



Clare County Council

Waste Licence W0170-01

Annual Environmental Report for 2011

**Name & location of facility: Lisdeen Recycling Centre &
Transfer Station, Cemetery Road,
Lisdeen, Kilkee, Co. Clare**

Submitted by:

Environment Section, Clare County Council, New Road, Ennis, Co. Clare.

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1) Reporting Period

1/01/11 – 31/12/11

2) Details of Activity

The principal waste activity of the Transfer Station is the compaction of solid waste into 30 m³ closed containers for subsequent disposal to landfill in accordance with Class 12 of the Third Schedule of the Waste Management Act, 1996. Other waste activity is the storage of non-recoverable waste received at the facility, prior to disposal at an appropriate facility in accordance with Class 13 of the Third Schedule.

Other waste recovery activities include recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes) in accordance with Class 2 of the Fourth Schedule, recycling or reclamation of metals and metal compounds in accordance with Class 3 of the Fourth Schedule, and recycling or reclamation of other inorganic materials in accordance with Class 4 of the Fourth Schedule. This covers the acceptance of waste oils, cooking oils, beverage cans, white goods, other metals, and glass at the facility.

3) Volume and composition of waste received during the reporting period.

The quantity of municipal solid waste accepted at the facility during the reporting period(s) was as follows:

Public Domestic Waste delivered to site	619.12	tonnes
Recyclable material delivered to site	440.23	tonnes
Total	1064.35	tonnes

The quantity of waste materials accepted for subsequent recycling/recovery for 2011 is as outlined in Table 3.1 below

Table 3.1

1	2	3	4
Material Type	E.W.C. Code	No. of collections	Tonnage
Domestic waste	20 00 00 20 03 01		619.12
Metals for recycling	20 01 40		21.68
Glass for recycling	20 01 02		176.68
Aluminium Cans	15 01 04		2.02
Plastic bottles	20 01 39		12.04
Steel cans	15 01 04		10.54
Car Batteries	16 06 01*		0.74
Newspapers	20 01 01		36.58
Waste Engine Oil	13 02 00		1.5
Cardboard	20 01 01		32.37
Tetrapak	15 01 01		1.594
Timber	20 01 38		43.4
Textiles	20 01 11		4.16
WEEE	20 01 36		52.337

The quantities of waste allowed for acceptance the facility under Schedule A of the licence at are as outlined in Table 3.2 below:

Table 3.2:

Waste Type	Maximum (Tonnes per annum)
Municipal Waste	1,800
Wastes for recovery/recycling	200 ^{Note4}
Total	2,000

Note 4: The amount of wastes accepted for recovery/recycling may be altered as long as the total accepted at the facility does not exceed 2000 tonnes per annum.

4) Summary report on emissions, including wastes from silt traps and interception sumps.

No desludging of the septic tank has taken place since installation. Loading on the tank is quite small with one w.c. and sink as well as run-off from waste transfer area.

5) Foul Water Emissions

There is no direct foul water discharge. Foul water is diverted to a septic tank unit, which in turn is discharged to a reed bed. This foul water is collected from w.c., sink unit, the transfer station shed, from the compactor and the bin transverse area. It comprises wash water and rainwater falling on the contaminated areas.

6) Surface Water Emissions

Surface water runoff from site roads and uncontaminated surfaces discharges to the surface water drains. There are no other emissions of any environmental significance from the facility.

7) Summary of Results and Interpretation of Environmental Monitoring.

Table 7.1. Lisdeen Transfer Station (WL170-1) Monitoring Schedule

Schedule D	Monitoring
D.1	Monitoring Locations
D.2	Waste Water
D.3	Landfill Gas
D.4	Surface Water, Groundwater and Leachate

Monitoring was conducted at the specified locations and frequencies as indicated in each of the above referenced Schedules of the Waste Licence, unless otherwise noted in this report. Monitoring locations are shown in Appendix 1. Wastewater monitoring has not been carried out to date as the discharge from the septic tank is directly to a percolation area. The reed bed system is now commissioned; however due to the low flow, it was not possible to obtain a sample from the system.

7.1. Landfill Gas

During this reporting period, landfill gas monitoring was carried out on a monthly basis at landfill gas wells L1 and L2. Monitoring was carried out in accordance with Schedule D.3 of the waste licence. Gas monitoring locations are shown in Appendix 1. Completed landfill gas monitoring forms for the period is available for inspection at the facility and can be forwarded if required. Landfill gas results for L1 and L2 are graphed in figures 7.1 and 7.2 below:

Figure 7.1:

