INSPECTORS REPORT
WASTE LICENCE REGISTER NUMBER 25-1

(1) Summary:

Name of Applicant	Carlow County Council
Facility Name (s)	Powerstown Landfill
Facility Address	Powerstown, Carlow
Description of Principal Activity	Specially engineered landfill
Quantity of waste (tpa)	Maximum 40,000
Environmental Impact Statement Required	Yes
Number of Submissions Received	16
INSPECTOR'S RECOMMENDATION	The proposed decision as submitted to the Board be approved.

Notices	Issue Date(s)	Reminder(s)	Response Date(s)
Article 8	17 April 1998 6th January 1999 (EIS)		29 April 1998 22 January 1999 2 March 1999
Article 12(4)(a)	4 August 1998		18 August 1998
Article 14 (2) (b) (i)	Not applicable		
Article 14 (2) (b) (ii) Note 1	22 June 1998 18 August 1998		
Article 14 (2) (a)	Not applicable		
Article 16(1)	14 April 1999	 18 June 1999	13 May 1999 14 May 1999 9 July 1999
Article 16(2)(a)	23 July 1999	Not Applicable	Not Applicable

Note 1: Article 14 (2) (b) (ii) Reminders: 24 July 1998, 18 August 1998, 4 September 1998, 28 September 1998, 16 November 1998, 6 January 1999 and 12 February 1999.

Response Dates: 31 July 1998, 18 August 1998, 14 September 1998, 23 September 1998, 16 October 1998, 27 November 1998, 30 November 1998, 23 February 1998, 26 February1999, 2 March 1999 and 19 March 1999.

Applicant Address	County Secretary, Carlow County Council, County Offices. Athy Road, Carlow
For Local Authority applicants, is the facility within its own functional area	Yes
Is the facility an existing facility:	Yes
Prescribed date for application:	Prior to 1 March, 1998
Date Application received:	27 February, 1998
Confidential Information Submitted	No
Location of EIS in Application	Volume 1

FACILITY VISITS:

DATE	PURPOSE	PERSONNEL	OBSERVATIONS
19/03/98	Site visit and checking site notice	K. Nolan	Site Notice complied with Article 7
7/4/99	Site visit and checking site notice following EIS	K. Nolan	Site Notice complied with Article 7

(2) Class/Classes of Activity

The class(es) of activities for which the applicant has applied are marked below. The principal activity is indicated by (P).

Waste Management Act, 1996			
THIRD SCHEDULE **Waste Disposal Activities**		**FOURTH SCHEDULE** **Waste Recovery Activities**	
1. Deposit on, in or under land (including landfill).	X	1. Solvent reclamation or regeneration.	
2. Land treatment, including biodegradation of liquid or sludge discards in soils.		2. Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).	X
3. Deep injection of the soil, including injection of pumpable discards into wells, salt domes or naturally occurring repositories.		3. Recycling or reclamation of metals and metal compounds.	X
4. Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.	X	4. Recycling or reclamation of other inorganic materials.	X
5. Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.	P	5. Regeneration of acids or bases.	
6. Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule.	X	6. Recovery of components used for pollution abatement.	
7. Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule.	X	7. Recovery of components from catalysts.	
8. Incineration on land or at sea.		8. Oil re-refining or other re-uses of oil.	
9. Permanent storage, including emplacement of containers in a mine.		9. Use of any waste principally as a fuel or other means to generate energy.	
10. Release of waste into a water body (including a seabed insertion).		10. The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system,	
11. Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.		11. Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.	
12. Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.		12. Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.	
13. Storage prior to submission to any activity referred to in this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.	X	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.	X

Class description:

The descriptions provided by the applicant for these activities are set out below:

Third Schedule
Class 1: refers to the disposal of non-hazardous waste at the site.
Class 4: refers to the storage of leachate in the leachate storage lagoons.
Class 5: refers to the disposal of waste in lined cells.
Class 6: refers to the biological treatment of sewage in the septic tank from the caretaker's toilet.
Class 7: refers to possible future proposals to install on-site leachate treatment facilities.
Class 13: refers to the storage of leachate in the leachate storage lagoons before recirculation or removal to the Waste Water Treatment Plant.

Fourth Schedule
Class 2: refers to the storage of waste oils at the civic amenity area prior to removal for recycling.
Class 3: refers to the storage of scrap metal and aluminium cans prior to removal for recycling.
Class 4: refers to the storage of glass and paper prior to removal for recycling.
Class 13: refers to the permanent structures in place where glass, aluminium, oil, paper and batteries are stored prior to removal for recycling.

Activities recommended for licensing:

It is recommended that all, except Class 7 of the Third Schedule, of the above activities for which the applicant has applied for a waste licence, be licensed subject to the requirements of *Condition 1.1* of the proposed licence. Class 7 refers to the possibility of installing leachate treatment facilities on site in the future. In the absence of any specific details in relation to this class of activity, it is not considered for licensing purposes as part of this application and must be refused.

(3) Facility Location

A location plan showing the outline of the facility to which the application relates is provided in Appendix 1. The plan also shows the layout of the facility.

The facility is situated in a rural location some 8 kilometres south of Carlow town. It is adjacent to the N9, the main Carlow-Kilkenny road. The landscape of the surrounding area is dominated by the river valley and the local topography can be described as irregular and undulating.

The facility comprises of approximately 20 acres in total, of which 11 acres constitutes the new lined part of the facility and 9 acres for the old unlined part of the facility.

The facility is located to the east side of the River Barrow Valley approximately 500m from the river course. The lined facility is bound by a stream and a planted tree line on the northern boundary with hedges on the other sides except for the 2m high chainlink security fencing which forms the boundary along the N9. To the south-west the lined facility is bounded by the unlined facility which has no security fencing. The River Barrow is classified as cyprinid.

There are five residences located within 500m of the site, Mulvey (60m North of site), Nolan (south-east of the site), Worthington (south of the site), Purcell (south of the site) and Mc Donald (south south west of the site).

The economic activities based in the area are mostly related to agriculture with practices in general typical of County Carlow. The principle activities are tillage and cattle rearing in the Powerstown area. Tourism in the area relates to fishing and walking along the River Barrow with a fishing stand in Leighlinbridge village. There is a guesthouse and studfarm in the Milford area which is a distance of 2 kilometres from the site.

(4) Waste Types and Quantities

The total quantities and types of wastes accepted by the facility (these figures refer to the lined facility) are shown below.

YEAR	NON-HAZARDOUS WASTE (tpa)	HAZARDOUS WASTE (tpa)	TOTAL QUANTITY OF WASTE (tpa)
1995	27,500	Not Applicable	27,500 (estimate)
1996	29,000	Not Applicable	29,000 (estimate)
1997	31,000	Not Applicable	31,000

The expected life of the facility and the expected maximum annual tonnage are indicated below.

Expected life of the facility (in years)	2004.
Maximum Annual Tonnage	40,000

(6) Activity summary

The unlined site was operational from 1975 to 1997. From 1991 to 1997 it only accepted sludge from a wastewater treatment plant. After this date it was closed following a court case taken by one of the local residences. The lined part of the facility opened in 1991 and is expected to reach its full capacity of 315,000 tonnes in 2004. Non-hazardous waste is disposed of at the facility consisting mostly of household waste, commercial waste, industrial waste, sewage sludge and small quantities of non-hazardous asbestos. There is a weighbridge in operation on the site.

