

SOUTH TIPPERARY COUNTY COUNCIL



KILLENAULE WASTE WATER DISCHARGE LICENCE REGISTER NUMBER: D0443-01

ANNUAL ENVIRONMENTAL REPORT 1st JANUARY 2010 -31st DECEMBER 2010

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1. INTRODUCTION

The Environmental Protection Agency on 17th September 2010 granted South Tipperary County Council Waste Water Discharge Licence (Register No. D0443-01) in respect of the agglomeration named **Killenaule**. One of the provisions of that licence is that the Council submit to the Agency at end of each year an 'Annual Environmental Report' (AER) to provide a summary of activities relevant to the discharges for that year. This is the first Annual Environmental Report (AER) for Killenaule Wastewater Treatment Plant and includes the information specified in Schedule D of the Wastewater Discharge Licence D0443-01.

This AER has been prepared in accordance with the Environmental Protection Agency (EPA) document: -"Guidance on the Preparation & Submission of the Annual Environmental Report (AER) for Waste Water Discharge Licences".

1.1 Site Information

The Killenaule Waste Water Treatment Plant is located at Killenaule, Co. Tipperary. (National Grid reference of E222507, N146042. The sewer on the network is generally a combined sewer system with the more recent housing developments to the east of the village having installed separate foul and surface water systems. The sewerage flows by gravity to a pumping station located within the site of the wastewater treatment plant.

The Killenaule Wastewater Treatment is operated under a Design Build Operate Contract (DBO) by AECOM Ireland Ltd. who were awarded the contract in 2002. The plant is designed to treat a population equivalent of 1,200pe.

The plant operates the following process units as required, an activated sludge process, screening, grit removal, storm treatment, biological treatment (oxidation ditch), final settlement, phosphorus removal using Aluminium Chloride, tertiary filtration, sludge thickening and storage.

The treated effluent from the plant gravitates through an open pipe to the Killenaule Stream (SW1), with some of the treated effluent returned to the works for washing and cleaning. Prolonged storm conditions of 6DWF for greater than 2hrs at the plant will result in storm water overflowing the storm tank to the receiving water through an open pipe identified as SW2. The inlet pumping station provides for screened storm discharge when the volume of influent exceeds the capacity of the forward feed pumps to treatment. Overflows from the pumping station are via an open pipe identified as SW3.

Primary Discharge Point SW1

The Primary Discharge Point, SW1, discharges treated effluent from the Killenaule WWTP to Killenaule Stream at 222538 Easting, 145960 . It should be noted that there are no secondary wastewater discharges.

The Storm Water Overflows

There are three stormwater overflow discharge locations each of which when operational discharges to the Killenaule stream. There locations are as follows:

SW2 located at 222536 Easting 146040 Northing.- overflow from stormr tank at WWTP

SW3 located at 222515 Easting 146075 Northing.- overflow from pumping station at WWTP

SW4 located at 222401 Easting 146357 Northing.- on Ballingarry road

Wastewater Treatment Plant Management.

Killenaule wastewater treatment plant is operated and managed on behalf of South Tipperary County Council by AECOM Ltd. Kingswood Drive, Citywest Business Campus, Dublin 24.

2. SUMMARY OF MONITORING REPORTS

2.1 Summary report on monthly influent monitoring

Table 1 is a tabular presentation of waste water treatment plant influent monthly monitoring results for BOD, COD, Suspended Solids, Total Nitrogen and Total Phosphorus, as required by Condition 4.15

Table 1: Waste water treatment plant influent monitoring results for BOD, COD, Suspended Solids, Total Nitrogen, Total Phosphorus, Ammonia and pH.

Date	Flow	BOD	COD	Suspended Solids	Total Nitrogen (as N)	T P	Ammonia	pH
	m ³ /day	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	Value
13/01/10	609	59	127	39	6.7	1.19	4.83	7.2
09/02/10	772	43	70	28	11.3	1.35	12.03	7.7
09/03/10	413	60	95	35	17.9	2.39	13.94	7.7
13/04/10	513	80	123	61	15.9	1.93	13.50	7.5
11/05/10	376	138	231	141	27.7	4.09	25.05	7.8
09/06/10	733	101	218	76	24.9	2.68	11.80	7.6
13/07/10	234	165	291	154	49	6.31	16.43	7.5
10/08/10	300	92	173	54	24.1	3.05	17.54	7.7
14/09/10	679	62	111	75	14	1.8	8.35	7.4
12/10/10	347	81	183	110	40.6	4.48	15.10	7.8
09/11/10	812	79	127	100	13.9	1.58	7.54	6.8
14/12/10	475	118	169	73	31.2	3.79	17.2	7.8
Total	6263 m³							

Note: The Ammonia and pH results from January to November are monthly averages obtained from treatment process analysis test results. All other results in the table - for all parameters – are those obtained from Independent laboratory tests.

Determination of the Population Equivalent load to the WWTP.

The total influent for the year 2010 was **164,658 m³** as per Tables No 3 and Table No 4.