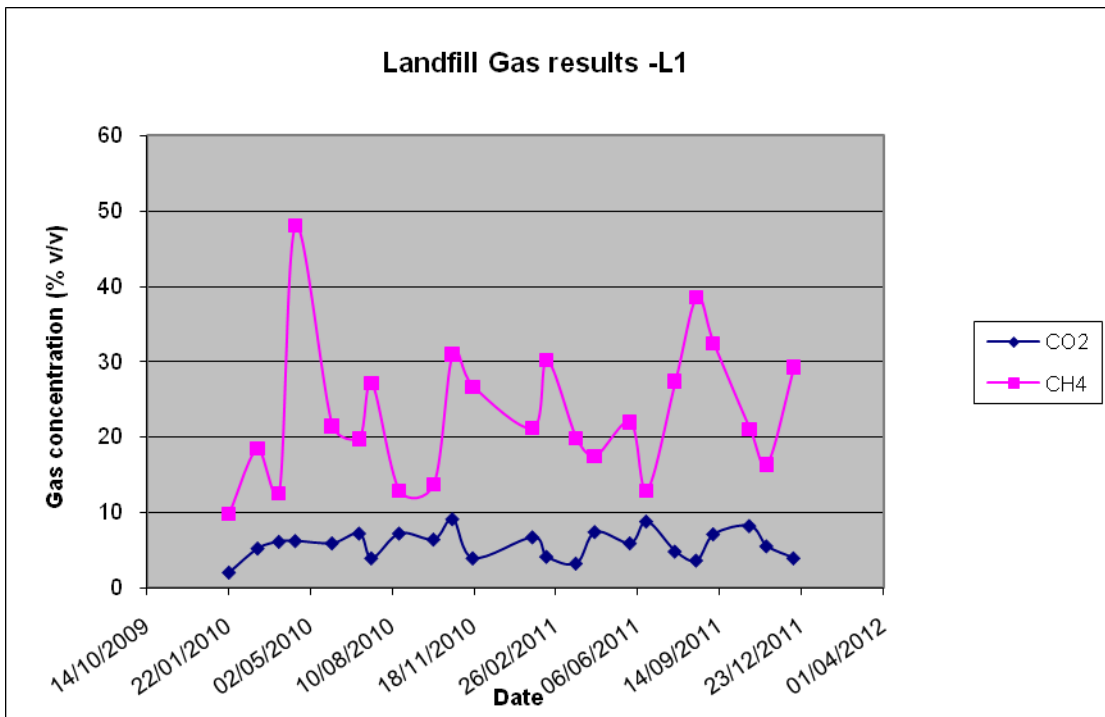
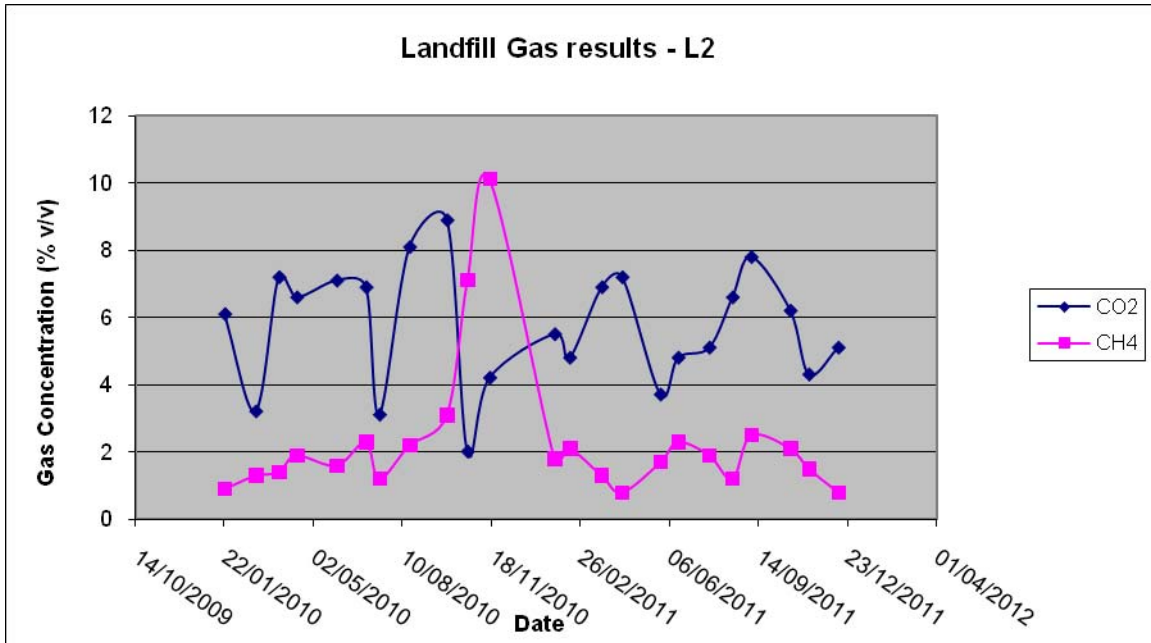


Figure 7.2:



Both leachate wells are located in waste; L2 is located in the centre of the waste body and L1 is close to the northwest site boundary

The methane concentration at L1 is significantly higher than at L2. This trend is in line with historic monitoring within the site. Methane at L1 during 2011 ranged between 13 to 39%v/v. However methane levels at L2 ranged at the low levels of 0.8 to 2.5%v/v.

Carbon dioxide levels for the majority of the year were similar at both locations with levels <10%v/v.

Landfill gas levels in the caretaker's office are continuously monitored using the online gas analyser. No methane or carbon dioxide was detected in the caretaker's office by either monitoring method during the 2011 and are within trigger levels as stated in Condition 6.4.1 of Waste licence 170-1.

Surface Water, Groundwater and Leachate.

Section 7.2-7.4 details comments made by TMS as part of their groundwater, surface water, and leachate monitoring reports as sampled on the 17th and 18th August 2011, combined with comments made by Clare County Council.

