost of the premium is deemed too high at €10,000 per waste water treatment plant, this is not deemed value for money and financially not possible in the current economic climate.

Castleblayney WWTP primary discharge analyses for priority substances:

Priority Substances Assessment:

Analysis of the Primary Discharge from Castleblayney WWTP was performed for the priority substances listed in appendices of the EPA 'Guidance on the screening for Priority Substances for Waste Water Discharge Licences'. The results are presented in table A below, including comparisons to relevant Surface Water Quality Standards/Drinking Water Standards where relevant.

Table A: Priority Substance assessment of the Castleblayney WWTP Primary Discharge

| No. | Compound | Unit | Analysis Result | Surface Water Quality Standard | Comparison to relevant Quality Standard |
|-----|----------------------|------|-----------------|--------------------------------|---|
| 1 | Antimony | µg/l | <2.06 | 5 | Drinking Water Regs 2007 |
| 2 | Arsenic | µg/l | 0.857 | 25 | Surface Water Regs 2009 table 10 |
| 3 | Atrazine | µg/l | <0.01 | 2 | Surface Water Regs 2009 table 11 |
| 4 | Barium | µg/l | 19.97 | 100 | Surface Water Regs 1989 |
| 5 | Benzene | µg/l | <0.47 | 50 | Surface Water Regs 2009 table 11 |
| 6 | Benzo(a)pyrene | µg/l | <0.01 | 0.1 | Surface Water Regs 2009 table 12 |
| 7 | Benzo(b)fluoranthene | µg/l | <0.01 | 0.03 | Surface Water Regs 2009 table 12 |
| 8 | Benzo(g,h,i)perylene | µg/l | <0.01 | 0.002 | Limit of detection of test above Water Quality Standard. Surface Water Regs 2009 table 12 |
| 9 | Benzo(k)fluoranthene | µg/l | <0.01 | 0.03 | Surface Water Regs 2009 table 12 |
| 10 | Boron | µg/l | 63.35 | 100 | Drinking Water Regs 2007 |
| 11 | Bromobenzene | µg/l | <0.60 | None available | Not determined |
| 12 | Bromochloromethane | µg/l | <0.71 | None available | Not determined |
| 13 | Bromodichloromethane | µg/l | <0.62 | None available | Not determined |
| 14 | Bromoform | µg/l | <5.00 | None available | Not determined |
| 15 | Bromomethane | µg/l | <5.00 | None available | Not determined |

| | | | | | |
|----|-------------------------|--------|---------|----------------------|----------------------------------|
| 16 | Cadmium | µg/l | <0.05 | 5 | Drinking Water Regs 2007 |
| 17 | Carbon tetrachloride | µg/l | <5.00 | 12 | Surface Water Regs 2009 table 11 |
| 16 | Chloride | mg/l | 54.81 | 250 | Drinking Water Regs 2007 |
| 17 | Chlorobenzene | µg/l | <0.27 | 25 | Surface Water Regs 2009 table 10 |
| 18 | Chloroethane | µg/l | <5.00 | None available | Not determined |
| 19 | Chloroform | µg/l | <0.62 | 0.0025 | Surface Water Regs 2009 table 11 |
| 20 | Chloromethane | µg/l | <5.00 | None available | Not determined |
| 21 | Chromium | µg/l | 0.389 | 32 | Surface Water Regs 2009 table 10 |
| 22 | Dichloroethane | µg/l | <0.58 | 10 | Surface Water Regs 2009 table 11 |
| 23 | Dichloropropene | µg/l | <0.85 | None available | Not determined |
| 24 | Cobalt | µg/l | 0.548 | 1000 | <i>Alan's proposal EPA</i> |
| 25 | Conductivity | Uscm-1 | 585 | None available | Not determined |
| 26 | Copper | µg/l | 16.46 | 30 (Hardness>100) | Surface Water Regs 2009 table 10 |
| 27 | Cyanide | µg/l | <5 | 50 | Drinking Water Regs 2007 |
| 28 | DEHP | µg/l | <0.001 | 1.3 | Surface Water Regs 2009 table 11 |
| 29 | Dibromochloromethane | µg/l | <0.43 | None available | Not determined |
| 30 | Dibromomethane | µg/l | <0.88 | None available | Not determined |
| 31 | Dichlobenil | µg/l | <0.0010 | None available | Not determined |
| 32 | Dichlorodifluoromethane | µg/l | <5.00 | None available | Not determined |
| 33 | Dichloromethane | µg/l | <5.00 | 20 | Surface Water Regs 2009 table 11 |
| 34 | Dieldrin | µg/l | <0.0010 | None available | Not determined |
| 35 | Diuron | µg/l | <0.0010 | 1.8 | Surface Water Regs 2009 table 11 |
| 36 | Ethylbenzene | µg/l | <0.45 | None available | Not determined |
| 37 | Flouranthene | µg/l | <0.01 | 1 | Surface Water Regs 2009 table 11 |
| 38 | Flouride | Mg/l | 0.26 | 0.5 | Surface Water Regs 2009 table 10 |
| 39 | Glyphosate | µg/l | 0.007 | 60 | Surface Water Regs 2009 table 10 |
| 40 | Hardness | mg/l | 148 | Not applicable | Not determined |

