COMHAIRLE CHONTAE AN CABHÁIN

CAVAN COUNTY COUNCIL



Annual Environmental Report 2008

Bailieborough Landfill WL 91-1

Document Control Sheet

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Cavan County Council



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Finance Department 049-437-8300

Roads 049 437 8300

Housing 049 437 8300

Community & Enterprise 049-437-8602

Water Services

Declaration

14

An Cabháin

Cavan

Cavan County Council hereby certifies that the content of the full pdf AER W0091-012008AER.pdf uploaded to the EPA website is a true copy of the original AER.

Signed

mead fox Dated 12/ June 09

Sincad Fox Landfill Operations Manager Cavan County Council

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1. Introduction

Bailieborough Landfill has been operated as waste disposal facility by Cavan County Council since the late 1960s. The landfill is located on the outskirts of the town of Bailieborough, (c. 1 km from town centre), in the town land of Tanderagee, which was a commercially exploited bog. The site was operated as a traditional landfill constructed on peat and relies on the properties of the peat bog for attenuation, dilution and dispersal. The total area of the site comprises 2.23 hectares.

A Waste Licence for the facility was issued by the EPA on 22nd February 2002, Ref WL 91-1. Condition 11.6 of Waste Licence Ref. 91-1 requires the submission of an Annual Environmental Report for Bailieborough Landfill facility. This document is produced in order to comply with requirements of Condition 11.6.

The site at Bailieborough was closed in 2001. Prior to closing the site a temporary cap was placed on site. The reporting period for the purposes of this Annual Environmental Report (AER) is January 1st 2008 to December 31st 2008. This Annual Environmental Report (AER) has been prepared in accordance with the conditions of the Waste Licence and the EPA "Draft Guidance on Environmental Management Systems and Reporting to the Agency, 1999". Final capping and restoration details are presented in section 3.

2. Waste Management at the Facility.

It is estimated that the quantities of waste accepted landfill came to a total of 65,000 tonnes. See the table 2.1a & 2.1b for quantities of waste accepted into the landfill from 1988 to 1999. There was no waste accepted into the facility during the reporting period 2008.

Year	<u>Inert</u> <u>Waste</u>	<u>Non-Hazardous</u> Waste (tonnes per annum)	Hazardous Waste (tonnes per annum)	<u>Total Waste</u> Quantities (tonnes per annum)
1988	40	960	Minor Quantities	1000
1989	41	959	Minor Quantities	1000
1990	46	954	Minor Quantities	1000
1991	41	959	Minor Quantities	1000
1992	70	1630	Minor Quantities	1700
1993	79	1821	Minor Quantities	1900
1994	83	1917	Minor Quantities	2000
1995	84	1916	Minor Quantities	2000
1996	154	3546	Minor Quantities	3700
1997	208	4792	Minor Quantities	5000

Table 2.1a Waste Quantities

1998	358	8569	Minor Quantities	8927
1999	400	8600	Minor Quantities	9000
<u>Totals</u>	<u>1604</u>	<u>36623</u>		<u>38227</u>

Table 2.1b Waste Quantities

Waste Type	Quantity
Inert Waste at the landfill for cover, capping and restoration purposes only.	80,000 tonnes maximum
Segregated Municipal and segregated Commercial wastes at the Bring Centre (collection for recovery only) or at a Civic Waste Facility (collection for recovery and collection for disposal) if installed in accordance with Condition 3 operated in accordance with Condition 5	A maximum of 5,100 tonnes per annum household waste and 3,550 tonnes per annum commercial waste.

Under the terms of Waste Licence 91-1 no other waste types are acceptable at Ballyjamesduff Landfill Site. At present there are no wastes accepted for any purpose. There was no waste accepted at this site during the reporting period. There was no activity carried out at this site other than monitoring required by EPA licence.

Waste Licence 93-1 allows for the operation of a Civic Amenity Facility at Bailieborough Landfill Site. To date there are no plans in place to operate such a facility at the site.