The public are allowed access to the facility where they can deposit their waste in a container at the civic waste facility. Conditions included in the Proposed Decision (PD) will require the licensee to upgrade the civic waste facility. There is a septic tank on site with the effluent being pumped to the leachate storage lagoons.

Monitoring of the facility indicates that landfill gas is migrating beyond the site boundaries. Conditions included in the proposed decision provide for extending the landfill gas monitoring programme, installation of permanent gas monitoring systems and for the collection and flaring/utilisation of landfill gas. Monitoring also indicates that some contamination of the groundwater has occurred from the landfill, most likely from the unlined part of the site. Conditions are included in the proposed decision for the management of leachate in the unlined part of the site and an assessment into the cause, nature and extent of this contamination and proposals for its remediation.

(5) Facility Operation/Management

Development;

The lined facility has been developed on a phased basis, with each phase comprising two cells. Each phase accepts waste for 14-16 months. Cells 9-10 are presently under construction with construction for cells 11-12 due to commence towards the end of the year. The active period of the landfill is estimated to end in 2004. The site will be permanently capped and restored with a view to returning the land to agricultural use.

The unlined site was closed in 1997. This part of the site has been capped with 1 metre of topsoil and grassed. *Condition 8.1* requires the licensee to submit a restoration and aftercare plan to the Agency for Agreement. *Condition 4.25* specifies capping requirements for the facility.

Infrastructure;

The boundary between the east side of the facility and the National Primary route N9 is delineated by a 2m high chainlink security fence. The north of the site is bounded by a stream and planted tree lines consisting of deciduous and evergreen trees and hedges abound the east and south. The entrance to the site is located along the National Primary route N9 to the east of the site. Concerns have been raised in relation to traffic control entering and exiting the site as the entrance is located in a depression hidden from the flow of traffic from the south by a bad bend. *Condition 6.4* requires the licensee to submit a review of traffic control and traffic management along the N9 in the immediate vicinity of the facility and only in so far as it relates to the activities at the landfill. Within the site there is a network of site haul roads which are wide enough to accommodate two large freighters passing each other. On site there is a one way system in operation controlled by electronic barriers which facilitates the movement of vehicles within the site. The main infrastructure within the facility includes an office, storage containers, weighbridge, civic waste facility and leachate storage lagoons. The provision and maintenance of this infrastructure is required by *Condition 4. Site Infrastructure* and this includes for the provision of a waste inspection and quarantine area *(Condition 4.7),* upgrading of the civic waste facility *(Condition 4.8 and 4.9)* and storage arrangements for the storage of specific wastes *(Conditions 4.11 and 4.15).*

- **Liner System;**

Cells 1-6 have been constructed using a single 2.5mm HDPE membrane. The liner was installed on a prepared base and laid to falls of 1-2%. Leachate detection pipes were laid within the prepared base. The liner was protected by a 300mm sand layer overlaid by a 300mm gravel drainage layer. The leachate collection pipework was laid in this protective layer.

Cells 7-10 have been constructed using a composite lining system consisting of an imported clay layer of 1metre thick and engineered to a permeability of less than 1×10^{-9}m/sec overlain by a 2.5mm HDPE synthetic liner and protected as before.

The construction of future cells requires the prior written agreement of the Agency under *Condition 4.16 Specified Engineering Works.*

- **Leachate Management;**

Cells 1-6 Leachate generated in each cell drains by gravity through 200mm HDPE slotted pipes. The leachate collection pipes drain into collection chambers and are pumped via mains into HDPE lined leachate storage lagoons. Cells 1-2 drain into one leachate collection chamber which discharges to one lagoon, whereas cells 3-6 drain into a separate leachate collection chamber and discharge into a separate storage lagoon. The 200mm slotted HDPE leachate detection pipes are laid in the supporting layer under the HDPE liner and are laid to a 2% fall in each cell and discharge to leachate detection chambers adjacent to the leachate collection chambers.

Cells 7-8 As the method of liner construction was changed to a composite system**,** the requirement for a leachate detection system was eliminated. The leachate collection is as described for cells 1-6 with the pipes draining into a concrete sump and subsequently pumped via a separate rising main into a composite lined leachate storage lagoon.

Cells 9-13 Are designed so that leachate flows in southerly and westerly directions to sumps and then to a common rising main which will discharge into a composite lined lagoon. The leachate collection sumps have been re-designed to eliminate pipework having to pass through bund walls. As for cells 7-8 a leachate detection system is not required.

Condition 4.21.3 provides for the maintenance of a minimum freeboard of 0.75m in the leachate lagoons.

As can be seen from the above, there are four separate leachate pumping mains to four separate leachate storage lagoons. The leachate is tankered off-site to Bagnelstown Municipal Waste Water Treatment Plant. The construction of the leachate collection system for future cells requires the prior written agreement of the Agency under *Condition 4.16 Specified Engineering Works.*

Condition 4.20 requires the licensee to submit proposals for the recirculation of leachate. Leachate recirculation will not be allowed to be carried out in cells 1-6 as there is no facility for the monitoring of leachate levels within these cells.

Monitoring of the facility indicates that some contamination of the groundwater has occurred from the unlined part of site where there is no leachate collection. Hence, *Condition*

4.21.7 requires the licensee to submit proposals on the management of leachate within this area.

- **Landfill Gas Management;**

Passive venting of landfill gas on the lined site is facilitated by a network of vertical venting pipes. As Vent Stack 1 appears not to be venting any methane and as some of the trial pits have become damaged, *Condition 9.2* require the licensee to replace any of the monitoring infrastructure that becomes damaged or proves to be unsuitable for their purpose.

Condition 4.22.2 requires the licensee to submit a proposal to the Agency for agreement for active collection and utilisation of landfill gas as an energy source or the active collection and flaring of landfill gas.

- **Capping System;**

Condition 4.25.1 specifies a minimum of 150mm of clay material for temporary capping. *Condition 4.25.2* specifies requirements for capping.

(6) Facility Operation/Management

- **Waste Acceptance Procedures**

Condition 5.1 and *5.2* stipulate that only non-hazardous waste shall be accepted for disposal at the facility. *Condition 5.3* specifies waste types to be accepted at the civic waste facility. *Condition 5.5* requires the licensee to submit a revised procedure for the acceptance of waste to the Agency for agreement. *Condition 5.9* specifies the handling procedures to be used for sewage sludge. *Condition 5.10* specified the handling procedures for non-hazardous asbestos waste. Approximately 1,000 tonnes per annum of Construction and Demolition waste (C&D) is accepted at the facility and is either used for road building or as cover material. *Condition 5.15* requires the licensee to submit a proposal for recovery options for C&D waste.

Waste Handling

At present waste is deposited at the main tipping area of the active cell and is compacted into shallow layers of up to two metres. After adequate compaction the waste is covered by approximately 150mm of gravel/clay type cover.

Procedures for the handling of waste are specified in *Conditions 5.13, 5.16* and *5.17*. The procedure to be used for the handling of sewage sludge is specified in *Conditions 5.9*.

