Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

Water Services Section,
Civic Offices,
Limerick Road,
Nenagh,
Co. Tipperary

The Administrator,
Office of Environmental Enforcement,
Environmental Protection Agency,
PO Box 3000,
Johnston Castle Estate,
Co. Wexford.

28/2/12

Re: AER for 2011 (Borrisokane Agglomeration).
Licence Register Number: D0027-01.

Dear Sir/Madam,

Please find attached one original and one copy of a completed Annual Environmental Report for 2010 as per Condition 6.8 of the Waste Water Discharge Licence for Borrisokane Agglomeration. The content of the Full PDF AER uploaded to the EPA website is a true copy of the original Annual Environmental Report.

Yours Sincerely,

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Jim McGuire,
Senior Engineer.

Annual Environmental Report 2011 Borrisokane Agglomeration

Borrisokane Agglomeration was issued with a Waste Water Discharge Licence on 19/10/11. Licence Register Number D0326-01.
This is the Annual Environmental Report (AER) for 2011 as required under Condition 6.8 of said Licence.
It contains the information required under Schedule D of the Licence.

1. **Discharges from the agglomeration**

   Borrisokane Agglomeration uses the same primary discharge point and emergency overflow as identified in the Waste Water Discharge Authorisation Licence Application. There have been no changes to these discharge points since the application was lodged in 2008.
   The primary discharge point was sampled 8 times in 2011, on 6 occasions before the licence was issued, and on 2 occasions after the licence was issued. Composite sampling has taken place on the primary discharge point since the licence was issued.
   Borrisokane WWTP satisfies the criteria set out under the Urban Waste Water Treatment Regulations.
   All of the samples taken of the primary discharge since the WWDL was issued were within the Emission Limit Values (ELVs) for Borrisokane as set out in Schedule A of the Licence.

   Please find attached an Excel Spreadsheet called **"Borrisokane WWTP Final Effluent Test Results 2011"**. This spreadsheet shows all sample test results for Borrisokane WWTP Final effluent in 2011.

2. **Summary report on (i) monthly influent monitoring and (ii) loading removal efficiencies**

   2.(i) In 2011, 3 No. composite influent samples were taken at Borrisokane WWTP at monthly intervals since the issue of the WWDL. Please find attached an Excel Spreadsheet called **"Borrisokane WWTP Plant Influent Test Results 2011"** (This spreadsheet shows all sample test results for Borrisokane WWTP Influent in 2011.)

   2(ii) Composite Final Effluent samples were also taken on the same days as the Plant Influent samples. By comparing the percentage reduction of the relevant parameters in the effluent samples, the loading removal efficiencies were estimated.
   Please find attached an Excel Spreadsheet called **"Summary Report on Loading Removal Efficiencies Borrisokane 2011"** (which gives a breakdown for all the parameters mentioned in **Schedule A:A.1**).

   The average BOD removal rate was 99.14%. The range varied from 98.31% to 99.81%.

The average Ammonia removal rate was 99.56%. The range varied from 99.4% to 99.75%.
The average COD removal rate was 98.67%. The range varied from 97.54% to 99.64%.
The average Suspended solids removal rate was 99.49%. The range varied from 99.13% to 99.91%.
The average Orthophosphate removal rate was 51.45%. The range varied from 36.22% to 69.75%.

3. **Data collection and reporting requirements under the Urban Waste Water Treatment Directive**

Borrisokane Agglomeration's WWTP is included in North Tipperary County Council's 2011 Annual Waste Water Returns Report to the EPA. This report was lodged by North Tipperary County Council with the EPA by 26 February 2012.

4. **Complaints summary**

There have been no environmental complaints about Borrisokane Agglomeration in 2011.

5. **Pollutant Release and Transfer Register- report for previous year**

A Pollutant Release and Transfer Register (Condition 4.13) has been not been completed for Borrisokane Agglomeration for the year 2011, by virtue of the fact that the Licence was issued in last quarter of 2011, and so a PRTR is not required for 2011.

6. **Pollutant Release and Transfer Register- report for current year**

This will be provided in the 2012 AER.