| | | | | | |
|----|---------------------------|---------|---------|----------------|---|
| 41 | Hexachlorobutadiene | µg/l | <0.7 | 0.6 | Limit of detection of test above Water Quality Standard. Surface Water Regs 2009 table 12 |
| 42 | Indeno(1,2,3-cd)pyrene | µg/l | <0.01 | 0.002 | Limit of detection of test above Water Quality Standard. Surface Water Regs 2009 table 12 |
| 43 | Isodrin | µg/l | <0.001 | None available | Not determined |
| 44 | Isopropylbenzene | µg/l | <0.36 | None available | Not determined |
| 45 | Isoproturon | µg/l | <0.0010 | 1 | Surface Water Regs 2009 table 11 |
| 46 | Lead | µg/l | 1.352 | 7.2 | Surface Water Regs 2009 table 11 |
| 47 | Linuron | µg/l | <0.0010 | 0.7 | Surface Water Regs 2009 table 10 |
| 48 | m-+p-Xylene | µg/l | <0.70 | 10 | Surface Water Regs 2009 table 10 |
| 49 | MCPA | µg/l | 0.0090 | None available | Not determined |
| 50 | Mecoprop Total | µg/l | 0.0050 | None available | Not determined |
| 51 | Mercury | µg/l | <0.04 | 1 | Drinking Water Regs 2007 |
| 52 | Molybdenum | µg/l | <5 | 0.05 | Alan's proposal EPA |
| 53 | Naphthalene | µg/l | <0.70 | 1.2 | Surface Water Regs 2009 table 11 |
| 54 | Naphthalene HPLC | µg/l | <0.01 | None available | Not determined |
| 55 | n-Butylbenzene | µg/l | <0.41 | None available | Not determined |
| 56 | Nickel | µg/l | 2.921 | 20 | Surface Water Regs 2009 table 11 |
| 57 | n-Propylbenzene | µg/l | <0.31 | None available | Not determined |
| 58 | O-Xylene | µg/l | <0.48 | None available | Not determined |
| 59 | pH | pHunits | 7.4 | 6-9 | OK |
| 60 | Phenols | µg/l | <0.10 | 46 | Surface Water Regs 2009 table 10 |
| 61 | p-Isopropyltoluene | µg/l | <0.67 | None available | Not determined |
| 62 | Polyaromatic Hydrocarbons | µg/l | <0.10 | None available | Not determined |
| 63 | Polychlorinated Biphenyls | µg/l | <0.05 | None available | Not determined |
| 64 | sec-Butylbenzene | µg/l | <0.34 | None available | Not determined |
| 65 | Selenium | µg/l | <2.12 | 10 | Drinking Water Regs 2007 |