- **Nuisance Control**

Potential Nuisances are controlled by *Condition 6 Environmental Nuisances*. In addition, the potential for windblown litter will be minimised by restricting the size of the working face (*Condition 5.13*), litter fencing around active cells, covering of waste as soon as

possible after compaction (*Condition 6.6*) and all waste being delivered to the facility must be appropriately covered (*Condition 6.9*). Birds on site have been creating ongoing problems to the resident living north of the facility by carrying debris from the landfill onto this lawn. Bird control measures on site include the use of falcons (*Condition 6.5*) and adequate daily covering of all waste and the placing of a minimum of 150mm of inert material over the waste at the end of the working week (*Condition 5.14*). *Condition 6.5* requires the licencee to submit a report on the effectiveness of the bird control measures at the facility to the Agency within six months from the date of grant of the licence. The potential for nuisances caused by odours, vermin and fly infestations are minimised by restricting the size of the working face and the use of adequate daily cover (*Conditions 5.13 and 5.14*). *Condition 6.13* requires the licensee to submit a proposal for the assessment of odours. These coupled with the adequate covering of waste and the collection and flaring and potentially the utilisation of landfill gas should minimise the nuisance which odours are currently causing to the nearby residences.

- **Hours of Operation**

The hours of operation are Monday to Friday 8:30 to 16:30 inclusive and Saturdays 8:30 to 13:00. Any changes to these hours are subject to the prior written agreement of the Agency.

(7) Restoration and Aftercare

Condition 8.1 requires the licensee to submit a restoration and aftercare plan to the Agency for agreement.

(8) Emissions to Air

Emissions to air include odours, landfill gas and dust. In addition there is the potential in the future for emissions of combustion products from landfill gas.

At present odours are causing a considerable nuisance to nearby residences. Provisions for dealing with odours are as specified under *Nuisance Control* (See 6 above).

Emissions of dust are reduced by the placement of daily cover and the compaction of waste. Where emissions of dust are generated, particularly during dry windy conditions, *Condition 6.10* requires that site roads and any other areas used by vehicles be sprayed with water to minimise airborne dust nuisance. Dust monitoring is required by *Condition 9.1* and *Condition 7.1* sets an emission limit for dust.

Methane has been detected on a number of occasions in the trial pits (monitoring boreholes) and groundwater monitoring boreholes outside the lined areas of the landfill. On one occasion the trigger value as specified in *Condition 7.5* was breached at the groundwater monitoring borehole M5. Due to the location of this borehole, the unlined site is the most likely source for the landfill gas. High Carbon Dioxide (CO_2) concentrations have also been recorded in trial pits (monitoring boreholes) TP1 and TP2. Elevated CO_2 levels have also been recorded in the temporary trial pits located to the

south of the lined site and south and south east of the unlined site. On one occasion, concentrations at TP2 which is located adjacent to the unlined site exceeded the trigger value as specified in *Condition 7.5*. *Condition 9.4* requires the licensee to extend the landfill gas monitoring programme to detect off-site migration of landfill gas. The programme must have particular regard to the possible increase in migration as a result of capping and shall also include details regarding the location and frequency of monitoring of landfill gas in respect of the domestic properties in proximity to the facility. *Condition 9.5* requires the licensee to submit details to the Agency for agreement on the permanent gas monitoring system(s) to be installed.

(9) Emissions to Groundwater

The facility is underlain by a locally important sand and gravel aquifer. This is in direct hydraulic connection with the Ballysteen limestone formation which has been classed as a regionally important bedrock aquifer. Groundwater vulnerability has been classified as extreme.

The groundwater monitoring boreholes intersect the different geological strata.

Two sets of analytical analysis were carried out for all groundwater monitoring boreholes and at Mulveys private well as part of the Article 16(1) notice requirements. A summary of the main findings are as follows:

- There are significant levels of ammonia in boreholes R2 and P1 with the highest concentration reaching greater than 17 times the MAC value specified in the Drinking Water Regulations. High ammonia levels were also detected in M6 with levels significantly higher than those in the upgradient boreholes some of which are also elevated.
- Mercury and Cadmium were detected in all samples on both occasions. However all concentrations were below the corresponding MAC values.
- Magnesium exceeded the MAC value at M2. Iron exceeding the MAC values at M2, M3, M5, M6, R1, P1 and Mulveys. Manganese exceeded the MAC value in M2, M3, M6, R1, R2 and P1. All of these parameters may be naturally occurring as background concentrations were also elevated.
- Chloride levels within all sampling points were within the MAC values with highest concentrations found in R2 and Mulveys.
- A mineral oil concentration of 1,510µg/l was detected in R2 during the first analyses, thus exceeding the MAC value of 10µg/l. The concentration in the second sample was less that the method detection limit of 10µg/l. Continual monitoring will clarify whether this is a reoccurring problem.
- Phenols were detected in M1, M2, M3, M7 and R1. All concentrations in this round of sampling were below the MAC value (0.5µg/l). In the second round of sampling concentrations at M1 and M3 were above the MAC value.
- Semi-volatiles were detected in all samples. However, in the majority of the samples, concentrations were below the level of detection (10µg/l) except for P1 and R2 where on different sampling occasions had maximum concentrations of 3550 and 2046 µg/l

- Organochlorine Pesticides were found in M1, M2, M3 M6 and R1. However, agricultural activity in the surrounding area is the most likely source of these pesticides.

The analyses received with the application spans the period from 1995-1999. The analyses highlight the following exceedences of the MAC in the Drinking Water Regulations:

M1	Ammonia, Iron, Magnesium, Manganese, Nitrate and Nitrite
M2	Nitrate and Nitrite
M3	Nitrates, Nitrate and Nitrite, Iron and Manganese
M4	Nitrates, Nitrate and Nitrite, Iron, Manganese Ammonia
R1	Iron, Ammonia
R2	Ammonia, Nitrite
P1	None
Mulveys Private Well	Sodium
Purcells	None
Worthingtons	Iron

In summary R2 and P1 both of which are located within the sands and gravels suggests that the landfill is the source of contamination.. R2 due to its location may be detecting contamination from the unlined site whereas contamination detected at P1 may be originating from either the lined or the unlined site. *Condition 4.21.7* requires the licensee to submit proposals for leachate management for the unlined site. *Condition 9.6* requires the licensee to submit an assessment into the cause, nature and extent of groundwater contamination and proposals for its remediation. *Condition 9.1* requires the monitoring of semi-volatiles and mineral oils in borehole R2 and P1 on a quarterly basis as high concentrations of both of these parameters have been detected in recent monitoring results. *Condition 9.7* requires the licensee to submit an additional surface water monitoring point downstream of the facility to take into account the potential groundwater discharge from the southern point of the unlined site. *Condition 10.6* requires the licensee to submit to the Agency, written proposals for the provision of an alternative supply of water to those affected where monitoring of the local wells indicate that the facility is having a significant adverse effect of the quantity and/or quality of the water supply.

Private Wells: Three of the private wells within 500m of the landfill site have been analysed for both total and faecal coliforms since 1995. In all three wells total coliforms have been detected since 1995 to date. On a few occasions faecal coliforms have also been detected in Mulvey's well which is located 200m to the northwest of the landfill site. The most likely source of microbial contamination are either the septic tanks serving two of the houses or the agricultural activity in the area.

High concentrations of Nitrite, Manganese and Iron have been detected in Mulveys well in excess of the MAC values specified in the Drinking Water Regulations. In order to identify the source of contamination, information on the direction of groundwater flow north of the site is considered necessary. *Condition 4.24.3* requires the licensee to determine the groundwater flow regime to the North of the site.