The flow-weighted averaged influent BOD as calculated per Table 2 is 82.6 mg/l.

Killenaule population equivalent was determined by the following formula:

[Total Influent Flow for 2010 * flow-weighted averaged influent BOD divided by (0.06 x 365 x 1000)]

Therefore PE = (164,658 x 82.6)/(0.06 x 365 x 1000) = **621**

Table 2: Influent BOD Calculation sheet

Date	Influent Flow m ³ /day	Influent BOD mg/l	Influent BOD Kg
13/01/2010	609	59	35.9
09/02/2010	772	43	33.2
09/03/2010	413	60	24.8
13/04/2010	513	80	41.0
11/05/2010	376	138	51.9
09/06/2010	733	101	74.0
13/07/2010	234	165	38.6
10/08/2010	300	92	27.6
14/09/2010	679	62	42.1
12/10/2010	347	81	28.1
09/11/2010	812	79	64.1
14/12/2010	475	118	56.1
Total =	6,263m ³		517.5 kg
Flow weighted average BOD is 517.5 kg *1000/6,263m³ = 82.6mg/l			

2.2 Discharges from the agglomeration

The primary discharge point monitoring results for the parameters as set out in Schedule B.1 of the licence is presented in tabular form on the following Tables 3, 4, 5, 6, and 7.

Tables 3 and 4 contain daily flows (m³/day).

- The highest daily flow of **1080 m³/day** was recorded on 5/11/2010
- The lowest daily flow of **44 m³/day** was recorded on 17/06/2010.
- The average daily flow for 2010 was **451 m³/day**.
- The total flow for the year 2010 was **164,658 m³**

Table 3: Primary discharge point daily monitoring results as set out in Schedule B.1 of the licence for Flow (m3/day) for the months January to June 2010.

Day	January	February	March	April	May	June
1	948.00	379	263.00	792	600.00	517
2	816.00	372	343.00	814	294.00	367
3	816.00	206	308.00	814	294.00	350
4	665.00	477	376.00	814	444.00	265
5	633.00	850	531.00	745	151.50	375
6	534.00	879.5	496.00	713	151.50	443
7	464.00	879.5	310.50	794	463.00	443
8	411.00	639	310.50	751	390.00	419
9	438.00	772	413.00	758	759.00	733
10	204.00	688	452.00	762.5	185.00	405
11	204.00	623	333.00	762.5	376.00	315
12	434.00	511	548.00	544	395.00	342.5
13	609.00	511	501.00	513	337.00	342.5
14	1036.00	511	501.00	471	383.00	202
15	658.00	248	314.00	378	417.50	329
16	886.00	396	312.00	347	417.50	373
17	826.50	331	326.00	431	219.00	44
18	826.50	312	326.00	233	293.00	238
19	836.00	284	422.00	233	451.00	368
20	854.00	355.5	433.00	268	334.00	210
21	815.00	355.5	433.00	279	257.00	210
22	835.00	239	487.00	270	303.50	165
23	361.00	249	497.00	688	303.50	234
24	785.50	530	648.00	500	175.00	224
25	785.50	476	822.00	373	234.00	324
26	748.00	590	729.00	373	244.00	221
27	665.00	344	864.00	371	263.00	174
28	621.00	263	674.00	433	275.00	174
29	553.00		674.00	414	555.00	605
30	557.00		796.00	380	239.00	205
31	379.00		788.00		239.00	

Table 4: Primary discharge point daily monitoring results as set out in Schedule B.1 of the licence for Flow (m3/day) for the months July to December 2010.

Day	July	August	Sept	Oct	Nov	Dec
1	266	405	235	509	746	330
2	215	410	230	497.5	744	362
3	220.5	225	189	497.5	787	291
4	220.5	418	117.5	356	759	334
5	140	338	117.5	528	1081	334
6	174	268	623	455	531	173
7	205	231	702	419	654	380
8	166	231	697	445	654	307
9	297	268	588	393	812	257
10	358	300	595	335.5	774	333
11	358	249	638	335.5	834	475.5
12	236	290	361.5	347	768	475.5
13	234	263	361.5	358	733.5	375
14	367	266	679	428	733.5	475
15	374	266	317	416	669	454
16	602	143	504	186.5	756	484
17	640	228	525	186.5	765	513.5
18	640	228	583	338	795	513.5
19	606	237	304	455	806	404
20	597	439	304	471	832	404
21	645	388	569	434	832	314
22	518	234.5	567	386	591	291
23	492	234.5	600	266	571.5	315
24	409	350	597	493	571.5	402
25	306	248	665	493	436	280
26	306	235	470	247	416	280
27	288	207	470	624	483	180
28	131	255	420	547	259	224
29	548	162.5	603	791	259	729
30	454	162.5	466	791	320	725
31	405	213		746		801

Table 5 are the results for the parameters, BOD, COD, Suspended Solids , pH ,Total Nitrogen, Total Phosphorous (as P), and Ammonia. The parameters for Nitrate, Conductivity and OFG were only tested subsequent to issue of the Discharge Licence. A complete set of test results for these parameters including orthophosphate and Nitrite will be included in the second AER. The monitoring results demonstrate that the wastewater treatment plant is operating well and generally within the Discharge limits set out in the Licence.