7.2 Surface Water

7.2.1a Water Quality Standards and Trigger values used for comparison

Although water is not abstracted for drinking water use from these surface water locations, it is useful to provide a benchmark for comparison of monitoring results and therefore the measured results are compared to the Water Quality Standards as presented below.

PARAMETER	WATER QUALITY STANDARDS			
	SURFACE WATER REGULATIONS [1]			[2]
	A1 MAC	A2 MAC	A3 MAC	SALMONID REGULATIONS
Conductivity, $\mu\text{S}/\text{cm}$ at 20 ^o C	1000	1000	1000	
Temperature, ^o C	25	25	25	NS
pH	5.5 – 8.5	5.5 – 9.0	5.5 – 9.0	> 6 < 9
Dissolved oxygen, mg/L	NS	NS	NS	NS
Dissolved oxygen, % Saturation	> 60%	> 50%	> 30%	50%, > 9 mg/l O ₂
BOD, mg/L O ₂	5	5	7	< 5
COD, mg/L O ₂	NS	NS	NS	NS
Total Ammonium, mg NH ₄ /L	0.2	1.5	4.0	1.0
Suspended solids, mg/L	50	NS	NS	<25
Chloride, mg/L Cl	250	250	250	NS

Phosphates, mg/L P2O5	0.5	0.7	0.7	NS
Sulphates, ml/L SO4	200	200	200	NS

[1] EC (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations, 1988 [S.I. No. 294 of 1989]

[2] EC (Quality of Salmonid Waters) Regulations, 1988 [S.I. No. 293 of 1988]

7.2.1b Trigger Levels

Clare County Council has proposed trigger levels for ammonia and BOD concentrations for the surface water monitoring locations around the site. These trigger levels are considered to highlight a significant change in water quality compared to normal results and require corrective action to be taken. The proposed trigger levels, which are yet to be agreed with the EPA are presented below in Table 7.2.1.

Table 7.2.1 Surface water trigger levels at Lisdeen Recycling Facility

Monitoring Location	SW1	SW2	SW3	SW5	SW5a	SW7
Ammonia Concentration (ppm)	2.5	-	10	12.5	-	1.2
BOD Concentration (ppm)	38	-	10	36	-	10

7.2.2 Evaluation of monitoring results

Surface water samples were collected during a visit to the Lisdeen Site on the 17th and 18th August 2011. Samples were collected using a grab sampling technique from six sampling locations in the vicinity of the waste facility. Conductivity, pH, dissolved oxygen (DO) and temperature of all samples were measured on-site during sample collection. Results are presented in Appendix II

The proposed trigger levels for the ammonia and BOD concentrations at the Lisdeen recycling centre have not been exceeded at any of the surface water monitoring locations for the annual monitoring carried out by TMS Environment Ltd with the exception of ammonia at SW1 (6.86mg/l). This is above the trigger value of 2.5mg/l. Elevated ammonia levels were also seen here in 2009(151mg/l) but the limited historic data for this location generally shows levels below the proposed trigger level.

In order to provide a benchmark for comparison of monitoring results, the results obtained during this survey for relevant parameters are compared with the Quality Standards for Surface Water, EC (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations, 1988 [S.I. No. 294 of 1989] and the EC (Quality of Salmonid Waters) Regulations, 1988 [S.I. No. 293 of 1988].

SW1

SW1 is located on Stream 1, upstream of the facility. The water quality for this monitoring location is outside the quality requirements of the Category A3 parameters as specified in the EC (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations. Results are elevated for COD (510mg/l), Chloride (13,679ppm), conductivity (32,800µS/cm) and suspended solids (189mg/l). All metal results at this location are within the expected concentration range.

As SW1 is upstream of the landfill, it is considered unlikely that the elevated parameter concentrations are as a result of activities within the recycling centre, and are more likely due to cattle access or slurry spreading not in accordance with the EC GAP regulations 2009 upstream of the facility. Furthermore, given that high levels of chloride, conductivity, and sodium recorded at the location, it is

likely that saline intrusion from local seawater is being experienced at this location.

SW2 & SW3

SW2 and SW3 are located on Stream 2. SW2 is located upstream of the facility and SW3 is located immediately downstream of the surface water discharge from the facility. Water quality at SW2 and SW3 is generally good but both monitoring locations show elevated results for COD, Chloride and conductivity.

The historic data for the site shows similar results for these parameters at this location in the past and the elevated results are most likely due to saline intrusion from the nearby sea water and this theory is supported with the high sodium levels seen at SW3 (8,490 ppm) and the low ammonia concentrations (<0.25mg/l).

SW5

SW5 is located on the southern boundary drain, where the drain rises. The results obtained for this location show a continued improvement in water quality in comparison to the historic data for this location. Typically, water quality has been poor at this location due to stagnant water gathering in the drain at the monitoring point.

SW5a

SW5a is located on Stream 3, which flows outside the site perimeter, parallel to the southern boundary drain. Stream 3 receives the runoff from two land drains to the northwest and southwest of the site. Water quality at SW5a is good with the location meeting the quality requirements of the Category A1 parameters as specified in the EC (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations for all parameters. Results obtained for this monitoring location are similar to the historic data available for the site.