| | | | | | |
|----|-----------------------------|------|-------|-----------------------|---|
| 66 | Simazine | µg/l | <0.01 | 4 | Surface Water Regs 2009 table 11 |
| 67 | Styrene | µg/l | <0.53 | None available | Not determined |
| 68 | Tert-Butylbenzene | µg/l | <0.49 | None available | Not determined |
| 69 | Tetrachloroethane | µg/l | <0.39 | 10 | Surface Water Regs 2009 table 11 |
| 70 | Tin | µg/l | <2.8 | None available | Not determined |
| 71 | Toluene | µg/l | <0.54 | 10 | Surface Water Regs 2009 table 10 |
| 72 | Total Organic Carbon | mg/l | 8.75 | None available | Not determined |
| 73 | Total Xylene | µg/l | <0.70 | 10 | Surface Water Regs 2009 table 10 |
| 74 | Trans-1,2-Dichloroethane | µg/l | <0.61 | 10 | Surface Water Regs 2009 table 11 |
| 75 | Trans-1,3-Dichloropropene | µg/l | <4.00 | None available | Not determined |
| 76 | Trichloroethane | µg/l | <5.00 | 10 | Surface Water Regs 2009 table 11 |
| 77 | Trichlorofluoromethane | µg/l | <5.00 | None available | Not determined |
| 78 | Vanadium | µg/l | 0.409 | 1000 | Alan's proposal EPA |
| 79 | Vinyl Chloride | µg/l | <5.00 | 0.5 | Limit of detection of test above Water Quality Standard. Drinking Water Regs 2007 |
| 80 | Volatile Organic Compounds | µg/l | <1 | None available | Not determined |
| 81 | Zinc | µg/l | 11.7 | 100 (Hardness>100) | Surface Water Regs 2009 table 10 |
| 82 | 1,1,1,2-Tetrachloroethane | µg/l | <0.66 | 10 | Surface Water Regs 2009 table 11 |
| 83 | Trichloroethane | µg/l | <0.39 | 10 | Surface Water Regs 2009 table 11 |
| 84 | 1,1,2,2-Tetrachloroethane | µg/l | <5.00 | None available | Not determined |
| 85 | 1,1,2-Trichloroethane | µg/l | <1.26 | 10 | Surface Water Regs 2009 table 11 |
| 86 | 1,1-Dichloroethane | µg/l | <0.51 | 10 | Surface Water Regs 2009 table 11 |
| 87 | 1,1-Dichloropropane | µg/l | <0.39 | None available | Not determined |
| 88 | 1,2,3-Trichlorobenzene | µg/l | <0.61 | None available | Not determined |
| 89 | 1,2,3-Trichloropropane | µg/l | <1.31 | None available | Not determined |
| 90 | 1,2,4-Trichlorobenzene | µg/l | <0.48 | None available | Not determined |
| 91 | 1,2,4-Trimethylbenzene | µg/l | <0.64 | None available | Not determined |
| 92 | 1,2-Dibromo-3-chloropropane | µg/l | <5.00 | None available | Not determined |

| | | | | | |
|-----|------------------------|------|---------|----------------|-------------------------------------|
| 93 | 1,2-Dibromoethane | µg/l | <1.04 | None available | Not determined |
| 94 | 1,2-Dichlorobenzene | µg/l | <0.66 | None available | Not determined |
| 95 | 1,2-Dichloroethane | µg/l | <0.65 | 10 | Surface Water Regs 2009 table 11 |
| 96 | 1,2-Dichloropropane | µg/l | <0.72 | None available | Not determined |
| 97 | 1,3,5-Trimethylbenzene | µg/l | <0.59 | None available | Not determined |
| 98 | 1,3-Dichlorobenzene | µg/l | <0.53 | None available | Not determined |
| 99 | 1,3-Dichloropropane | µg/l | <0.77 | None available | Not determined |
| 100 | 1,4-Dichlorobenzene | µg/l | <1.16 | None available | Not determined |
| 101 | 2,2-Dichloropropane | µg/l | <5.00 | None available | Not determined |
| 102 | *2,4 D (AH)* | µg/l | 0.0220 | None available | Not determined |
| 103 | 2,6-Dichlorobenzamide | µg/l | <0.0001 | 0.06 | |
| 104 | 2-Chlorotoluene | µg/l | <0.50 | None available | Not determined |
| 105 | 4-Chlorotoluene | µg/l | <0.51 | None available | Not determined |