3. Restoration of Completed Cells

Cavan County Council appointed consultants Malachy-Cullen to prepare a final restoration plan and detailed tender documents for site works. Final restoration works, including capping of the site within the timeframe specified, were then carried out. Table 3.1 overleaf gives a summary outline of the capping system put into place in Bailieborough Landfill.

a.	An upper component consisting of 150mm of topsoil on
b.	An 850mm layer of subsoil on
c.	A geo-composite surface water drainage layer on
d.	An LLDPE liner on
e.	A geo-composite gas collection layer on
f.	250mm regulation layer (where necessary)
g.	Re-graded landfill surface or filled waste
a.	An upper component consisting of 150mm of topsoil on
b.	An 850mm layer of subsoil on
c.	A geo-composite surface water drainage layer on
d.	An LLDPE liner on
e.	A geo-composite gas collection layer on
f.	250mm regulation layer (where necessary)
g.	Re-graded landfill surface or filled waste

Table 3.1 Summary Capping System

Further details of lining works were submitted to the in the latest Waste Licence Application. The capping lining system was constructed to a very high standard and within all contractual and EPA guidelines.

4. Summary Report on Emissions and Environmental Monitoring

The required monitoring programme at Bailieborough Landfill is specified in Schedule D of the waste licence 91-1. The emission limit values (ELV) are specified in Schedule C. Monitoring is carried out by BHP Laboratories on behalf of Cavan County Council. The frequency for reporting Environmental monitoring data is detailed in Schedule E of the licence. The following monitoring data was reported to the Agency on a quarterly basis:

- Landfill Gas
- Surface water
- Groundwater

Field sampling is carried out by Cavan County Council analysis relating to Groundwater and Surface waters is also conducted by the EPA in County Monaghan. Please see Appendix 1 for Bailieborough Landfill WL 91-1 AER 2008 3 Annual report of Ground water and Surface water monitoring results. In addition to this the Annual Pollution Release Transfer Register (PRTR) workbook is submitted to the EPA as part of the AER. See copy of the workbook in Appendix 3.

Bailieborough Landfill					
	Schedule D: Monitoring				
Tandergee, Bailieborough, Co. Cavan Waste Licence No. 91-1					
Landfill Gas	Noise	Surface Water	Groundwater	Leachate	
Stations	Stations	Stations	Stations	Stations	
MW7	n/a	SW1	MW10S Upstream	MW9	
		SW2	MW10D Upstream		
			MW11S to be re-drilled ¹ Downstream		
			MW11D to be re-drilled 1		
			Downstream		
			MW12S to be re-drilled 1 Downstream		
			MW12D to be re-drilled 1		
			Downstream		
Note 1	Wells to be re-drilled	in Spring 2009			

Table 4.1 Overall Site Monitoring Locations

As is shown above there are 4no. downstream groundwater wells to be drilled in 200 in order to bring us into full compliance with the licence. These wells were lost with road works and other works over time.

Landfill Gas

Schedule D.2 of the waste licence for the Bailieborough landfill site, specifies the required gas monitoring programme. Table 4.1 indicates the monitoring locations and table 4.2 specifies the overall site monitoring frequency. See Appendix 2 for Updated Site Map.

Table 4.2 Gas Monitoring Frequency

Parameter	Frequency
Methane (CH ₄) %v/v	Quarterly
Carbon Dioxide (CO ₂) %v/v	Quarterly
Oxygen (O ₂) % v/v	Quarterly
Atmospheric Pressure	Quarterly
Temperature	Quarterly

Landfill gas at the facility is analysed on a quarterly basis by BHP Laboratories, New Road, Thomondgate, Limerick by means of an Infra-Red Gas Analyser (GA2000) which is calibrated once annually. There is one gas monitoring point at the facility (MW7). Gas monitoring commenced on site in September 2002 and is ongoing. Since this time, the quantities and constituents of Landfill gas being generated are not having a significant impact on the environment as the ELVs for CH_4 and CO_2 were not exceeded.