7. **Ambient monitoring summary**

In 2011, ambient sampling consisted of 1 sample taken **(i)** upstream and **(ii)** downstream of the primary discharge point.
Please find attached 2 No. Excel Spreadsheets called **"Borrisokane WWTP Upstream Test Results 2011"** and **"Borrisokane WWTP Downstream Test Results 2011"** attached. These spreadsheets show all test result values for samples taken upstream and downstream of Borrisokane WWTP's Primary Discharge Point in 2011.
The ambient monitoring samples were compared to the criteria for calculating surface water ecological status and ecological potential as set out under Schedule 5 of the European Communities Environmental Objectives (Surface Waters) Regulations 2009. The grab sample upstream of Borrisokane WWTP, was classified as having a "less than good" water status, by comparing the Total Ammonia, BOD and Orthophosphate parameters to the parameters set out in Schedule 5. Similarly, the grab sample taken downstream classified as having a "less than good" water status, by comparing the Total Ammonia, BOD and Orthophosphate parameters to the parameters set out in Schedule 5. Similarly, the Ballyfinboy River upstream and downstream of Borrisokane WWTP is classified by the EPA as having a Q Status of Q3-4 (moderate quality). The discharge does not appear to have any significant adverse effect on the Ballyfinboy River.

8. **Storm water overflow inspection and assessment report**
   No Storm water overflow inspection and assessment report has been completed in 2011, as Borrisokane WWTW is not equipped with stormwater overflows.

9. **Reported incidents summary**
   There were no reported incidents in 2011.

10. **Report on progress made and proposals being developed to meet the improvement programme requirements**
    North Tipperary Co. Council will install primary screening and storm water holding tank at Borrisokane by 31 December 2019.

11. **Development/Infrastructural works summary (completed in previous year or prepared for current year)**
    North Tipperary Co. Council intends to install ferric sulphate dosing facilities in Borrisokane WWTP in 2012, in order to remove phosphorus compounds from the final effluent.

12. **Risk based assessment to identify possible presence of priority substances**
    North Tipperary Co. Council intends to carry out a risk based assessment in accordance with "Guidance on the Screening for Priority Substances for Waste Water Discharge Licences" issued by the Agency, in 2012, as time constraints meant it could not be carried out in 2011.

Appendix No.1-Borrisokane WWTP Final Effluent Test Results 2011

StationName	SampleLabCode	SampleDate	Ammonia	Ammonia	Ammonium	BOD	BOD	Chemical Oxygen Demand	COD	Chloride	Nitrates	Nitrites	O-Phos
			(mg/l as N)	ELV	(mg/l NH4)	(mg/l O2)	ELV	(mg/l O2)	ELV	(mg/l Cl)	(mg/l N03 as N)	(mg/l NO2 as N)	(mg/l PO4 as P)
Borrisokane STP final effluent	11470038	20/01/2011	0.645	5	0.829	3	12	14	125	87.06	10.75	0.21	0.171
Borrisokane STP final effluent	11470213	31/03/2011	4.02	5	5.32	3	12	20	125	104.9	0.09	0.01	2.46
Borrisokane STP final effluent	11470304	03/05/2011	6.78	5	8.71	6	12	24	125	121.7	0.06	0.02	1.02
Borrisokane STP final effluent	11470494	21/07/2011	0.487	5	0.627	2	12	25	125	107.13	0.46	0.036	1.05
Borrisokane STP final effluent	11470533	04/08/2011	0.049	5	0.063	2	12	19	125	107.01	0.3	0.048	2.16
Borrisokane STP final effluent	11470697	11/10/2011	0.152	5	0.195	4	12	27	125	94.72	0.47	0.112	2.36
Borrisokane STP final effluent	11470804	29/11/2011	0.09	5	0.116	6	12	34	125	79.86	6.4	0.147	1.75
Borrisokane STP final effluent	11470847	08/12/2011	0.038	5	0.048	3	12	8	125	67.9	7.69	0.134	1.6

Appendix No.1-Borrisokane WWTP Final Effluent Test Results 2011

SampleDate	O-Phos	O-Phos	pH	pH	Sulphate	Suspended Solids	SS	Temperature	Total Nitrogen	Total Oxidised Nitrogen	Total Phosphorus
	ELV	(mg/l PO4)	(pH units)	ELV	(mg/l SO4)	(mg/l)	ELV	(oC)	(mg/l as N)	(mg/l TON as N)	(mg/l as P)
20/01/2011	2	0.523	7.72	6.0 -9.0	32.1	4.8	35	6.8		10.97	0.34
31/03/2011	2	7.55	7.85	6.0 -9.0	40.66	5.6	35	11.5		0.1	3
03/05/2011	2	3.12	7.91	6.0 -9.0	42.9	9.2	35	13.3		0.08	1.36
21/07/2011	2	3.22	7.96	6.0 -9.0	51.67	6.8	35	16.6		0.49	1.44
04/08/2011	2	6.63	7.96	6.0 -9.0	50.27	4.4	35	18.7		0.35	2.44
11/10/2011	2	7.24	8.12	6.0 -9.0	39.77	6.4	35	15.2		0.58	2.52
29/11/2011	2	5.37	7.97	6.0 -9.0	38.84	12.8	35	10.1	15.2	6.55	2.24
08/12/2011	2	4.92	7.94	6.0 -9.0	33.87	7.2	35	10.1	14.6	7.82	2