SW7

SW7 is located on the main channel feeding to Poulnasherry Bay, downstream of all surface water discharges from the facility. This channel is cleansed by the tidal influx of salt water from Poulnasherry Bay. Elevated conductivity (43,100 $\mu\text{S}/\text{cm}$) and sodium levels (9240 ppm) at SW7 indicated the presence of estuarine water and the results obtained here are similar to the historic data available for this location.

Clare County Council began a river catchment survey of the Poulnasherry catchment in 2010, which the Lisdeen facility is located in, ensuring Good Agriculture practices are carried out in the area and therefore reducing point and diffuse sources of pollution into all water bodies in this catchment.

7.3 Groundwater

Groundwater wells BH1, BH3s, BH3d, BH4s and BH4d were sampled on the 18th August 2011. Monitoring locations are shown in Appendix 1.

Table 7.3.1 Groundwater water locations	
Location Reference	Description of location
BH1	Artesian bedrock well located outside the site, adjacent to the northeast boundary.
BH3d	Bedrock well located close to BH3s, downgradient of the main waste body.
BH3s	Overburden well located within the landfill, close to the southern site boundary.
BH4d	Bedrock monitoring well located in waste and downgradient of the main waste body.
BH4s	Overburden well located within the landfill, close to the southern site boundary.

7.3.1 Water Quality Standards and Trigger Values used for comparison purposes

Table 7.3.2 Extracted from E.C. (Drinking Water) Regulations, 2007 SI No. 106 of 2007

Parameter	Table [1]	Drinking Water Quality Standard	Deviations
Temperature	Not Listed	-	N/A
Conductivity	Table C	2500 µS/cm @ 20°C	none
pH	Table C	6.5 ≤ pH ≤ 9.5	none
Ammonium	Table C	0.23 mg/l N (0.30 mg/l NH ₄)	See trigger levels below
Total Organic Carbon	Table C	No abnormal change	N/A
Cadmium	Table B	0.005 mg/l	none
Chromium	Table B	0.05 mg/l	none
Iron	Table B	0.2 mg/l	BH3, BH3s, BH4
Lead	Table B	0.010 mg/l	none
Manganese	Table B	0.05 mg/l	none
Nickel	Table B	0.020 mg/l	none
Sodium	Table B	200 mg/l	none

[1] The notes above quote the Table in the regulations from which parametric or limit values were obtained

N/A Not applicable.

Trigger Levels

Clare County Council have proposed trigger levels for ammonia concentrations for the monitoring wells located around the site. These trigger levels are considered to highlight a significant change in water quality compared to normal results and require corrective action to be taken. The proposed trigger levels, which are yet to be agreed with the EPA are presented below in Table 7.3.3.

Table 7.3.3 Groundwater trigger levels at Lisdeen Recycling Facility

Monitoring Well	BH1	BH3	BH3s	BH4
Ammonia Concentration (ppm)	0.5	1.7	1.0	0.5

7.3.2 Evaluation of results

The proposed trigger levels for the ammonia concentrations at the Lisdeen recycling centre have not been exceeded at any of the groundwater wells for the annual monitoring carried out by TMS Environment Ltd.

Limit values from the Drinking Water Regulations (Statutory Instrument No. 106 of 2007) are shown in Table 7.3.2 above. Tables A and B of the Regulations contain parameter limit values which may not be exceeded. Table C contains limit values for indicator parameters. The groundwater wells monitored are not used for drinking water purposes and the standard of construction of a water supply well would be superior to the construction standard of monitoring wells. The water quality standards listed are shown for comparison purposes only. Some of the parameters monitored are presented in Table 2 above along with comments listing those parameters meeting with the maximum allowable concentration in drinking water.

Electrical conductivity and pH

All dissolved species contribute to conductivity. In Ireland the typical range is from about 300 $\mu\text{S}/\text{cm}$ to 1000 $\mu\text{S}/\text{cm}$. All results for the boreholes tested are below the limit values as defined in Table C of the Drinking Water Regulations. The pH values for all the boreholes are approximately neutral and are very

consistent across the site with results ranging from 6.7 to of 7.6 pH units for all borehole locations.

Ammonia

The results for ammonia levels at all boreholes monitored are within the proposed trigger levels set for the groundwater wells. The ammonia results are also below the limit values as defined in Table C of the Drinking Water Regulations in all cases. The ammonia results are generally comparable to the historic data for these locations.

Chloride

The typical chloride concentration in Irish groundwater is about 20ppm Cl. The results for chloride for the groundwater boreholes indicate concentrations in this range. The highest chloride concentration measured was 74ppm at BH3s. All chloride results are significantly below the parametric limit value of 250ppm Cl as specified in Table C of the regulations.

Total Organic Carbon:

The results obtained for the TOC concentrations at the site ranged from < 0.3 ppm at BH1 and BH4 to 3.6ppm measured at BH3s. There are no limit values for TOC for comparison purposes but the results are generally consistent with the historical data available for the groundwater at the site.

Metals

All heavy metals were reported as being below the laboratory limit of detection in the majority of cases. There were a number of exceptions where copper, manganese, zinc, boron and lead were detected in a number of wells.

Monitoring at well BH3s did show some positive results for a number of metals that were higher than any of the other wells. The metal results at BH3s were also slightly elevated from the historic data available for the site. Other than the slight

elevation seen at BH3s all other metal results obtained for this monitoring interval are generally consistent with the limited historic data available for the site.