The Annual PRTR will be submitted to the Agency as part of this annual report. Gas emissions are being controlled by installing a passive trenching and venting system in the capping layer during final capping works. There is no evidence of any negative impact associated with this closed landfill. This is supported by monitoring results for the reporting period

Noise Monitoring

Noise Monitoring is no longer required at this closed ill as there are no associated activities that would result in significant noise levels. This is supported by previously recorded noise monitoring reports.

Surface Water

Schedule D.4 of the waste licence, specifies the required surface water monitoring programme. Table 4.3 sets out the monitoring requirements.

Table 4.3 Surface Water Monitoring Requirements

Parameter	Frequency	<u>Comments</u>
Visual Inspection	Quarterly	
Quality Monitoring	Quarterly	Field sampling and Chemical analyses

The stream flows from north to south along the eastern boundary of the site. It is likely that the bulk of any impact from the landfill is confined to local shallow ground waters and surface waters. The Annual Report covering surface water monitoring is presented in Appendix 1. In summary the landfill is not having a contribution to the discoloration of the waters downstream of the site. There

was little difference from the monitoring results in the quality of the two waters upstream and downstream. The analytical results suggest the water quality both upstream and downstream of the facility is of a good standard, with BOD, Ammonia and Total Suspended Solids remaining consistently below the expected limit values.

Currently there are two surface water monitoring points at the facility labelled SW1 and SW2. Field sampling is carried out once every quarter to determine the quality of surrounding waters. In December 2002, Surface waters SW1 and SW2 were also analysed for dangerous substances.

Groundwater

The Annual Report covering groundwater monitoring is presented in Appendix 1. In summary the groundwater is of a relatively uncontaminated nature. is conclusion is supported from the monitoring results from the reporting period. There are two downstream monitoring boreholes to be installed in Spring 2009.

Table 4.4

Existing Monitoring points & planned Borehole Drilling

Groundwater	
Stations	
MW10S	Existing
MW10D	Existing
MW11S to be re-drilled 1	Planned
MW11D to be re-drilled 1	Planned
MW12S to be re-drilled 1	Planned
MW12D to be re-drilled 1	Planned

As is shown above there are 4no. groundwater wells to be drilled in 2009. These will be included into the monitoring schedule.

During sampling standard portable instrument comprising a probe which emits an audible signal on contact with water is used to determine the ground water levels in the boreholes. As noted earlier water samples are lifted by means of a bailer. Groundwater level and test results are forwarded to the Agency in quarterly reports. Groundwater quality has remained good throughout the year as supported in the monitoring results.

5. Environmental Objectives and Targets.

A total of 9 Targets and Objectives have been identified. These can be grouped into two categories:

- 8no. Licence Related Targets and Objectives
- 1no. Identified Targets and Objectives

These targets and objectives are listed in Tables 5.1 and 5.2 below which also identifies progress to date in relation to these targets.

Table 5.1a Environmental Targets & Objectives – Licer	nce Related
---	-------------

No.	Ref.	Details	Target Date	Progress		
1	2.2	Management Structure		Included Table 6.1		
2	2.4	Borehole Drilling Plans 2009	March 2009	Up-coming		
3	11.6	Annual Environmental Report	31/03/09	Prepared		
4	10 & 11	Record Keeping and Reporting		Ongoing		
5	3.9	Landfill Gas Management		Ongoing		
6	3.10	Surface Water Management		Ongoing		
7	8.6	Topographical Survey	AER 2007	Included Appendix 4		
8	8.7	Stability Analysis Certification Letter	AER 2012	To be submitted		

Table 5.1b Environmental Targets & Objectives

No.	Ref.	Details	Target Date	Progress
1		Litter Management		Ongoing

6. Management Structure

Under the terms of WL 91-1 Bailieborough Landfill Site no longer accepts waste. The Licence issued permits Cavan County Council to accept inert waste for the purposes of site restoration and remediation, subject to a maximum limit of 50,000 tonnes. Condition 4.1 of WL 93-1 requires that the restoration of the landfill be completed within 30 months of the date of grant of licence. The site is now fully capped, restored and closed. In terms of general overseeing of site at its current status the management structure is listed hereafter.