Condition 9.1 specifies that all the private wells within 500m of the landfill are to be sampled on an annual basis for specified parameters including Total and Faecal Coliforms. The monitoring frequency for Total and Faecal coliforms for Mulveys private well is increased to quarterly. This increased monitoring for microbial contamination can be reviewed on receipt of information on the groundwater flow direction north of the facility.

(10) Noise Emissions

The operation of plant and machinery is the main source of noise associated with the facility. Noise monitoring was carried out at four locations at the perimeter of the facility and at two locations representative of noise sensitive receptors. The nearest residence is located approximately 60m north of the site. The primary impact at this location is a combination of traffic on the adjacent main Carlow-Kilkenny road and traffic moving to and from the tiphead and activities at the tiphead. Road traffic is the dominate noise source. Site works were the main noise source at the other noise sensitive location to the south east of the facility. Noise emission limits are set in *Condition 7.1*. *Condition 7.4* requires that there shall be no clearly audible tonal components in noise emissions from the facility. Noise monitoring of the facility is required by *Condition 9.1*.

(11) Emissions to Sewer

There are no direct emissions to sewers from the facility. A septic tank has been installed on-site to deal with sewage arising on site. Effluent from the septic tank discharges to the leachate storage lagoons. Leachate generated on site is stored in the leachate storage lagoons and is tankered off-site to the Waste Water Treatment Plant at Bagnelstown as specified in *Condition 7.7*.

(12) Emissions to Surface Water

Additional surface water monitoring was requested as part of the Article 16(1) notice. Results from the two samples taken indicated that on one occasion the concentration of nitrite downstream of the landfill was in excess of the Guide values specified in the Freshwater Fish (Cyprinid) Directive. Cyanide was also detected on one occasion downstream of the landfill. Concentrations of Ammonia, Sodium, Chromium, Chloride and Manganese were slightly elevated downstream compared to those upstream.

For sampling results submitted from 1995 to 1998 both Ammonia and Chloride levels are slightly elevated downstream compared to upstream. As detailed in the Article 16 reply submitted on 9th July, 1999 "during sampling leachate was observed seeping out from the embankment adjacent to M4. Leachate is the probable cause of the increased levels in downgradient analytes in the Powerstown stream". *Condition 4.21.6* requires the licensee to submit an assessment of this and to submit proposals to remediate it to the Agency for agreement.

Physico-chemical and biological monitoring of Powerstown Stream is required by *Condition 9.1* and *9.8*. *Condition 9.7* requires the licensee to submit an additional surface water monitoring point downstream of the facility to take into account the potential groundwater discharge from the southern point of the unlined site.

(13) Other Significant Environmental Impacts of the Development

Cultural Heritage: There is a possibility that archaeological remains may be found at the facility. Hence *Condition 4.17* requires the licensee to submit an archaeological report prior to the development of any new cells.

(14) Waste Management, Air Quality and Water Quality Plans

No relevant waste management or air quality plans exist. A waste management strategy has been produced for the south-east region with each Local Authority to prepare their own waste management plans. The requirements of the Water Quality Management Plan for the River Barrow have been considered in the evaluation of the licence application.

(15) Submissions/Complaints

Appendix 2 contains a list of all submissions received relating to the application. The dates received and the details of the individual, department, group or organisation making the submission are provided.

An overview of all submissions received in relation to the waste licence application is provided. This includes a summary of all issues raised in the submissions and shows how these issues are dealt with in the proposed decision.

15.1 SUMMARY OF SUBMISSIONS

A number of submissions were received from Mr. David Malone, EAA-I. Included in the submissions were references to interpretation of legislation, the policies and procedures of the Agency in relation to certain issues together with the implementation of Directives. The responses relate to those issues which specifically relate to this application.

1. David Malone Environmental Action Alliance - Ireland (Environmental Development Officer) made a submission which was received on 10th March, 1998.
Mr Malone addressed the letter to Dr. Vera Power requesting information on IPC. He required clarification on the following in relation to the waste licence application for Powerstown: (i) Whether an Environmental Impact Statement had been carried out and submitted with the application; and (ii) Whether Carlow County Council required a permit for the disposal of asbestos and chemical waste which had been disposed at the facility between 1984 and 1988.

RESPONSE
(i) The Agency requested that an Environmental Impact Statement be carried out on 18th August 1998 which was submitted on 26th February 1999. (ii) A permit for the disposal of asbestos waste and chemical waste was not required for Local Authority landfills.

2. David Malone Environmental Action Alliance - Ireland (Environmental Development Officer) made a submission which was received on 3rd June, 1998.
(i) Mr. Malone provided a number of reasons as to why they consider that an Environmental Impact Statement was required for Powerstown landfill. (ii) Clarification as to whether Carlow Co. Council required a permit for the disposal of asbestos and chemical waste which had been disposed at the facility between 1984 and 1988.

RESPONSE
(i) The Agency requested that an Environmental Impact Statement be carried out on 18th August 1998 which was submitted on 26th February 1999. (ii) A permit for the disposal of asbestos waste and chemical waste was not required for Local Authority landfills.

3. David Malone Environmental Action Alliance - Ireland (Environmental Development Officer) made a submission which was received on 28th April 1999.
Mr. Malone raised a number of points in his submission. Relevant issues raised are as follows: (i) Request that the Agency extend the period for submissions. (ii) EAA-I consider that the EIS does not contain mandatory information required for the EIS to be adequate. (iii) Non-compliance with Article 17(2)(b) of the Local Government (Planning and Development) Regulations of 1994 concerning site and newspaper notices. (iv) Whether the Agency had received a Waste Management Plan and a Special Waste Management Plan or a list of wastes under Article 1(a) of the European (Waste) Directive 75/442/EEC from Carlow County Council. (v) The intended action of the Agency regarding the a permit for the disposal of asbestosand what type of "Waste Management Licence" is required in relation to a site where asbestos waste has been disposed.

RESPONSE
(i) The Waste Management Licensing Regulations provides as to the time for making submissions. The Agency does not have discretion in this regard. (ii) The Inspector assessed the EIS as complying with the relevant legislation. (iii) Compliance with the Local Government (Planning and Development) Regulations of 1994 is not a matter for the Agency. (iv) Carlow County Council have not yet prepared a Waste Management Plan. Condition 5.*2* specifies what wastes can be accepted for disposal at the facility. (v) A permit for the disposal of asbestos waste was not required for Local Authority landfills. Condition 4.18 specifies that for any works being carried out in areas where asbestos waste has been previously deposited, that procedures are in place to prevent any risks arising. Condition 5.10 specifies the procedures to be used for the disposal of asbestos waste.

4. David Malone Environmental Action Alliance - Ireland (Environmental Development Officer) made a submission which was received on 6th May 1999.
Mr. Malone raised a number of points in his submission as follows: (i) Requested clarification on submission periods, information submitted with the applications and costs of receiving the additional information. (ii) Clarification as to how the Agency can give effect to specified European Directives in the absence of a Waste Management Plan or a Special Waste Plan. (iii) Requests whether the Agency is satisfied that the EIS complies with Article 25 of the EIA Regulations.

RESPONSE
(i) Letter dated 17th May sent to Mr. Malone to clarify these points. (ii) The application has been accessed to ensure compliance with the Waste Management Act, 1996, where relevant. The

specified Directives are given effect to by this Act. (iii) The EIS was assessed as complying with the relevant legislation.