Appendix No.2(i)-Borrisokane WWTP Plant Influent Test Results 2011

StationName	SampleLabCode	SampleDate	Ammonia	Ammonium	BOD	Chemical Oxygen Demand	Chloride	Nitrates	Nitrites	O-Phos	O-Phos	pH
			(mg/l as N)	(mg/l NH4)	(mg/l O2)	(mg/l O2)	(mg/l Cl)	(mg/l N03 as N)	(mg/l NO2 as N)	(mg/l PO4 as P)	(mg/l PO4)	(pH units)
Borrisokane STP influent	11470696	11/10/2011	25.38	32.62	590	2320	108.81	0.16	BLD	3.7	11.4	7.55
Borrisokane STP influent	11470803	29/11/2011	18.68	24	354	1382	80.06	<0.01	<0.01	3.39	10.42	7.54
Borrisokane STP influent	11470846	08/12/2011	15.45	19.86	1557	2211	85.5	0.03	<0.01	5.29	16.23	7.11

SampleDate	Sulphate	Suspended Solids	Temperature	Total Nitrogen	Total Oxidised Nitrogen	Total Phosphorus
	(mg/l SO4)	(mg/l)	(oC)	(mg/l as N)	(mg/l TON as N)	(mg/l as P)
11/10/2011	30.41	1155	15.1	0.15	10.6	
29/11/2011	34.31	1463	9.2	<0.01	9.45	
08/12/2011	27.5	7927	9.8	0.04	8.1	

Appendix 2(ii) Summary Report on Loading Removal Efficiencies at Borrisokane WWTP in 2011

2011 % Reductions

Date	BOD	COD	Suspended Solids	Ammonia	Orthophosphate
11/10/2011	99.3220339	98.8362069	99.44588745	99.40110323	36.21621622
29/11/2011	98.30508475	97.5397974	99.12508544	99.51820128	48.37758112
08/12/2011	99.80732177	99.63817277	99.90917119	99.75404531	69.75425331

2011 % Reductions

	Average Value	Max Value	Min Value
BOD	99.14	99.81	98.31
COD	98.67	99.64	97.54
S.Solids	99.49	99.91	99.13
Ammonia	99.56	99.75	99.4
Orthophosphate	51.45	69.75	36.22

Appendix No.7(i) Borrisokane WWTP Upstream Test Results 2011

StationName	SampleLabCode	SampleDate	Ammonia	Ammonium	BOD	Chemical Oxygen Demand	Chloride	Conductivity @ 20°C	Dissolved Oxygen	Nitrates	Nitrites
			(mg/l as N)	(mg/l NH4)	(mg/l O2)	(mg/l O2)	(mg/l Cl)	(uS/cm)	(ppm O2)	(mg/l N03 as N)	(mg/l NO2 as N)
Borrisokane STP upstream	11470805	29/11/2011	0.04	0.052	2.3	21	18.94	620	9.68	2.1	<0.01

Appendix No.7(i) Borrisokane WWTP Upstream Test Results 2011

SampleDate	O-Phos	O-Phos	pH	Sulphate	Suspended Solids	Temperature	Total Nitrogen	Total Oxidised Nitrogen	Total Phosphorus
	(mg/l PO4 as P)	(mg/l PO4)	(pH units)	(mg/l SO4)	(mg/l)	(oC)	(mg/l as N)	(mg/l TON as N)	(mg/l as P)
29/11/2011	0.027	0.083	7.9	20.84	9.6	9	3	2.11	0.12

Appendix No.7(ii) Borrisokane WWTP Downstream Test Results 2011

StationName	SampleLabCode	SampleDate	Ammonia	Ammonium	BOD	Chemical Oxygen Demand	Chloride	Conductivity @ 20°C	Dissolved Oxygen	Nitrates	Nitrites
			(mg/l as N)	(mg/l NH4)	(mg/l O2)	(mg/l O2)	(mg/l Cl)	(uS/cm)	(ppm O2)	(mg/l N03 as N)	(mg/l NO2 as N)
Borrisokane STP downstream	11470806	29/11/2011	0.039	0.05	2.1	26	19.24	620	9.78	2.14	<0.01

SampleDate	O-Phos	O-Phos	pH	Sulphate	Suspended Solids	Temperature	Total Nitrogen	Total Oxidised Nitrogen	Total Phosphorus
	(mg/l PO4 as P)	(mg/l PO4)	(pH units)	(mg/l SO4)	(mg/l)	(oC)	(mg/l as N)	(mg/l TON as N)	(mg/l as P)
29/11/2011	0.031	0.096	7.94	20.59	14.8	9.4	3.4	2.15	0.13