Table 6.1 Management Structure 2008-2009

Position	Name	Duties			
A/Senior Padraig McGivney Executive Officer		Oversee general supervision, monitoring and reporting of the site.			
Landfill Operations Manager Cavan County Council	Sinead Fox	Responsible for general supervision, monitoring and reporting of the site.			

Contact Person for Sanitary Authority:

Padraig McGivney, A/Senior Executive Officer, Waste Management Section, Cavan County Council.

7. Reporting of Incidents

All incidents are reported to the Agency in line with the requirements of Waste Licence ref. 91-1. Copies of all Incident Reporting documentation are ava lable for inspection. There were no incidents recorded for this reporting period. There were no complaints recorded for this reporting period.

8. Financial Provision

Provision will be made in Cavan County Council Official Estimates for Charges as required under Condition 12 of Waste Licence Ref. 91-1.

APPENDIX 1

APPENDIX 2

APPENDIX 3



| PRTR# : W0091 | Facility Name : Bailieborough Landfi W0091_2008(1).xls | Return Year : 2008 | me :

Version 1.1.04

AER Returns Worksheet

REFERENCE YEAR 2008

1. FACILITY IDENTIFICATION

Parent Company Name	Cavan County Council
Facility Name	Bailieborough Landfill
PRTR Identification Number	W0091
Licence Number	W0091-01

Waste or IPPC Classes of Activity

No.	class_name		
3.1 Deposit on, in or under land (including landfill			
3.4	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.		
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.		
4.2	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.		
Use of waste obtained from any activity referred to 4.11 preceding paragraph of this Schedule.			
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.		

Address 1	Tanderagee
Address 2	Bailieborough
Address 3	Co Cavan
Address 4	
Country	Ireland
Coordinates of Location	563600.000
River Basin District	IEEA
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Sinead Fox
AER Returns Contact Email Address	sfox@cavancoco.ie
AER Returns Contact Position	Landfill Operations Manager

AER Returns Contact Telephone Number	049-437 8418
AER Returns Contact Mobile Phone Number	087 980 8507
AER Returns Contact Fax Number	049 4332299
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	Closed and Fully Remediated Landfill
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number		Activity Name
	5d	Landfills
	5c	Installations for the disposal of non-hazardous waste

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 ?	

4.1 RELEASES TO AIR

19/06/200 9 16:22

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					ADD EMISSIO	N POINT			
	POLLUTANT		METHOD			QUAN TITY			
				Me	thod Used				
No.	Annex II	Name	M/ C/ E	<u>Method</u> <u>Code</u>	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accid ental) KG/Ye ar	F (Fugitiv e) KG/Yea r
03		Carbon dioxide (CO2)	С	MAB	GASSIM	263000.0	263000.0	0.0	0.0
01		Methane (CH4)	С	MAB	GASSIM	93700.0	93700.0	0.0	0.0
ADD NEV	W ROW DEL	ETES Rectarion by double-clicking on the Pollutant							

Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

	RELEASES TO AIR								
					ADD EMISSIO	N POINT		QUAN	
	POLLUTANT		MET	HOD				ΤΙΤΥ	
			Me	thod Used					
								А	F
								(Accid	(Fugitiv
		M/						ental)	e)
		C/	Method	Designation or	Emission Point	T (Total)		KG/Ye	KG/Yea
No. Annex II	Name	Е	Code	Description	1	KG/Year		ar	r
					0.0		0.0	0.0	0.0

ADD NEW ROW DELETS ROW by double-clicking on the Pollutant Name (Column B) then click the delete button