5. David Malone, Environmental Action Alliance - Ireland (Environmental Development Officer) made a submission which was received on 12th May, 1999.
This submission made by Mr. Malone was very extensive and detailed. It was divided into an introduction and three sections, with three attached appendices:
For the purpose of addressing the issues raised, these have been considered under the following headings. The main issues raised are as follows:

Introduction. *(i) EEA-I made a complaint to the European Commission against Carlow County Council and the EPA for non-compliance with the EIA Directive 85/337/EEC and the European Communities (Waste) Directive 75/442/EEC. The Commission has registered this complaint as No. 99/4351, SG (99) A/4409/2. (ii) The EIS failed to contain mandatory information.*

RESPONSE
(i) On the 18th August 1998, the Agency requested that Carlow County Council submit and Environmental Impact Statement for Powerstown Landfill. (ii) The EIS was assessed as complying with the relevant legislation.

Section 1. *The main issues raised in this section which are directly relevant to Powerstown Landfill are as follows: (i) Nuisances. (ii) Illegal dumping of asbestos waste. (iii) Health hazards from uncontrolled leachate, leachate leakage and ponding observed beside the leachate collection chambers. (iv) Concerns regarding contamination of private water supplies. (v) Contamination of groundwater and surface water. (vi) Disposal of sewage sludge. (vii) Protection of the fen peat. (viii) Concerns in relation to the facility being a health hazard.*

RESPONSE
The EIS was assessed as complying with the relevant legislation. The facility when operated in accordance with the conditions of the licence will not cause environmental pollution. (i) Conditions 6 relates to the control of environmental nuisances. (ii) See response to issue (v) of submission 3. (iii) The facility when operated in accordance with this licence shall not cause significant environmental pollution. See response to Part 3 of submission 11 in relation to leachate. (iv) See response to issue (v) of submission 14. (v) Condition 9.6 requires the licensee to submit an assessment into the cause, nature and extent of groundwater contamination in the vacinity of the site, in so far as it relates to the facility and proposals for its remediation, to the Agency. Extensive monitoring is required by Condition 9 and Schedule F to ensure the protection of groundwaters. Condition 4.21.5 requires the an assessment of the potential leachate seepage from the northern boundary of the site towards Powerstown Stream and proposals to remediate any such leakage. Monitoring of Powerstown Stream is required by Condition 9 and Schedule F to ensure its protection. Condition 4.23.1 requires the licensee to submit an ongoing management programme for the control of surface water run-off from the facility during construction, operation and restoration. (vi) Condition 5.9 addresses the handling of sewage sludge. (vii) Proposed development works are not in the immediate vacinity of the fen. The facility when operated in accordance with the conditions of the licence will ensure the protection of the fen. (viii) The facility when operated in accordance with this licence shall not cause significant environmental pollution.

Section 2. *The main issues raised in this section which are directly relevant to Powerstown Landfill are as follows: (i) Concerns in relation to the historic disposal of asbestos waste,*

disposal of asbestos waste in the absence of a permit, the handling and disturbance of asbestos waste, types of hazardous waste accepted. (ii) Waste Management Plan for Carlow has not been completed. (iii) Pollution from the unlined part of the facility. (iv) Types of waste including hazardous waste disposed of at the facility. (v) Concerns in relation to surface water run-off. (vi) Concerns in relation to the operation of the liner for cells 1-6 in relation to containment of leachate and the effective operation of the leachate management system. (vii) Disposal of sewage sludge and the implications of leachate recirculation. (viii) No control or management of methane gas.

RESPONSE
(i) See response to issue (v) of submission 3. Condition 5.2 specifies that only non-hazardous asbestos waste shall be accepted at the facility of disposal. (ii) Not relevant to the application. (iii) Condition 9.6 requires the licensee to submit an assessment into the cause, nature and extent of groundwater contamination in the vacinity of the site, in so far as it relates to the facility and proposals for its remediation, to the Agency. Extensive monitoring is required by Condition 9 and Schedule F to ensure the protection of groundwaters. (iv) Condition 5.1 specifies that no hazardous waste shall be disposed of in the landfill. Condition 5.2 specifies the types of wastes to be disposed of in the landfill. Condition 5.3 specifies the types of wastes that can be accepted at the Civic Waste Facility for recycling. (v) Condition 4.23.1 requires the licensee to submit an ongoing management programme for the control of surface water run-off from the facility during construction, operation and restoration. (vi) See response to issues (viii), (x), (xi) and (xii) in Part 3 of submission 11. (vii) Condition 5.9 relates to the disposal of sewage sludge. Condition 4.20.2 requires the licensee to submit a proposal to the Agency on the operation and maintenance of the leachate recirculation system. (viii) Condition 4.22 relates to the management of landfill gas. Condition 7.5 specifies trigger levels for landfill gas. Extensive monitoring of landfill gas is required by Condition 9 and Schedule F.

Section 3. *EAA-I highlighted that as they are not satisfied that Carlow County Council and the EPA are complying with Community environmental laws pertaining to Powerstown Landfill, they have reported the matter to the European Commission. The complaint has been registered as Complaint No. 99/4351, SG(99) A/4409/2. EAA-I considers that the EIS is inadequate and hence they have requested clarification from the EPA on a number of issues prior to submitting a further complaint with the European Commission.*

RESPONSE
The EIS and application were assessed as complying with the relevant legislation.

6. David Malone Environmental Action Alliance - Ireland (Environmental Development Officer) made a submission which was received on 10th August 1999
The following issues were raised in relation to the application for Powerstown landfill. (i) The non-technical summary for the EIS does not comply with the EIA Regulations 1989-1998. (ii) What action does the Agency take when the EIS fails to comply with the EIS Regulations and why it does not return the invalid EIS and licence application. (iii) Clarification as to why the Agency does not consider the further information submitted with the application as "specified information" that should have been contained in the EIS (iv) Could the EPA identify what duties (Regulations) it has in order to give effect to Article 1(3) and Articles 2(1) of the European EIA Directive (v) The EIS submitted failed to contain information that was mandatory. In this regard, as the EPA accepted this invalid EIS could it explain its duties in order to give effect to Article 5(1) of the European Directive 97/11/EEC (vi) Clarification on the notice in newspaper by Carlow County Council and the reasons why certain wastes will not be accepted from 1st October 1999 and the effects this will have on the present waste application. (vii) Requesting clarification

on newspaper notice pursuant to Article 16 and requesting copy of the Non-Technical Summary (viii) How the Agency intends to give effect to Council Directive 91/689/EEC, concerning the asbestos waste disposed and proposed to be disposed at the facility (ix) Has the Agency copies of the permits issued to established if the asbestos waste was disposed of in compliance with all relevant Legislation (x) Has the Agency informed Carlow County Council that the present application for a waste licence does not cover asbestos waste disposed or proposed to be disposed at Powerstown. (xi) Clarification as to whether or not Carlow County Council require certification from the Minister for the Environment for Powerstown landfill or who will be dealing with matters concerning planning. (xii) EAA-I is requesting an extension on the submission period.

