SOUTH TIPPERARY COUNTY COUNCIL

CASHEL

WASTEWATER DISCHARGE LICENCE

REGISTER NUMBER D0171-01

ANNUAL ENVIRONMENTAL REPORT

1st JANUARY 2012 to DECEMBER 31ST 2012

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1.0 INTRODUCTION and EXECUTIVE SUMMARY

1.1 Introduction

The Environmental Protection Agency on 14th December 2012 granted South Tipperary County Council a Wastewater Discharge Licence (Register No D0171-01) in respect of the agglomeration named Cashel. One of the provisions of the licence (Condition 6.8) is that the Council submit to the Agency at the end of the 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 the Cashel Wastewater Treatment Plant and includes the information specified in Schedule D of the licence.

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 for 2012"

The Cashel Wastewater Treatment Plant is located on the Golden Road, on the outskirts of the town and was upgraded in 2005 to serve a p.e of 9,000. The plant operates an activated sludge process followed by settlement and includes screening, grit removal and chemical phosphorus removal. The plant also operates a sludge treatment facility consisting of sludge thickening and dewatering.

There are two discharge points from the agglomeration. The primary discharge occurs into the River Suir (SW1). The storm water overflow from the treatment plant (SW2) discharges into the St Patrick's rock stream, which flows to the River Suir. There are no secondary discharges from the agglomeration.

The report presented below details the monitoring reports for influent and effluent loading at the WWTP along with the ambient upstream and downstream monitoring of the receiving water.

1.2 Executive Summary

The Cashel wastewater treatment plant has continued to operate effectively in this reporting period. The treatment plant is operated and managed on behalf of South Tipperary County Council by AECOM Ltd under a 20 year DBO contract agreement.

A review of the final effluent results and compliance with the Emission Limit Values set out in licence shows that there was no exceedence of the ELV for BOD which had an average effluent value of 3.50 mg/l against an ELV of 25 mg/l while Suspended Solids and COD had effluent values of 4.1 mg/l and 24.4 mg/l against ELV's of 35 mg/l and 125 mg/ l respectively. The annual average effluent value for Ammonia was 4.0 mg/l against an ELV of 5mg/l.

As the discharge licence was only issued in December 2012 it was not possible to test for Ortho P. However this parameter will be tested and reported on for future AER reports.

The total flow for the year was 667,098 m3 while the current flow weighted average influent BOD to the plant is 256 mg/l giving a current pe loading of the plant of 7,777 pe. This compares with a plant design of 9,000 pe.

The average flow for the year was 1,823 m3 /day against a plant design of 2,024 m3/day which indicates that the plant is operating within it's hydraulic and treatment capacities.

A review of the ambient monitoring results for upstream and downstream of SW001 indicates that the discharge is having no adverse impact on the quality of the receiving waters.

The percentage reductions shown in the treatment efficiency report summary table No 6 show that reductions of 98.7%, 95.6% and 98.7% were achieved in BOD, COD and Suspended Solids respectively.

A reduction of 84% was achieved in the Ammonia levels while nutrient removal efficiencies for TP and TN were 96% and 50.1 % respectively.

It is noted that there were 3 exceedences on the ELV for Ammonia. However 2 of these exceedences fall within the allowable range set out under Condition 2 (Interpretation) of the licence. The annual average figure of 4.0 mg/l for Ammonia was within the discharge licence limit of 5mg/l. The licensee intends, through separate correspondence with the Agency (EPA), to seek an amendment to the licence in respect of the discharge limit set for Ammonia.

2.0 SUMMARY OF MONITORING REPORTS

2.1Summary report on monthly influent monitoring

Table 1 below is a tabular presentation of the wastewater treatment plant influent monthly monitoring results for BOD, COD, Suspended Solids, Total Nitrogen ,Total Phosphorus ,Ammonia and pH. Also set out below is the calculation of the pe equivalent load and the flow weighted average BOD load for the WWTP.

Table 1: Waste water treatment plant influent monitoring results for 2012.