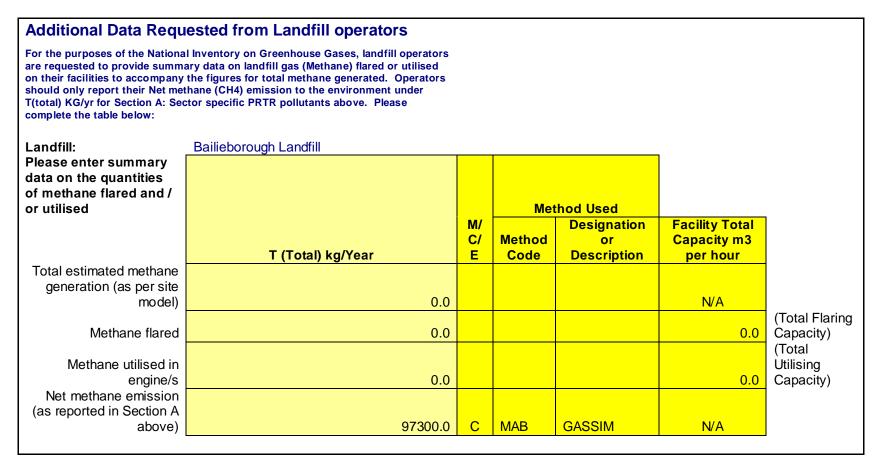
SECTION C : REMAINING POLLUTANT EMISSIONS (As required in

your Licence)

RELEASES TO AIR					
		ADD EMISSIO	N POINT	QUAN	
POLLUTANT	METHOD			TITY	
	Method Used				

Pollutant No.	Name	M/ C/ E	<u>Method</u> <u>Code</u>	Designation or Description	Emission Point 1	T (Total) KG/Year		A (Accid ental) KG/Ye ar	F (Fugitiv e) KG/Yea r
					0.0		0.0	0.0	0.0

ADD NEW ROW DELETE CAY to by double-clicking on the Pollutant Name (Column B) then click the delete button



4.2 RELEASES TO WATERS

| PRTR# : W0091 | Facility Name : Bailieborough Landfi 2008 |

me : W0091_2008(1).xls | Return Year :

19/06/2009 16:22

SECTION A : SECTOR SPECIF POLLUTANTS	IC PRTR	Data on ambient monitoring of storm/surface water or g submitted under AER / PRTR Reporting as this only concerns Releases from your facility				ce requirements, should NOT			
	RELEA	SES TO W	ATERS						
POLLUTANT					ADD EMISSION PO	DINT	QUANTIT Y		
			Met	thod Used					
				Designation or		T (Total) KG/Yea	A (Accidental	F (Fugitive)	
No. Annex II	Name	M/C/E	Method Code	Description	Emission Point 1	r) KG/Year	KG/Year	
					0.0	0.0	0.0	0.0	
ADD NEW ROW DELETE		w by double-o	licking on the Pollutant						

Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

	RELEAS	SES TO WA	TERS					
POLLUTANT					ADD EMISSION PO	DINT	QUANTIT Y	
			Meth	od Used				
						T (Total)	А	
				Designation or		KG/Yea	(Accidental	F (Fugitive)
No. Annex II	Name	M/C/E	Method Code	Description	Emission Point 1	r) KG/Year	KG/Year
					0.0	0.0	0.0	0.0

ADD NEW ROW DELETE ROWSelect 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)

RELEASES TO WATERS

POLLUTANT					ADD EMISSION PO	DINT	QUANTIT Y	
			Metho	d Used				
						T (Total)	А	
				Designation or		KG/Yea	(Accidental	F (Fugitive)
Pollutant No.	Name	M/C/E	Method Code	Description	Emission Point 1	r) KG/Year	KG/Year
					0.0	0.0	0.0	0.0

ADD NEW ROW DELETE ROWSelect a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.3 RELEASES TO WASTEWATER OR SEWER

| PRTR# : W0091 | Facility Name : Bailieborough Landfill |19/06/20Filename : W0091_2008(1).xls | Return Year : 2008 |09 16:22