7.4 Leachate

7.4.1 Evaluation of monitoring results

The leachate samples were collected from monitoring locations L1 and L2 on the 17th August 2011. Measurement results recorded for both L1 and L2 are very similar to the results obtained for these locations since 2008.

Both samples are relatively similar in composition, but the L2 sample does show higher concentrations of conductivity, ammonia, COD, chloride, TON, TOC and alkalinity when compared to the L1 sample, but this general trend is also noted in the limited historical data available. In general the results recorded for both monitoring locations are within the expected concentration ranges for the various parameters.

The Leachate results are presented in Appendix IV Table IV.

8) Resource Consumption Summary

Diesel

750 litres of diesel was used to power the 3-phase generator on site.

Electricity

It is estimated that approximately 3,185 units of electricity were used in 2011.

Water

Water supply to the site is via a connection to the group water scheme. Water usage on site is mainly for power washing yards, transfer station apron and hopper. Average water usage is approximately 3,000 litres monthly, with an approximate total of 36,000 litres used in 2011.

9) Development works undertaken during the period and timescale for proposed works.

Significant improvement works were conducted in 2011 at a number of the monitoring locations within the facility, including improving access to each location, together with the erection of safety barriers at monitoring points located adjacent to surface waters, and/or elevated locations.

Improvement works have been conducted on the drainage infrastructure within the site, primarily involving the removal of areas of vegetation which had begun to inhibit the flow of surface waters through the network. Due care and diligence was given to ensure that any soils in situ were not disturbed to ensure that underlying deposits of waste were not disturbed, or exposed.

Clare County Council invested in a new CCTV system to improve security within the site.

Clare County Council has received Part VIII Planning Permission to begin the remediation process. Clare County Council intend to begin works as soon as finances permit.

10) Full title and written summary of any procedures developed by the licensee during the previous year.

No procedures were developed during the past year.

11) Drum, Tank and Bund Testing.

An integrity test was carried out on the bund in March 2011 and all results have been submitted to the EPA.

12) Reported Incidents and Complaints Summaries.

There were no complaints received during the year and no incidents recorded at the facility.

13) Review of nuisance controls

No review of nuisance controls was carried out during 2011; no nuisances were noted at the facility during 2011 therefore a review was not considered to be necessary.

14) Schedule of Environmental Objectives and Targets

Objective 1

Comply with all aspects of the licence.

Target 1.1 - Every effort will be made to comply with all conditions of the waste licence by the prescribed dates.

The Senior Engineer, Executive Engineer in charge, Deputy Site Manager, Executive Chemist and Environmental Patrol Warden have responsibility for implementing this objective.

Objective 2

Ensure that sufficient funds are available to comply with condition 12 of the licence.

Responsibility for ensuring compliance with this objective lies with the Finance Officer of Clare County Council.

Objective 3

Increase the quantity of waste collected for recycling at the facility.

Target 3.1-Increase the quantities of cardboard and newspaper collected at the Recycling Centre. Suitable containers for each waste type will be provided on site and the public will be informed by means of appropriate awareness campaigns.

Target 3.2-Increase the quantities of glass, aluminium cans, and steel cans collected at the Recycling Centre.

The Senior Engineer, Environmental Services has responsibility for implementing this objective with the assistance of the Executive Engineer in charge and the Environmental Awareness Officer in the Environment Dept.

Objective 4

Improve facilities at the facility.

Target 4.1 - Make facility more user-friendly by providing containers and providing clear instructions as to what these are for. This will allow for proper segregation of recyclable streams. All bulky wastes and hazardous wastes will be stored in one particular area of the facility and this area will be secured thus allowing for greater supervision when these recyclable streams are being deposited. This will also eliminate traffic hazards. On occasion there is difficulty with turning/reversing manoeuvres at the facility due to large stockpiles of white goods and large recycling receptacles.

Target 4.2 - Provision of additional recyclable streams by year-end.

The Executive Engineer in charge has responsibility for implementing this objective.

Objective 5

Improve correspondence with the E.P.A.

Target 5.1 - Council will make every effort to reply to letters of correspondence received from the Agency by the requested dates.

The Executive Engineer in charge and Senior Staff Officer have responsibility for implementing this objective.

Objective 6

Comply with condition 3.10.1

Target 6.1 - Install by mid-2008 an interceptor as per condition 3.10.1 of the waste license, as part of overall landfill remediation programme.

This will be installed when funds become available.

The Executive Engineer in charge will have responsibility for implementing this objective.

Objective 7

Advance the Restoration and Aftercare Plan.

Target 7.1 - Implement the first phase of the Restoration and Aftercare plan as agreed with the Agency.

The Senior Executive Engineer, Executive Engineer, Finance Officer and Senior Staff Officer have responsibility for implementing this objective.

Time scale

A requisition for funding is with the DOEHLG at present. When this funding becomes available details of the Restoration and Aftercare plan will be submitted.

Designation of Responsibilities

The Senior Engineer, Environmental Services Section of Clare County Council has overall responsibility for the implementation of these objectives. The specific responsibilities for each objective are outlined in the description.