	Flow (m3/day)	cBOD 5d with nitrification inhib (mg/l)	Chemical Oxygen Demand (mg/l)	Suspended Solids (mg/l)	Total Nitrogen as N (mg/l)	Total Phosphorus as P (mg/l)	Ammonia as N (mg/l)	pH (value)
10/01/2012	1394	210	444	323	37.4	5.27	25.6	7.7
07/02/2012	1594	255	434	314	31.7	5.31	18.9	7.7
06/03/2012	1598	445	882	532	49.8	9	29.1	7.6
03/04/2012	913	340	796	412	53	8.97	36.6	7.6
01/05/2012	1616	233	639	395	41.2	6.52	27.3	7.5
12/06/2012	1836	262	543	295	29.5	5.74	17.6	7.5
03/07/2012	3313	233	572	275	30.1	5.32	17.9	7.5
08/08/2012	1442	200	407	202	47.1	5.98	31.4	8
04/09/2012	1303	245	481	205	44.4	6.46	28.4	7.8
02/10/2012	1306	400	727	276	40.7	7.38	28.9	7.6
06/11/2012	1535	190	309	225	29.5	4.42	18.9	7.5
11/12/2012	2124	165	369	220	27.8	4.18	14.7	7.6
Average	***1664.5***	***267.7***	***550.3***	***306.2***	***38.5***	***6.2***	***24.6***	***7.6***

Calculation of the Population Equivalent load to the WWTP

The total influent for the year 2012 was 667,098 m3 per Table No below

The flow weighted averaged influent BOD as calculated per Table below is 256 mg/l

The Cashel population equivalent was determined by the following formula:

Total Influent Flow for 2012 x flow-weighted averaged influent BOD divided by (0.06x365x1000).

Therefore the pe = (667,098 x 256) / (0.06 x 366 x 1000) = **7,777**

Table 2: Calculation of the flow weighted average BOD for 2012

	Flow in m3/Day	cBOD 5d with nitrification inhib (mg/l)	cBOD with nitrification inhib (Kg/day)
10/01/2012	1394	210	292.5
07/02/2012	1599	255	407.7
06/03/2012	1598	445	711.1
03/04/2012	913	340	310.4
01/05/2012	1617	233	376.7
12/06/2012	1836	262	481.0
03/07/2012	3313	233	771.9
08/08/2012	1442	200	288.4
04/09/2012	1383	245	338.8
02/10/2012	1306	400	522.4
06/11/2012	1535	190	291.6
11/12/2012	2124	165	350.5
Total	***20060***	***3178***	***5143***

The Flow weighted average BOD is 5143 Kg x 1000 / 20060 m3 **= 256 mg/l**

2.2 Discharges from the agglomeration

Presented below in Tables 3 and 4 are the primary discharge point monitoring effluent results for the parameters as set out in Schedule B of the licence and a summary of the effluent monitoring and overall compliance with the licence Emission Limit Values (ELV's).

Table 3: Tabular presentation of the wastewater treatment plant effluent monitoring results with the associated Emission Limit Values (ELV's)

Date	Flow m3/Day	cBOD 5d with nitrification inhib mg/l	Chemical Oxygen Demand mg/l	Suspended Solids mg/l	Total Nitrogen (as N) mg/l	Total Phosphorus (as P) mg/l	Ammonia mg/l as N	pH Value pH unit
ELV's		**25 mg/l**	**125 mg/l**	**35 mg/l**	**n/a**	**n/a**	**5 mg/l**	**6 to 9**
10/01/2012	1394	5	34	6	23.8	0.22	**23.6**	7.8
07/02/2012	1594	4	23	4	13.6	0.17	2.7	7.5
06/03/2012	1598	3	25	4	19.5	0.17	2.5	7.1
03/04/2012	913	2	27	3	26.8	0.26	**5.1**	7.4
01/05/2012	1616	4	35	8	26.2	0.4	0.2	7.2
12/06/2012	1836	2	15	3	16.9	0.14	1	7.5
03/07/2012	3313	4	20	4	9.5	0.16	0.3	7.4
08/08/2012	1442	3	19	3	18.4	0.17	3.5	7.6
04/09/2012	1303	3	24	3	21.5	0.3	0.7	7.5
02/10/2012	1306	4	25	3	20.5	0.38	5.7	7.5
06/11/2012	1535	2	15	4	22.9	0.22	0.5	7.2
11/12/2012	2124	6	31	4	11.3	0.28	2.6	7.5
Average	***1664.5***	***3.5***	***24.4***	***4.1***	***19.2***	***0.24***	***4.0***	***7.4***