RESPONSE

(i) The EIS was assessed as complying with the relevant legislation. (ii) It is unclear as to whether this relates to Powerstowns EIS. In a case where an EIS does not comply with the relevant legislation, the Agency would request the applicant to submit the required information to ensure compliance as provided for in the legislation. The EIS submitted for Powerstown complied with the relevant legislation. (iii) The EIS and application were properly made. (iv) The EIS was assessed as complying with the relevant legislation. (v) The EIS submitted for Powerstown complied with the relevant legislation. (vi) This newspaper notice is not part of the waste licence application. (vii) Not relevant to the assessment of the application. (viii) See reply to submission 3 relating to asbestos (ix) See reply to submission 3 relating to permits. (x) As part of the application Carlow County Council has applied for the disposal of non-hazardous asbestos waste. (xi) Matters in relation to planning are the responsibility of the relevant Planning Authority. (xii) The Waste Management Licensing Regulations provides as to the time for making submissions. The Agency does not have discretion in this regard.

7. Ms. Bridget Mulvey, Goleen, Milford, Carlow made a submission which was received on 18th May 1998

Ms. Mulvey is a resident living to the north of the facility. In her submission she raised the following concerns and requested that an EIS be undertaken (i) Sand and gravel geology (ii) Site chosen on financial (least cost) not environmental standards. (iii) The old part of the site is unlined with concerns for the protection of groundwater. (iv) Asbestos was disposed of in the unlined site. (v) Various issued raised in relation to a desk study produced by the Environmental Resource Analysis Ltd. in 1991, including provision of screening, daily cover and water monitoring information. (vi) Increase in tonnage. (vii) The lining in cells 3 and 4 is punctured. (viii) Interlocutory Court Order of March 1994 recognised the fact that the landfill was not being operated satisfactorily. (ix) High coliform counts in sludge sample and high chemical and biological oxygen demand. (x) Leachate was observed overflowing from one of the collection chambers adjacent to cell 3 and 4 and a permanent pool of water is adjacent to the collection chambers (xi) Leachate flowing from the side of cells into unlined areas. (xii) Significant nuisances in relation to noise, odours and litter. (xiii) Closing of her guest house due to the operations at the landfill and the resultant significant loss of income.

RESPONSE

(i) The facility when operated in accordance with the conditions of the licence will not cause significant environmental pollution. (ii) The facility when operated in accordance with the conditions of the licence will not cause significant environmental pollution. (iii) Condition 4.21.7 relates to the proposal for the management of leachate in the unlined part of the site together with remedial action if found necessary. Extensive monitoring of the groundwater is required by the licence. (iv) See reply to submission 3 relating to asbestos. (v) Condition 8.1 and 8.2 relates to the restoration and aftercare plan and final profile of the facility to be submitted to the Agency. Condition 5.8 specifies that waste shall not be deposited in any cell or part of the landfill without

the prior agreement of the Agency. Condition 5.14 provides for daily cover and extensive monitoring of groundwater and surface water is required by the licence. (vi) Condition 5.6 specifies the maximum tonnes per annum to be disposed at the facility. (vii) Condition 10.7 provides that appropriate measures shall be taken in the event that any monitoring, sampling or observations indicate that an incident has occurred. (viii) The facility will be operated to a high standard when operated in accordance with the conditions of the licence. (ix) Condition 5.8 addresses the handling of sewage sludge. The monitoring of surface and groundwater and private wells as specified in Schedule F will ensure the protection of these water bodies. (x) Condition 4.21.4 requires the licensee to maintain all infrastructure that forms part of the landfill leachate management scheme in a safe and fully operational manner. (xi) Refer to condition 4.21.4 as in previous sentence. Condition 4.21.5 requires an assessment of the potential leachate seepage from cells in the north of the facility and proposals to remediate any such leakage. (xii) Conditions in relation to environmental nuisances are specified in Conditions 6.1 to 6.13 inclusive. Condition 7.3 requires that emissions from the activity do not interfere significantly with the environment beyond the facility. (xiii) The facility when operated in accordance with the conditions of the licence will not cause environmental pollution.

This submission also included the following letters:
1. Letter from Dr. Gerard Moran dated 7th February 1996 for the Mulvey home regarding the debris being carried from the landfill by the wind and birds and the potential health hazard that this poses.

Response: Condition 5.14, 6.6 and 6.7 provides for the control of litter. Condition 6.5 requires measures be put in place such that birds to not give rise to nuisance in the immediate area of the facility. An assessment is also to be carried out on the effectiveness of bird control measures.
2. *Letter from D.W.A. Passmore dated 22nd October, 1996 on behalf of Celtic Cycling Ireland to the County Manager, Carlow County Council requesting what positive steps are being taken to improve the landfill and a letter from an R. Parsley dated 11th September 1996 who stayed at Ms. Mulveys B&B and complained about the dust, odours and litter from the facility.*
Response: Conditions 6.1-6.13 will specifically address the control of environmental nuisances.

3. *Letter from Brian Murray, Director, Aspects of Ireland Limited dated 6th February, 1995 to Carlow Rural Tourism in relation to cancelling accommodation at Ms. Mulveys B&B due to its proximity to the local dump and the related problems of litter and birds.*
Response: Conditions 6.1-6.13 will specifically address the control of environmental nuisances.

8. Ms. Bridget Mulvey, Goleen, Milford, Carlow made a submission which was received 9th March 1999.
Ms. Mulvey sent in a copy of results for microbial analysis of her private water supply indicating the presence of Total coliforms carried out by Independent Analytical Services Ltd on her behalf.

RESPONSE
See response to point (ii) in submission 12.

9. Ms. Bridget Mulvey, Goleen, Milford, Carlow made a submission which was received 16th March 1999.
Ms. Mulvey sent in a copy of a letter which she sent to The Secretary, Carlow County Council regarding the microbial contamination of her well and requesting copies of water analysis.

RESPONSE

See response to point (ii) in submission 12. Condition 2.7 requires the licensee to prepare a Communications Programme to ensure that the public can obtain information concerning the environmental performance of the facility.

10. Ms. Bridget Mulvey, Goleen, Milford, Carlow made a submission which was received on 20th April 1999.
The main issues raised Ms. Mulvey submission are as follows (i) Whether the EIS complied with Article 25 of the EIA regulations (ii) The inadequacy of the non-technical summary.

RESPONSE
(i) and (ii) The EIS submitted complied with the relevant legislation.

11. Ms. Bridget Mulvey, Goleen, Milford, Carlow made a submission which was received on 12th May 1999.
Ms. Mulveys submission was divided into four parts as follows:
Part 1. Effects of landfill on Mulvey Family
Part 2. Letters from five local residents.
Part 3. Report From Minnerex Environmental Limited who were commissioned by Mr. and Ms. Mulvey.
Part 4. Review by Mr. Shane Bennett.

***Part 1**. The main issues raised are as follows (i) Odours from the disposal of sewage. (ii) Flies and vermin. (iii)Littering of lawn and birds. (iv) Court Order. (v) Closure of B&B. (vi) Restoration. (vii) Contamination of private well. (viii) Health risks. (ix) Leachate leakage.*

Also included were a number of appendixes which included various letters from the tourism sector in relation to the impact that the landfill is having on the B&B business run by Ms. Mulvey.