Table 5:Monitoring of Primary Wastewater Discharge SW1

Sample Description and Date	BOD 5d with nitrification mg/l CKe066	Chemical Oxygen Demand (COD) mg/l CKe067	S/S mg/l	pH Value pH unit CKe124	Total P (as P) mg/l	Total N (as N) mg/l	Ammonia Nitrogen (as N) mg/l	Nitrate N mg/l	Cond' @ 25 DegC	OFG
13/01/10	2	15	5	7.8	0.35	6.5	0.1	NT	NT	NT
09/02/10	2	15	5	7.8	0.14	6.3	0.1	NT	NT	NT
09/03/10	4	15	5	7.7	0.63	13.8	0.2	NT	NT	NT
13/04/10	2	15	5	7.9	0.62	9.9	0.1	NT	NT	NT
11/05/10	2	15	5	8	0.2	5	0.1	NT	NT	NT
09/06/10	2	17	5	7.8	0.21	5.5	0.1	NT	NT	NT
13/07/10	2	15	5	7.9	0.74	11	0.1	NT	NT	NT
10/08/10	3	15	5	7.7	0.17	12.7	0.1	NT	NT	NT
14/09/10	2	15	5	7.8	0.1	11.7	0.1	NT	NT	NT
12/10/10	2	15	7	7.9	0.67	12.4	0.1	NT	NT	NT
09/11/10	2	15	5	7.8	0.05	5.2	0.1	NT	NT	NT
14/12/10	3	15	5	7.5	0.26	9.1	0.1	8.3	602	10

2.3 Ambient monitoring summary

The ambient monitoring results for the parameters as set out in **Schedule B.3** of the licence for the primary discharge is presented in table No 6 (Upstream) and table No 7 (Downstream)

Table 6 Ambient monitoring at aSW-I U upstream of SW I (222487E 146121N)

SampleDate	Ammonia(N) mg/l as N	BOD mg/l	Dissolved Oxygen mg/l	Ortho-phosphate mg/l as P	pH
14/05/2010	<0.02	2.26	10.52	0.028	7.65
14/07/2010	0.0853	1.17	8.61	0.0409	7.58
03/12/2010	0.0767	1.44	NT	0.037	8.06

Table 7 Ambient monitoring at aSW-Id downstream of SW I (222587E 145960N)

SampleDate	Ammonia(N) mg/l as N	BOD mg/l	Dissolved Oxygen mg/l	Ortho- phosphate mg/l as P	pH
14/05/2010	<0.02	2.68	10.42	0.0271	7.53
14/07/2010	0.0571	1.43	8.42	0.0465	7.26
03/12/2010	0.0723	1.49	NT	0.038	7.65

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

It is confirmed that the annual urban waste water information for agglomerations and treatment plants with a population equivalent greater than 500 for the year 2010 was submitted to the EPA in electronic format in February 2011.

2.5 Pollutant Release and Transfer Register (PRTR) – Report for previous year (2010)

This information has been submitted electronically to the EPA.

Both the AER/PRTR Emissions Data information (i.e all relevant worksheets including the Facility ID & Activities sheet) has been printed out and included in this section of the AER – see Appendix A attached.

2.6 Pollutant Release and Transfer Register (PRTR) – Report for current year.

This requirement is covered under the electronic submission in 2.5 above and no further details are included as part of this AER.

3. COMPLAINT AND INCIDENT REPORTS

3.1 Complaints Summary

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

Table 8: Complaints

Date & Time	Name of Complainant	Nature of Complaint	Response to Complaint	Closed (Y/N)
None	None	None	None	N/A

3.2 Reported Incidents Summary

There was no recorded incident in 2010.

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

4. Infrastructural Assessments and Programme of Improvements

4.1 Treatment Capacity

The total influent for the year 2010 was **164,658 m³** as per Tables No 3 and Table No 4.

The flow-weighted averaged influent BOD as calculated per Table 2 is 82.6 mg/l.

Killenaule population equivalent was determined as follows

[Total Influent Flow for 2010 * flow-weighted averaged influent BOD divided by (0.06 x 365 x 1000)]

Therefore PE = (164,658 x 82.6)/(0.06 x 365 x 1000) = **621 pe**

The design treatment capacity of Killenaule wastewater treatment plant is 1200 pe.

4.2 Storm water overflow identification and inspection report

This report is not required until the second AER and will be submitted then.

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

This report is not required until the second AER and will be submitted then.

5. Report on measures to address the supplementary measures for the subbasin waterbody Killenaule (IE_SE_16_2360)

This report is not required until the second AER and will be submitted then.

Appendix A

AER / PRTR Emissions Data Workbook -Attached