Comment: There were 3 exceedences on the ELV for Ammonia. However 2 of these exceedences fall within the allowable range set out under Condition 2 (Interpretation) of the licence. The annual average figure of 4.0 mg/l for Ammonia was within the discharge licence limit of 5mg/l. The licensee intends, through separate correspondence with the Agency (EPA), to seek an amendment to the licence in respect of the discharge limit set for Ammonia.

Table 4: Summary of the Effluent Monitoring and Compliance

	cBOD	**COD**	**SS**	**TN**	**TP**	**Amm**	**pH**
WWDL ELV	**25 mg/l**	**125 mg/l**	**35 mg/l**	**n/a**	**n/a**	**5 mg/l**	**6 to 9 value**
No of sample results	**12**	**12**	**12**	**12**	**12**	**12**	**12**
No of sample results above ELV	**0**	**0**	**0**	**n/a**	**n/a**	**3**	**0**
Annual Mean	**3.5**	**24.4**	**4.1**	**19.2**	**0.24**	**4.0**	**7.4**
Overall Compliance	**Pass**	**Pass**	**Pass**	**n/a**	**n/a**	**Pass**	**Pass**

Table 5: Cashel WWTP Primary discharge point flow recordings (m3/day) for 2012 as required under Schedule B (Monitoring) of the discharge licence

Day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	1,949	1,779	1,508	1,065	1,617	1,315	2,809	1,899	1,385	1,124	2,247	2,036
2	3,288	1,970	1,474	1,470	659	3,663	3,271	1,883	1,385	1,306	1,275	3,027
3	2,788	2,012	1,474	913	719	3,663	3,313	2,160	1,383	693	451	2,336
4	4,377	1,938	1,323	1,367	**387**	1,862	2,818	2,160	1,383	1,206	451	2,575
5	1,639	1,938	1,723	1,132	873	1,781	2,592	2,471	1,220	1,052	1,368	2,063
6	2,399	1,811	1,598	1,132	873	3,296	4,067	1,576	1,414	1,052	1,535	2,409
7	2,082	1,599	1,104	1,153	774	3,296	2,094	1,481	1,269	1,504	776	1,156
8	2,082	1,664	1,409	1,153	596	2,209	2,094	1,442	1,464	1,310	2,014	1,156
9	1,790	1,664	1,288	1,475	1,254	2,209	2,424	1,229	1,464	935	2,014	3,378
10	1,394	2,311	1,367	1,107	1,343	2,008	2,826	1,235	1,464	2,314	2,356	1,552
11	1,260	2,069	1,367	964	627	1,576	2,307	3,236	1,590	3,304	2,356	2,124
12	1,421	2,069	1,759	1,346	1,043	1,836	2,821	3,236	883	2,058	1,933	1,085
13	1,247	1,870	790	1,000	1,043	1,218	2,610	4,471	1,065	1,239	2,552	2,209
14	1,285	1,877	1,346	1,095	1,051	3,843	2,449	2,433	1,372	1,239	2,112	1,327
15	1,285	1,790	1,545	1,095	949	3,547	2,449	4,926	960	1,265	1,318	1,327
16	1,399	1,401	2,160	1,295	990	2,981	2,130	3,763	960	2,994	1,821	1,606
17	1,516	2,751	1,254	1,729	1,304	2,981	2,480	2,732	1,248	4,653	3,925	1,770
18	1,733	1,255	1,254	984	1,247	1,928	1,646	2,732	981	2,624	3,925	2,518
19	1,466	1,255	1,315	887	1,103	1,808	1,616	1,359	1,001	2,248	3,915	2,778
20	2,043	1,403	835	1,600	1,103	3,727	1,744	1,646	966	1,184	1,953	2,083
21	1,350	1,531	1,392	1,053	1,049	2,928	1,721	2,021	1,192	1,184	**6,064**	4,753
22	1,350	1,535	1,329	1,053	961	2,002	1,721	1,862	983	1,225	3,588	2,349
23	2,035	1,575	689	917	961	2,279	1,229	1,388	983	1,305	2,219	2,349
24	1,863	2,433	1,112	1,035	844	2,279	2,026	2,386	1,577	1,334	4,062	2,564
25	2,863	1,439	1,112	1,732	988	2,040	1,633	2,364	1,208	1,091	4,062	2,564
26	2,156	1,439	1,054	1,276	997	1,710	1,115	2,364	1,208	1,260	3,604	3,544
27	2,249	1,189	1,263	1,090	997	2,866	1,426	1,889	1,246	1,108	2,441	3,498
28	3,101	1,189	1,071	1,373	1,305	2,816	1,426	2,636	1,246	1,108	2,415	3,651
29	3,101	1,615	1,183	1,373	1,095	1,909	1,358	1,977	842	1,052	1,954	3,651
30	2,349		1,274	1,617	803	2,809	1,361	2,456	842	1,354	2,036	2,312
31	2,521		1,065.00		1,187		2,788	1,926		1,068		2,553
	63378	50368	40437	36479	30739	74383	68363	71339	36180	48392	72740	74302