RESPONSE
(i) Condition 5.9 addresses the handling of sewage sludge to minimise odours. Also see response to submission 16. (ii) Conditions 6 addresses environmental nuisances. (iii) See response to point (iii) in submission 13. (iv) Issues raised have been addressed in the licence. (v) The adoption of an Environmental Management Plan for the facility as required by Condition 2.3 will ensure that the facility is operated to a high standard. (vi) See response to point (v) of submission 7. (vii) See response to point (ii) of submission 12. (viii) The facility when operated in accordance with the conditions of the licence will not cause significant environmental pollution. (ix) Condition 4.21.5 requires an assessment of the potential leachate seepage from the cells in the north of the facility and proposals to remediate any such leakage. Also see response to point (vii) in submission 7

Part 2. *Letters from the following five local residents were included in this submission:*
Mr. Tom Doyle, Clocristic, Milford, Carlow;
Ms. Mary Nolan, Kilkenny Road, Milford, Carlow;
Mr. Chris Nolan, Powerstown, Milford, Co. Carlow;
Mr. Patrick and Ms. Elisabeth Townsend; and
Mr. William and Ms. Mary Walsh.
As a number of the issues raised are common to each of the residences, the issues raised in all letters are discussed together as follows: (i) Littering in the surrounding area. This has potential implications for litter being either directly or indirectly (through the silage) ingested by cattle. Mr. and Ms. Walsh mentioned in their submission that in their field nearest to the dump, that they

had two unexplained animal deaths which had not occurred in any other field on their farm. (ii) Birds are a constant nuisance by carrying debris from the landfill onto nearby lands, damaging crops and interfering with feeding troughs. (iii) Odours. (iv) Concerns in relation to landfill gas. (v) Vermin. (vi) Fly infestations. (vii) Noise. (viii) Devaluation of property. (ix) A history with poor management of the facility. (x) Negative effects on visual amenity. (xi) Potential for archaeological finds. (xii) Traffic hazard posed by vehicles entering and leaving the site which has caused regular traffic accidents. (xiii) Concerns in relation to the protection of surface waters and the control of surface water run-off. (xiv) Concerns in relation to the protection of groundwater and potential contamination of private water supplies.

RESPONSE

(i) Condition 5.14, 6.6, 6.7 and 6.8 provide for the control of litter. (ii) See response to point (iii) in submission 13. (iii) See response to submission 16. (iv) Landfill gas control measures are specified in condition 4.22. Trigger levels for landfill gas emissions from the facility are specified in condition 7.5. Monitoring of landfill gas is specified in Condition 9.1. Condition 9.4 requires the licensee to submit proposals to extent the landfill gas monitoring programme and Condition 9.5 which requires the licensee to submit details on the permanent gas monitoring system to be installed. (v) Condition 6.1 and 6.2 refer to the control of vermin. (vi) Condition 6.1, 6.2 and 6.11 deal with the control of flies. (vii) Condition 7.3 requires that noise from the activity does not interfere significantly with the environment beyond the facility. Schedule G specifies noise emission limits. (viii) The facility when operated in accordance with the conditions of the licence will not cause significant environmental pollution. (ix) The adoption of an Environmental Management Plan for the facility as required by Condition 2.3 will ensure that the facility is operated to a high standard. (x) Condition 8.1 and 8.2 relate to the restoration and aftercare plan and final profile of the facility to be submitted to the Agency. Condition 5.8 specifies that waste shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency. (xi) See response to point (ii) of submission 15. (xii) Condition 6.4 requires the licensee to submit a review on traffic control and management along the N9 in so far as it relates to activities at the landfill. (xiii) Extensive monitoring is required in Condition 9 and Schedule F to ensure the protection of surface waters. Condition 4.23 requires the licensee to submit an ongoing management programme for the control of surface water run off from the facility. (xiv) Condition 9.6 requires the licensee to submit an assessment into the cause, nature and extent of groundwater contamination in the vicinity of the site, in so far as it relates to the facility and proposals for its remediation. Condition 4.19.1 specifies the type of landfill liner to be installed. Condition 4.21.7 relates to the proposal for the management of leachate in the unlined part of the site.

Extensive monitoring of groundwaters is required in Condition 9 and Schedule F. See response to point (v) of submission 14 in relation to private wells.

Part 3. *A detailed report was issued by Mr. Steven Peel, Groundwater Engineer, Minerex Environmental, Taney Hall, Eglinton Terrace, Dundrum, Dublin 14 for Mr. Frank and Ms. Bridget Mulvey dated 5th May 1999. For the purpose of addressing the issues raised, these have been considered under the following headings. (i) Odours. (ii) Litter. (iii) Debris being carried onto Mulveys property and bird control measures. (iv) Vermin and flies. (v) Landfill restoration, final landform and visual intrusion. (vi) Impact of unlined site on groundwater and the monitoring of specific parameters in the groundwater. (viii) Management of leachate in unlined part of the facility. (ix) Water quality of Powerstown stream and surface water run-off. (x) Concerns in relation to the potential risks to the liner due to build up of leachate levels in cells 1-6. (xi) Punctures in liner of cell 2 and leakage of leachate from the northern side of cells 1-4. (xii) Leachate observed overflowing from leachate collection chambers. (xiii) Slope stability.*

RESPONSE

(i) See reply to submission 16. (ii) Condition 5.14, 6.6, 6.7 and 6.8 provides for the control of litter. (iii) See response to issue (iii) in submission 13. (iv) See response to issues (v) and (vi) of part 2 of submission 11. (v) Condition 8.1 and 8.2 relates to the restoration and aftercare plan and final profile of the facility. Condition 5.7 specifies that waste shall not be deposited in any cell or part of the landfill without prior agreement with the Agency. (vi) Condition 9.6 requires the licensee to submit an assessment into the cause, nature and extent of groundwater contamination in the vacinity of the site, in so far as it relates to the facility and proposals for its remediation, to the Agency. Extensive monitoring is required by Condition 9 and Schedule F to ensure the protection of groundwaters. (viii) Condition 4.21.7 relates to the proposal for the management of leachate in the unlined part of the site. (ix) Monitoring of Powerstown Stream is required by Condition 9 and Schedule F to ensure its protection. Condition 4.23.1 requires the licensee to submit an ongoing management programme for the control of surface water run-off from the facility during construction, operation and restoration. (x) Condition 4.20.1 specifies that there shall be no recirculation of leachate onto cells 1-6 inclusive either directly or indirectly via recirculation onto nearby cells. This is to ensure that there is no additional build up of leachate within these cells. Condition 4.21.7 requires the licensee to submit a proposal to minimise leachate levels in cells 1-6. (xi) The direction of groundwater flow is towards the north of the facility. Groundwater monitoring boreholes are positioned such that any contamination arising from the cells to the north of the site should be detected in the monitoring results from the relevant boreholes. Condition 10.7 requires specific measures to be taken should monitoring results indicate that an incident has occurred. Condition 4.21.5 requires the an assessment of the potential leachate seepage from the cells in the north of the facility and proposals to remediate any such leakage. (xii) The management of leachate is required by Condition 4.20 and 4.21. In particular condition 4.21.4 requires the licensee to maintain all infrastructure that forms part of the leachate management system in a safe and fully operational manner. (xiii) Construction of future cells is specified by Condition 4.16 *Specified Engineering Works*. This will also be addressed by the restoration and final profile of the facility as required by Conditions 8.1 and 8.2.