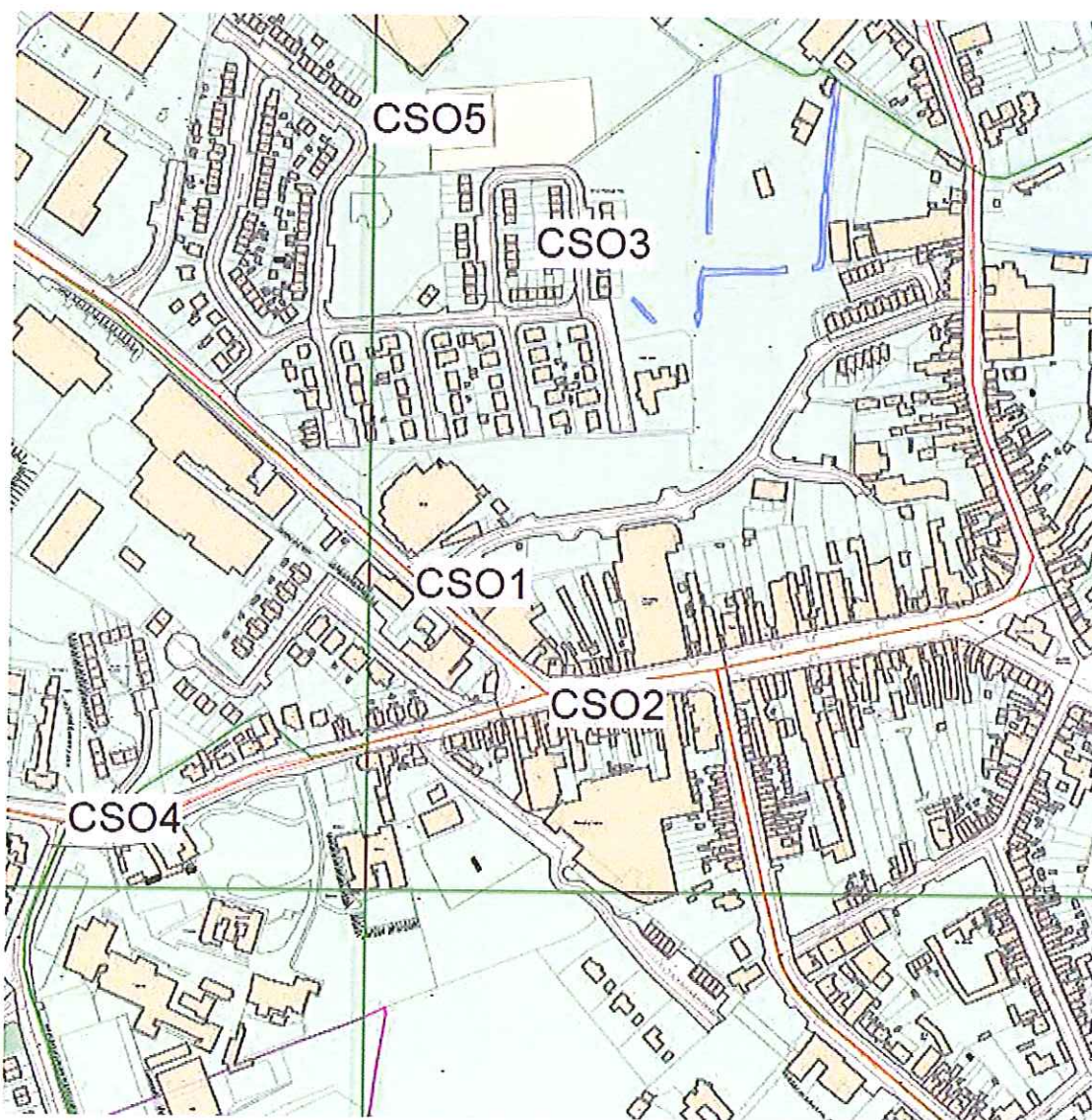
The results for the priority substances screened in the primary discharge effluent for Castleblayney WWTP are below relevant Surface Water Limits and Drinking Water limits where applicable. For 4 no. parameters, the limit of detection of the analytical test is above the relevant limit, therefore, a comparison cannot be made.

CSO, SWO & Emergency overflow report:

Monaghan County Council provides clarification and updating in this report to the EPA on the number of storm water overflows (SWO's)/combined storm water overflows (CSO's) on the Castleblayney network and at the treatment plant, following investigation and surveys of same. Not all of these SWO's/CSO's were identified and therefore not included at the time of submission of the discharge licence application to the EPA for Castleblayney. Some decommissioning of SWO's has been carried out since this investigation and some upgrading works are pending completion on the remainder. This report includes details of each SWO and CSO and its current status and also a summary of all emergency overflows from pump stations on the network. There are no emergency overflows from the plant itself.

Combined Storm Water Overflows (CSO's) report:

Five number combined storm water overflows (CSO's) were identified on the sewer network as follows, locations of which are identified on attached map:



CSO1

Location – outside Office units (Pringles) Monaghan road:

This CSO was located on the Monaghan road but has been decommissioned by Monaghan County Council as a CSO in 2012.



CSO1 prior to decommissioning of CSO works, Sept. 2011.

CSO photo (prior to works) above details a small manhole (MH) measuring 600x450x600mm deep with foul water easy access to storm water drain- no weir wall of any kind, in line trap in channel of MH.

Decommissioning works were carried out to remove trap, seal up aperture to SW outlet and remove CSO.

CSO2/SW2 as per licence

Location - traffic island at Main street junction of Monaghan/Shercock road:

There CSO causes no visual or aesthetic impact or public complaints. It does not operate in dry weather. It would operate in times of heavy/extended rainfall, the overflow flows into an adjacent storm drain which flows into Lough Muckno. There are no records of how often it operates in 2012.