15) Progress of objectives and targets

Objective 1	This is ongoing and mainly successful, the licensee will continue to aim for maximum compliance.
Objective 2	Funding has been made available and the licensee will continue to ensure funding is made available.
Objective 3	Recyclable material amounted to 41.4% of all waste accepted at the facility in 2011.
Objective 4	The licensee placed additional signage to improve user friendliness on the site. A new concrete base was installed in the main recycling area which improves greatly the safety and layout of the site. The licensee will continue to review the site layout in order to provide the best possible service. We introduced the following new waste streams: rigid plastics and fluorescent tubes (WEEE).
Objective 5	Correspondence with EPA as set out by EPA is an ongoing objective, the licensee will continue to progress this objective.
Objective 6	Installation of the oil Interceptor will form part of the remediation project.
Objective 7	This project will proceed when funding becomes available

16) Financial Provision

A sum of €222,430 has been set aside in the 2012 Clare Co. Council Budget for the operation of the facility. Additional monies are being sought through grants from the Department of the Environment and Local Government for the capital works relating to the Restoration and Aftercare of the Site.

Appendix I
Location of Monitoring Points

Appendix II
Summary of Surface Water Monitoring Results

Table II: Surface water results at Lisdeen facility (18th August 2011)

Sample Type:	Surface Waters					
Location:	Lisdeen Transfer Station					
Date:	18 th August 2011					
Sampled By:	TMS Environmental					
Variables	SW1	SW2	SW3	SW5	SW5a	SW7
Biochemical Oxygen Demand (ppm)	24.24	3.64	2.05	16.17	<2	<2
Boron (ppm)	3.31	0.73	3.9	0.43	0.23	4.24
Calcium (ppm)	296	87.5	336	81.2	32.1	353
Cadmium (ppb)	<0.006	0.003	0.001	0.001	<0.005	<0.005
Chloride (ppm)	13679	2330	13084	162	20	17247
Chemical Oxygen Demand (ppm)	510	64	520	111	20	550
Electrical Conductivity (uS/cm)	32800	6570	38,500	1304	363	43100
Chromium (ppb)	<0.005	0.043	0.0043	0.002	0.0007	0.004
Copper (ppb)	0.0002	0.015	0.01	0.011	0.002	0.003
Temperature (Celcius)	17.2	15.8	15	13.3	13.2	16.5
Iron (ppb)	1.14	0.72	0.019	2.75	<.19	<.19
Potassium (ppm)	436	68	326	18.7	1.55	350
Magnesium (ppm)	866	138	1030	34	11	1110
Manganese (ppb)	0.108	0.354	0.186	0.566	<.004	0.072
Sodium (ppm)	7200	1210	8490	120	37.4	9240
Ammoniacal Nitrogen (ppm)	6.86	<0.25	<0.25	<0.25	<0.25	<0.25
Nickel (ug/l)	0.006	0.023	0.01	0.01	<0.002	0.007
Lead (ppb)	0.021	0.041	0.038	0.022	0.008	0.015
pH	7.4	7.95	6.38	6.82	6.95	7.45
Total Suspended Solids (ppm)	189	25	52	87	<5	91
Zinc (ppb)	0.027	0.102	0.058	0.071	0.012	0.013

Appendix III
Summary of Groundwater Monitoring Results

Table III: Groundwater water results at Lisdeen facility (18th August 2011)

Sample Type:		Groundwater				
Location:	Lisdeen Transfer Station					
Date:	18th August 2011					
Sampled By:	TMS Environmental					
Parameter	BH1	BH3	BH3s	BH4	BH4s	Limits(1)
Alkalinity (ppm)	265.28	283.89	283.89	269.93	262.95	No abnormal change
Boron (ppm)	0.48	0.58	1.62	0.37	0.27	1
Calcium (ppm)	71	78.9	47.4	48.6	43.4	200
Cadmium (ppm)	<0.0006	0.0008	<0.0006	0.0006	0.0007	5
Chloride (ppm)	6.9	69.9	74.3	68.4	69.4	30
Cyanide (ppm)	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Electrical Conductivity (uS/cm)	725	754	705	736	365	1000
Chromium (ppb)	<0.0007	<0.0007	0.0059	<0.0007	<0.0007	30
Copper (ppm)	0.003	0.004	0.004	<.001	0.002	30
Iron (ppm)	<.19	0.68	1.73	0.36	<.19	200
Fluoride (ppm)	0.169	0.175	0.182	0.194	0.214	1
Mercury (ppm)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	1
Potassium (ppm)	2.87	3.88	2.45	3.26	3.04	5
Magnesium (ppm)	23	26	18	16	14	50
Manganese (ppb)	0.514	0.522	0.226	0.097	0.013	50
Sodium (ppm)	76.2	82.9	83.2	107	108	150
Total dissolved solids (mg/l)	388	454	411	400	455	Not specified
Temperature (Celsius)	14.6	13.1	13	13.5	13.6	25
Ammoniacal Nitrogen (ppm)	0.25	<0.019	<0.019	<0.019	<0.019	0.15mg/l (ammonium)
Nickel (ppm)	<0.019	<0.02	0.204	<0.02	<0.02	20
Orthophosphate P ppm	<0.019	0.126	0.294	0.04	0.024	0.03 (Orthophosphate)