Part 4. *A detailed report was prepared by S.M. Bennet & Co.,, Grove Hill, Bishophill Road, Ballymore Eustace East, Co. Kildare on behalf of Ms. Mulvey dated 11th May, 1999. The main issues raised are as follows: (i) Incomplete coverage of a number of issues in the EIS. (ii) Intolerable noise levels. (iii) Odours (iv) Dust. (v) Debris and litter on Mulveys property. (vi) Unacceptable health and safety aspects. (vii) Vermin control. (viii) Inadequacy of hydrogeological investigations undertaken. (ix) Concerns in relation to the management, handling and containment of leachate. (x) Dissatisfaction with Carlow County Council in relation to health and safety, water quality and nuisance complaints brought to their attention by Ms. Mulvey.*

RESPONSE

(i) The EIS was assessed as complying with the relevant legislation. (ii) See response to issue (vii) of Part 2 of submission 11. (iii) See reply to submission 16. (iv) Condition 6.9 specifies measures to minimise airborne dust nuisance. Schedule F specifies dust monitoring to be undertaken. Schedule G specifies dust emission limits. (v) See response to issue (i) of Part 2 of submission 11 and see response to issue (iii) of submission 13. (vi) The facility when operated within the conditions of the licence shall not cause significant environmental pollution. (vii) Condition 6.1 and 6.2 refer to the control of vermin. (viii) Sufficient hydrogeological information was submitted with the application. Further information in relation to hydrogeology is required by Condition 4.24 and Condition 9.6. Extensive monitoring is required by Condition 9 and Schedule F to ensure the protection of groundwaters. (ix) The management of leachate is required by Condition 4.20 and Condition 4.21. (x) The contents of the Annual Environmental Report as required by Condition 2.8 includes a report on complaints summaries. Condition 2.7 requires the licensee to prepare a

Communications Programme to ensure that the public can obtain information concerning the environmental performance of the facility.

12. Ms. Bridget Mulvey, Goleen, Milford, Carlow made a submission which was received on 11th August 1999

(i) Ms. Mulvey sent in a letter which mainly included an extract from a fax which she received from Mr. Stephen Peel, Minorex who prepared a submission on her behalf. (ii) Included in this submission was a copy of a letter that Ms. Mulvey sent to the County Manager, Carlow County Council. Most of the issues raised in this letter have been addressed through the previous submissions. Her is particularly concerned with the contamination of her private water supply.

RESPONSE

(i) The details of the fax are mainly requesting clarification on issues which he raised in his report. The response to Part 3 of submission 11 addresses these issues. (ii) High concentrations of Coliforms have been detected in Ms. Mulveys private well since 1995. As the groundwater is hydraulically connected to the Powerstown stream, the shallow groundwater coming from the site discharges to the stream. This indicates that the migration of any contaminants will be contained. Ms. Mulvey's well is located cross gradient to down gradient of her septic tank which is the most likely source of the high coliform numbers. Condition 4.24.3 requires the licensee to submit a proposal to determine the groundwater flow regime to the north of the site. This will clarify whether potential contaminants from the landfill can reach Ms. Mulveys private water supply. Condition 9.1 specifies that all private wells within 500m of the facility are to be sampled on an annual basis for a number of parameters. Condition 10.6 requires that in the event that monitoring of local wells indicate that the facility is having a significant adverse effect on the quantity and/or quality of the water supply that it be treated as an incident and that proposals be submitted to the Agency for the provision of an alternative supply of water to those affected.

13. Ms. Mary White, Green Party Spokesperson on the Environment, Killedmond, Borris, Co, Carlow made a submission which was received on 5th June, 1998.

Ms. White raised the following issues in her submission. (i) Request for an Environmental Impact Statement to be carried out. (ii) Litter. (iii) Birds carrying rubbish from the landfill into Mulveys garden. (iv) Closure of B&B due to the landfill (v) Devaluation of property.

RESPONSE

(i) The Agency requested that an Environmental Impact Statement be carried out on 18th August 1998 which was submitted on 26th February 1999. (ii) Condition 6.6, 6.7 and 6.8 deals with the control of litter. (iii) Condition 6.4 requires that birds to not give rise to nuisance in the immediate area of the facility and requires an assessment to be carried out on the effectiveness of bird control measures. Condition 5.14 provides for the provision of daily cover to minimise any nuisances occurring. (iv) and (v) The facility when operated in accordance with the conditions of the licence will not cause environmental pollution.

14. Mr. Patrick Townsend, Powerstown, Milford, Carlow made a submission which was received on 6th July, 1998.

Mr. Townsend raised the following issues in his submission.(i) Litter and debris being carried from the site onto his land. (ii) Asbestos disposed without notice given to the residence.(iii) Dogs disposed by the ISPCA (iv) Disposal of sewage sludge and the associated odours (v) Concern regarding contamination of their private well.

RESPONSE
(i) See response to points (ii) and (iii) in submission 13. (ii)Future handling and disposal of non hazardous asbestos is dealt with within the Proposed Decision. (iii) Condition 5.2 specifies what wastes can be accepted for disposal at the facility. (iv) Condition 5.9 specifies the procedure to be used for the disposal of sewage sludge to minimise odours. (v) Condition 9.11 specifies that all private wells within 500m of the facility are to be included in the monitoring programme. Condition 10.6 requires that in the event that monitoring of local wells indicate that the facility is having a significant adverse effect on the quantity and/or quality of the water supply that it be treated as an incident and that proposals be submitted to the Agency for the provision of an alternative supply of water to those affected.

15. Ms. Maeve O'Callaghan, Duchas The Heritage Service, National Monuments and Historic Properties, 51 St. Stephen's Green, Dublin 2 made a submission which was received on 11th May, 1999.
Ms. Callaghan in her submission raised the following issues (i) A listed of the archaeological monuments which exist with the area of the facility. (ii) She recommended that an archaeologist be employed to carry out an archaeological assessment and provided details as to what should be included in this assessment as it does not appear that an archaeologist was engaged to carry out such an assessment in relation to the development.

RESPONSE
(i) and (ii) Condition 4.17 requires that prior to the development of new cells that the licensee shall submit to the Agency an archaeological report of the proposed development work carried out by a appropriately qualified person .

16 .Mr. Sean Nolan, Powerstown, Milford, Co. Carlow made a submission which was received on 21st May 1999
Mr. Nolan is a resident which lives to the south-east of the facility. His main concern is in relation to odours.

RESPONSE
Condition 6.12 requires that activities shall be carried out in a manner such that odours do not result in significant impairment of, or significant interference with amenities or the environment beyond the facility. Condition 6.13 requires the licensee to submit proposals for the assessment of odours. Schedule F provides for the monitoring for minor landfill gas constituents including H_2S, mercaptanes etc., where requested by the Agency. Condition 5.14 provides for the provision of daily cover to minimise any nuisances occurring.

15.2 SUMMARY OF COMPLAINTS

The complaints file for the Environmental Management and Planning Division contains two files in relation to Powerstown Landfill as follows:

1. Ms. Bridget Mulvey has continually been in contact with the Agency since August of 1996 in relation to the operations at Powerstown Landfill. These complaints were followed up at the time with Carlow County Council, adopting the complaints procedure used by the EM&P Division. The issues raised in these complaints have been addressed in submissions 7-12 made by Ms. Mulvey.

2. Mr. Sean Nolan has been in contact with the Agency since November 1998 in relation to odours from Powerstown Landfill. These complaints were followed up at the time with Carlow County Council adopting the complaints procedure used the EM&P Division. This issue had been addressed in submission 16 made by Mr. Nolan.

Signed _____ Dated:

Name

APPENDIX 1

LOCATION PLAN
AND
FACILITY LAYOUT

APPENDIX 2

LIST OF PERSONS MAKING SUBMISSIONS