SECTION A : PRTR

POLLUTANTS

OFFSITE TRANSFER OF P		ESTINED FO SEWER	R WASTE-WATER ⁻	IREATMENT OR					
POLLUTAN	т		METHOD		ADD EMISSION		JT	QUANTITY	
			Metho	d Used					
				Designation			T (Total)	A (Accidental)	F (Fugitiv e) KG/Ye
No. Annex II	Name	M/C/E	Method Code	or Description	Emission Point 1		KG/Year	KG/Year	ar
						0.0	0.0	0.0	0.0

ADD NEW ROW DELETE ROWSelect 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 POI								
POLLUTANT			METHOD		ADD EMISSION POIL	VT_	QUANTITY	
			Method					
Pollutant No.	Name	M/C/E	Method Code	Designation	Emission Point 1	T (Total)	А	F

			or Description		KG/Year	(Accidental) KG/Year	(Fugitiv e) KG/Ye ar
				0.0	0.0	0.0	0.0
ADD NEW ROW DELETE ROWSelect a row by (Column B) then	double-clicking click the delete	on the Pollutant Name button					
PRINT THIS SHEET							

4.4 RELEASES TO LAND

| PRTR# : W0091 | Facility Name : Bailieborough Landfi me : W0091_2008(1).xls | Return Year : 2008 |

19/06/2009 16:22

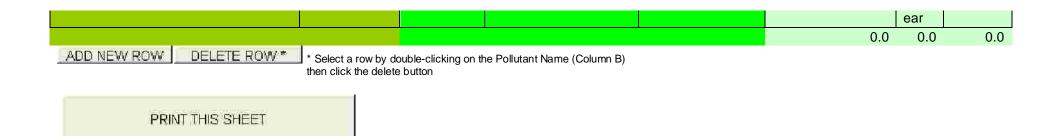
SECTION A : PRTR POLLUTANTS

	RELEAS	ES TO LAND					
POLLUTANT		METHOD			ADD EMISSION PO	DINT	QUANTI TY
			Metho	od Used			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Tota I) KG/Y ear	A (Acciden tal) KG/Year
					0.0	0.0	0.0
ADD NEW ROW DELETE ROW*	* Select a row by d then click the delete		the Pollutant Name (Column E	В)			

SECTION B : REMAINING POLLUTANT EMISSIONS

(as required in your Licence)

	RELEASES TO LAND							
POLLUT	ANT		METHOD			OINT	QUANTI TY	
			Metho	d Used				
						Т	А	
						(Tota	(Acciden	
				Designation or		I)	tal)	
Pollutant No.	Name	M/C/E	Method Code	Description	Emission Point 1	KG/Y	KG/Year	



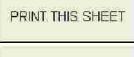
5. ONSITE TREATMENT & OFFSITE
TRANSFERS OF WASTE

| PRTR# : W0091 | Facility Name : Bailieborough Landfi me : W0091_2008(1).xls | Return Year : 2008 | 19/06/2009 16:22

						Meth	od Used					
												Licence /
											Name and	Permit
									Name		Address	No. of
									and		of Final	Final
									Licenc		Destinatio	Destinatio
									e /		n i.e. Final	n i.e. Final
									Permit	Addres	Recovery	Recovery
									No. of	s of	/ Disposal	/ Disposal
									Recov	Recov	Site	Site
									erer /	erer /	(HAZARD	(HAZARD
	European		Quantit		Waste				Dispos	Dispos	OUS	OUS
Transfer	Waste	Hazard	у	Description	Treatment	M/C	Method	Location of	er/	er /	WASTE	WASTE
Destination	Code	ous	T/Year	of Waste	Operation	/E	Used	Treatment	Broker	Broker	ONLY)	ONLY)

ADD NEW ROW DELETE ROW ow by double-clicking the Description of Waste then

click the delete button



Bailieborough Landfill WL 91-1 AER 2008