This CSO consists of an old iron penstock fixed to a reinforced concrete weir wall within the manhole. Proposed upgrading works are to remove iron penstock and raise weir wall and to fit net bag to outlet to contain any deleterious matter.



CSO2 , Sept. 2011.

CSO3

Location – Park Road, Drumillard.

This CSO was located in a housing estate in Drumillard which ran through private property at the rear of a residence, but has since been demolished/decommissioned as a CSO in 2008 alongside re routing of the associated sewer line works carried out at that time.



CSO3 , prior to decommissioning, March. 2008.

CSO4

Location – centre of main Shercock road opposite iontas road:

There CSO causes no visual or aesthetic impact or public complaints. It does not operate in dry weather. It currently would operate in times of heavy/extended rainfall, the overflow flows into an adjacent storm drain.

This CSO consists of an old type CSO with a hole in the wall to a storm water sewer and an overflow weir wall. Proposed upgrading works are to block up the hole completely and build up the weir wall to seal the manhole completely, thus effectively decommissioning it as a CSO. Following completion of these works, it will become evident during periods of heavy rainfall if the manhole/sewer line is capable of containing the flows. Pending the outcome of this, a final decision can be made as to whether the CSO will be required or can remain decommissioned.



CSO4 , Sept. 2011

CSO5

Location - Drumillard Green north, (Near Coogans)

There CSO causes no visual or aesthetic impact or public complaints. It does not operate in dry weather, with no apparent discharge having ever occurred from inspection. This CSO consists of overflow weir walls type. No upgrading or improvement works are considered necessary for this CSO.



CSO5 , Sept. 2011

CSO Summary:

To conclude, five number CSO's were identified on the Castleblayney sewer network in the investigation/survey carried out. Two of them have been decommissioned since then (CSO3 & CSO1). Three number remain, with proposed upgrading works to decommission one of them on the Shercock road (CSO4), and for improvements to CSO2/(SW2 in licence) as outlined in this report. No upgrading works are considered necessary for the remaining one, CSO5 as investigation concluded that it doesn't operate.

Storm Water Overflow (SWO) report:

Two number storm water overflows (SWO's) were identified at the waste water treatment plant (WWTP), one from the inlet works has been decommissioned in 2012 and the remaining SWO from the storm tank is identified in the discharge licence as SW3.

Schedule C.3 'Improvement Programme for Storm Water Overflows' of the licence, upgrading of Storm Water Overflow, SW3, is required to comply with the criteria outlined in the DoECLG, 'Procedures and Criteria in relation to Storm Water Overflows, 1995'.

The capacity of the storm tank on site is 300m³, during periods of prolonged rainfall/storm conditions, flow is diverted to the storm tank from the inlet works for storage until flow at the inlet works recedes and it is pumped back from the storm tank. If the storm tank fills up, it will overflow to Lough Muckno via the SW3 from the storm tank. This overflow will only occur during periods of prolonged heavy rainfall.

New storm tank facilities form part of the proposed 'Stage 1' upgrading of the Castleblayney WWTP works. Stage 1 proposed upgrading works for Castleblayney WWTP will depend on DoECLG approval and funding, it is on the Water Services Investment Programme (WSIP) 2010 -2013 at an estimated cost of €3,927,000, however, it is currently at planning stage and is unlikely to be approved before the end of the current WSIP –December 2013.

Emergency Overflows report:

There are some emergency overflows from the pump sumps on the Castleblayney sewer network. A summary of the pumping stations are outlined in the following table:

| Pumping Station Summary | | | | |
|--------------------------------------|--------------------|--------------------------------|--|--------------------|
| Pumping Station | Wet Well volume M3 | Storm tank volume m3 | Emergency Overflow | Screen on overflow |
| Monaghan Road PS | 10.6 | No storm tank | Yes | No |
| Muckno Street PS (inlet works PS) | 23.7 | No storm tank | Yes | Yes -Copa sac |
| Laurel Hill PS | 15.7 | No storm tank | No | n/a |
| Knockturnagh PS | 10.2 | No storm tank | No | n/a |
| Bree PS | No data | Yes - no volume data | No | n/a |
| Dundalk Road PS | 15.5 | Yes -volume = 36m ³ | No - excess flow is diverted back into sewer network | n/a |

There are only 2 pump stations with emergency overflows. All pumping stations have a dial out alarm facility to alert the caretaker via his mobile phone, of any malfunction/problem at the pumping stations. The caretaker

Castleblayney agglomeration D0205

also checks the pumping stations regularly. The risk is therefore minimised of overflows via the emergency overflows from the 2 pumping stations on the network to surface water.