Total	667,098
Min	387
Max	**6064**
Ave	1823

2.3 Treatment Efficiency Report

Presented below is a summary of the efficiency of the treatment process including information for all the parameters specified in the licence

Table 6: Treatment Efficiency Report Summary Table

	cBOD	COD	SS	TN	TP	Amm
Influent Mass Loading (Kg/day)	488	1003	558	70.2	11.3	44.8
Effluent Mass Loading (Kg/day)	6.38	44.48	7.47	35	0.44	7.3
% Efficiency Reduction	98.7%	95.6%	98.7%	50.1	96%	84%

2.4 Treatment Capacity Report

Presented below is a summary of the current and remaining treatment capacity of the treatment process.

Table 7: Treatment Capacity Report Summary Table

Hydraulic Capacity – Design	2024 m3/day
Hydraulic Capacity – Current Loading	1823 m3/day
Hydraulic Capacity – Remaining	201 m3/day
Organic Capacity – Design (pe)	9,000 pe
Organic Capacity – Current Loading (pe)	7,777 pe
Organic Capacity – Remaining (pe)	1223 pe
Will the capacity be exceeded in the next 3 years	No

2.5 Ambient monitoring summary

The ambient monitoring results for the parameters as set out in **Schedule B** of the licence is presented in Table No 8 (Upstream) and Table No 9 (Downstream) below. Also presented in Table 10 is a summary of the ambient monitoring. The monitoring results show that the discharge Is not having any significant impact on the quality of the receiving waters.

Table 8: Ambient monitoring at aSW-IU upstream of SW1 Cashel

Sample Date	Ammonia (mg/l)	BOD (mg/l)	D O (mg/l) O2	Ortho P (mg/l)	pH (value)	Temp (Deg C)
18/04/2012	0.496	2.49	NT	0.04	7.88	NT
27/06/2012	0.4363	1.02	NT	0.02	8.01	19.4
13/09/2012	0.1895	0.56	9.61	0.03	7.93	17.1
04/10/2012	0.14	0	10.44	0.03	8.10	11.2
Average	**0.32**	**1.02**	**10.03**	**0.03**	**7.98**	**15.9**
Max Value	**0.496**	**2.49**	**10.44**	**0.04**	**8.10**	**19.4**
95% tile	**0.47**	**2.28**	**10.1**	**0.03**	**7.9**	**17.1**