Lead (ppm)	0.007	0.005	0.057	<0.005	<0.005	10
pH	7.6	6.73	6.78	6.77	6.84	6.5-9.5
Sulphate (ppm)	5.04	3.86	18.76	4.79	5.89	200
Total Organic Carbon (ppm)	<0.03	0.6	3.6	<0.3	2.9	No abnormal change
Total Oxidised Nitrogen (ppm)	0.53	0.55	0.23	0.33	0.5	No abnormal change
Total phosphorus (ppm)	<0.019	<0.019	0.204	<0.019	<0.019	
Zinc (ppm)	0.01	0.023	0.014	0.008	0.007	100

Limits quoted are Interim Guidance Values from EPA document "Towards setting guidance values for protection of Groundwater in Ireland"

Appendix IV
Summary of Leachate Monitoring Results

Table IV: Leachate results at Lisdeen facility (17th August 2011)

Sample Type:	Groundwater	
Location:	Lisdeen Transfer Station	
Date:	17/08/2011	
Sampled By:	TMS Environmental	
Parameter	L1	L2
Alkalinity (ppm)	174.53	1640.54
Biochemical Oxygen Demand (ppm)		
Boron (ppb)	0.25	1.41
Calcium (ppm)	85.4	159
Cadmium (ppb)	1	<0.6
Chloride (ppm)	14	435
Cyanide (ppm)	<0.01	<0.01
Chemical Oxygen Demand (ppm)	136	214
Electrical Conductivity (uS/cm)	445	4500
Chromium (ppb)	1.2	4.2
Copper (ppb)	11	1
Iron (ppb)	270	6860
Fluoride (ppm)	0.186	0.24
Mercury (ppb)	<0.01	<0.01
Potassium (ppm)	7.08	140
Magnesium (ppm)	12	178
Manganese (ppb)	0.047	1.01
Sodium (ppm)	21.9	350
Ammoniacal Nitrogen (ppm)	<0.25	262
Orthophosphate P	0.66	<.08
Lead (ppb)	20	17
pH	7.22	6.02
Sulphate (ppm)	37.57	10.32
Total Organic Carbon (ppm)	9.4	38
Total Oxidised Nitrogen (ppm)	0.4	6.8
Total phosphorus (ppm)	0.025	0.322
Temperature C	16.3	13.6

[Guidance to completing the PRTR workbook](#)

AER Returns Workbook

Version 1.1.13

REFERENCE YEAR	2011
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1. FACILITY IDENTIFICATION

Parent Company Name	Clare County Council
Facility Name	Lisdeen Recycling Centre & Transfer Station
PRTR Identification Number	W0170
Licence Number	W0170-01

Waste or IPPC Classes of Activity

No.	class_name
3.12	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
4.13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.
4.2	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
4.3	Recycling or reclamation of metals and metal compounds.
4.4	Recycling or reclamation of other inorganic materials.
Address 1	Cemetery Road
Address 2	Lisdeen
Address 3	Kilkee
Address 4	Co Clare
	Clare
Country	Ireland
Coordinates of Location	-9.61238 52.6695
River Basin District	IEGBNISH
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Patrick Mullane
AER Returns Contact Email Address	pmullane@clarecoco.ie
AER Returns Contact Position	Enforcement Officer
AER Returns Contact Telephone Number	065-6846331
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	0
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
50.1	General
50.1	General

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

Is it applicable?	
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 ?	

4.1 RELEASES TO AIR

[Link to previous years emissions data](#)

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

POLLUTANT		METHOD			Please enter all quantities in this section in KGs			
No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	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 B : REMAINING PRTR POLLUTANTS

POLLUTANT		METHOD			Please enter all quantities in this section in KGs			
No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	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		METHOD			Please enter all quantities in this section in KGs			
Pollutant No.	Name	M/C/E	Method Code	Method Used Designation or Description	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:

Lisdeen Recycling Centre & Transfer Station

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	
Total estimated methane generation (as per site model)	0.0			N/A
Methane flared	0.0			0.0 (Total Flaring Capacity)
Methane utilised in engine/s	0.0			0.0 (Total Utilising Capacity)
Net methane emission (as reported in Section A above)	0.0			N/A

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

[PRTR#: W0170 | Facility Name : Lisdoon Recycling Centre & Transfer Station | Filename : W0170_2011(1).xls | Return Year : 2011 |

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only concerns Releases from your facility

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

POLLUTANT		RELEASURES TO WATERS			Please enter all quantities in this section in KGs			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	QUANTITY		
			Method Code	Designation or Description		T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
19	Chromium and compounds (as Cr)	C	PER		0.0	0.00862	0.0	0.00862
79	Chlorides (as Cl)	C	PER		0.0	716.963	0.0	716.963
82	Cyanides (as total CN)	C	PER		0.0	3.139	0.0	3.139
20	Copper and compounds (as Cu)	C	PER		0.0	0.0919	0.0	0.0919
83	Fluorides (as total F)	C	PER		0.0	0.6801	0.0	0.6801
21	Mercury and compounds (as Hg)	C	PER		0.0	0.000319	0.0	0.000319
23	Lead and compounds (as Pb)	C	PER		0.0	0.05907	0.0	0.05907