Table 9: Ambient monitoring at aSW-Id downstream of SW1

Sample Date	Ammonia (mg/l)	BOD (mg/l)	D O (mg/l) O2	Ortho P (mg/l)	pH (value)	Temp (Deg C)
18/04/2012	0.391	2.12	NT	0.03	7.84	NT
27/06/2012	0.433	0.95	NT	0.03	8.01	18.1
13/09/2012	0.1166	0.56	9.41	0.03	7.77	16.6
04/10/2012	0.1505	0	10.32	0.03	8.16	12.0
Average	**0.273**	**0.91**	**9.87**	**0.03**	**7.95**	**15.57**
Max Value	**0.433**	**2.12**	**10.32**	**0.03**	**8.16**	**18.1**
95% tile	**0.4**	**2.05**	**10.1**	**0.03**	**7.9**	**17.1**

Table 10: Ambient Monitoring Summary Table

Ambient Monitoring Point from WWDL	Irish Grid Reference	EPA Feature Coding Tool code	Is discharge Impacting on water quality
aSW-IU upstream of SW1	204077E 141137N	RS16S021430	No
aSW-ID downstream of SW1	203992E 140823N	RS16S021440	No

2.6 Data and reporting requirements under the Urban Waste Water Treatment Directive

It is confirmed that the annual urban wastewater information for agglomerations and treatment plants with a population equivalent greater than 500 for the year 2012 was submitted to the EPA in electronic form in 2012.

2.5 Pollutant Release and Transfer Register (PRTR) – Report for previous year (2011)

Submission of the AER/PRTR for 2012 for the Cashel Agglomeration is not required as instructed by the Agency (EPA) as the Discharge Licence for Cashel was only issued in December 2012.

3.0 Operational Reports Summary

3.1 Complaints summary

There were no complaints of an environmental nature related to the discharge to water from the Cashel Wastewater treatment Plant in 2012.

Table 11: Complaints

Number	Date and Time	Nature of Complaint	Cause of Complaint	Actions taken to resolve issue	Closed (Y/N)
N/A	N/A	None	None	N/A	N/A

3.2 Reported Incidents Summary

There was no recorded incidents in relation to the Cashel Wastewater Treatment Plant in 2012.

Table 12: Incidents Summary

Date and Time	Incident Description	Cause	Corrective Action	Authorities Contacted	Reported to EPA	Closed (Y/N)
N/A	None	None	N/A	N/A	N/A	N/A

Table 13: A summary of the incident details as required in the EPA reporting guidelines is set out below

No of Incidents in 2012	None
Number of Incidents reported to the EPA via EDEN in 2012.	None
Explanation of any discrepancies between the Two numbers above.	N/A

4.0 INFRASTRUCTURAL ASSESSMENT & PROGRAMME OF IMPROVEMENTS

4.1 Storm Water Overflow Identification and Inspection Report

This report shall be submitted to the Agency as part of the second AER, due in 2014.

4.2 Report on progress made and proposals being developed to meet Improvement Programme requirements.

This report shall be submitted to the Agency as part of the second AER, due in 2014.

4.3 Sewer Integrity Risk Assessment

The sewer integrity risk assessment for the Cashel Agglomeration will be carried out in 2013 and reported on in the AER due in 2014.

5.0 ENVIRONMENTAL LIABILITY AND FINANCIAL PROVSIONS

5.1 Environmental Liabilities and Financial Charges

The licensee has in place funding to meet the financial charges associated with the monitoring and enforcement costs payable to the Agency (EPA). These payments are made on an annual basis.

The current annual cost for the Cashel Agglomeration is €4,160.

The licensee shall, subject to assessment and funding availability provide an Environmental Liabilities Risk Assessment Report to the Agency as part of the 2nd AER due in 2014

6.0 RISK BASED ASSESSMENTS (Priority Substances)

6.1 Priority Substances Assessments

The requirement for a risk based assessment to identify the possible presence of priority substances will be reviewed and reported upon to the Agency by the licensee as part of the 2ND AER report due in 2014.

7.0 CERTIFICATION & SIGN OFF

I certify that this Annual Environmental Report (AER) for the reporting year 2012 for the Waste Water Discharge Licence No D0171-01 in respect of the Cashel Agglomeration is representative and accurate.

Signed: **Dated:**

Mr Jimmy Harney

Acting Director of Services

Environment and Water Services

South Tipperary County Council