* 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		RELEASURES TO WATERS			Please enter all quantities in this section in KGs			
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	QUANTITY		
			Method Code	Designation or Description		T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
306	COD	C	PER		0.0	558.77	0.0	558.77
357	Iron	C	PER		0.0	11.383	0.0	11.383
338	Potassium	C	PER		0.0	234.8	0.0	234.8
320	Magnesium	C	PER		0.0	303.33	0.0	303.33
321	Manganese (as Mn)	C	PER		0.0	0.0166	0.0	0.0166
341	Sodium	C	PER		0.0	593.8	0.0	593.8
332	Ortho-phosphate (as PO4)	C	PER		0.0	1.18	0.0	1.18
238	Ammonia (as N)	C	PER		0.0	419.08	0.0	419.08
343	Sulphate	C	PER		0.0	76.47	0.0	76.47
305	Calcium	C	PER		0.0	390.18	0.0	390.18

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

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

| PRTR# : W0170 | Facility Name : Lisdeen Recycling Centre & Transfer Station | Filename : W0170

09/07/2012 12:44

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	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 B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	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

4.4 RELEASES TO LAND

[Link to previous years emissions data](#)

| PRTR# : W0170 | Facility Name : Lisdean Recycling Centre & Transfer Station | Filename : W0170_2011(1).xls | Return Year : 2011 |

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SECTION A : PRTR POLLUTANTS

RELEASES TO LAND			Please enter all quantities in this section in KGs				
POLLUTANT		METHOD		QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) 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 B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO LAND			Please enter all quantities in this section in KGs				
POLLUTANT		METHOD		QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) 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

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR#: W0170 | Facility Name : Lisdeen Recycling Centre & Transfer Station | Filename : W0170_2011(1).xls | Return Year : 2011 |

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Please enter all quantities on this sheet in Tonnes

5

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility	Non	Haz Waste : Address of Next Destination Facility	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used		Haz Waste : Name and Licence/Permit No of Recover/Disposer	Non Haz Waste : Address of Recover/Disposer			
Within the Country	20 03 01	No	619.2	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	CWMF Clare Co. Co.,W109-01		Ballyduffbeg,Inagh,Clare,,Ireland		
Within the Country	20 01 40	No	21.68	metals	R4	M	Weighed	Offsite in Ireland	Hegarty Metals,WFP-LK-10-001-01		Ballysimon Road ,Limerick City ,Limerick,,Ireland		
Within the Country	20 01 02	No	176.68	glass	R5	M	Weighed	Offsite in Ireland	Mr. Binman,W062-02		Luddenmore,Grange,Kilmallock,Co. Limerick,Ireland		
Within the Country	15 01 04	No	10.56	metallic packaging	R4	M	Weighed	Offsite in Ireland	Clare Waste & Recycling Co. Ltd.,WFP-CE-08-0002-01		Tuamgraney,Scariff,Co. Clare,,Ireland		
Within the Country	20 01 39	No	12.04	plastics	R3	M	Weighed	Offsite in Ireland	Clean Irl.,002/07/WPT/CL		Cree,Kilrush,Co. Clare,,Ireland		
Within the Country	16 06 01	Yes	0.74	lead batteries	R4	M	Weighed	Offsite in Ireland	Enva Ireland,W0184-01		Clonminam Ind. Estate,Portlaoise,Laois,,Ireland	Enva Ireland,W0184-01,Clonminam Industrial Estate,Portlaoise,Laois,,Ireland	Clonminam Industrial Estate,Portlaoise,Laois,,Ireland
Within the Country	20 01 01	No	68.95	paper and cardboard	R3	M	Weighed	Offsite in Ireland	Clean Irl.,002/07/WPT/CL		Cree,Kilrush,Co. Clare,,Ireland		
Within the Country	13 02 04	Yes	1.5	mineral-based chlorinated engine, gear and lubricating oils	R9	M	Weighed	Offsite in Ireland	Enva Ireland,W0184-01		Clonminam Ind. Estate,Portlaoise,Laois,,Ireland	Enva Ireland,W0184-01,Clonminam Industrial Estate,Portlaoise,Laois,,Ireland	Clonminam Industrial Estate,Portlaoise,Laois,,Ireland
Within the Country	15 01 05	No	1.59	composite packaging	R3	M	Weighed	Offsite in Ireland	Clean Irl.,002/07/WPT/CL		Cree,Kilrush,Co. Clare,,Ireland		
Within the Country	20 01 38	No	43.4	wood other than that mentioned in 20 01 37	R3	M	Weighed	Offsite in Ireland	Clare Waste & Recycling Co. Ltd.,WFP-CE-08-0002-01		Tuamgraney,Scariff,Co. Clare,,Ireland		
Within the Country	20 01 11	No	4.16	textiles	R3	M	Weighed	Offsite in Ireland	All-Tex Recyclers Ltd.,N/A		1 Ballycregagh Road,Cloughmills,Ballymena		
Within the Country	20 01 36	No	52.337	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	R4	M	Weighed	Offsite in Ireland	Enva Ireland,W0184-01		Entrim,Ireland		
Within the Country	15 01 04	No	2.02	metallic packaging	R4	M	Weighed	Offsite in Ireland	Mr. Binman,W062-02		Clonminam Ind. Estate,Portlaoise,Laois,,Ireland		
											Luddenmore,Grange,Kilmallock,Co. Limerick,Ireland		

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

[Link to previous years waste data](#)

[Link to previous years waste summary data & percentage change](#)