

INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER 78-1

Facility: Ballaghveny Landfill, Tipperary North Riding County Council

Inspectors Recommendation: The licence to be granted subject to conditions

(1) Summary:

The facility consists of an existing municipal waste landfill and a proposed extension located approximately 4 km north of Toomevara, and 11km north-east of Nenagh. The current site is approximately 5.3ha in area. Tipperary NR County Council have purchased an additional 11ha for the proposed extension of which approximately 4.2ha will be developed for landfilling. There is a requirement for a minimum 40m buffer zone between the landfill footprint for the proposed extension and the facility boundary on the eastern and northern facility boundary to be maintained. Tree screening and agricultural lands form a buffer zone (c.400m) on the western boundary. A location plan showing the outline of the facility to which this application relates and a site layout plan are provided in Appendix 1.

The site has been in operation since 1985. Five cells have been developed, with the three most recent cells lined. Approximately 294,000 tonnes of waste has been deposited at the facility to date with a further capacity of 290,000 tonnes including the proposed extension.

The primary land use in the immediate vicinity of the landfill is agriculture. There is a piggery (620 sow integrated unit, IPC Reg. No 467) located just outside the south-west boundary of the extension area. There are 2 residences located 160m east of the site entrance with a number of other dwellings within 500m of the site. The landfill lies within the catchment of the Ollatrim River located approx. 600m south of the site. The Ollatrim River flows westwards before it joins with the Nenagh River and discharges to Lough Derg.

Description of Principal Activity	The disposal of waste at a specially engineered landfill
Quantity of waste (tpa)	36,200
Environmental Impact Statement (EIS) Compliant	Yes
Number of Submissions Received	53

FACILITY VISITS:

DATE	PURPOSE	PERSONNEL	OBSERVATIONS
18/12/98	Inspection of site and site notice	S. Kennelly	Site notice in accordance with Article 8 of Regulations
27/04/99	Site inspection	S. Kennelly	
13/03/00	Site inspection	S. Kennelly S. McMahon	Poor housekeeping, constant flow of surface water to leachate lagoon
01/09/00	Site inspection	S. McMahon	Very poor covering of waste
20/9/00	Site inspection and meeting	S McMahon, B Donlon	Elevated waste levels, fencing absent, Wind-blown litter, inert cover being sourced within application boundary

(2) Facility Development

Site security which includes CCTV and fencing around the 40m buffer zone and the existing facility is specified under Condition 4.3. At present, the local roads are inadequate to facilitate large vehicles hence, Condition 4.20 requires access road improvements as proposed by the applicant to be carried out prior to the commencement of waste activities in the proposed extension. There is a weighbridge located at the reception area of the existing landfill which will be relocated to the reception area of the proposed extension.

Leachate is collected from the 3 lined cells in the existing landfill. There is no leachate management in unlined cells 1 and 2. Condition 4.15.5 requires extraction/monitoring wells to be installed. The liner system for the proposed extension is specified in the proposed decision. The predicted volume of leachate to be generated at the site in the first year of the extension is 13,300m³/annum. Leachate is to be tankered to a treatment plant other than Nenagh UDC Treatment Works as it is currently running at full capacity, subject to Agency agreement. The predicted maximum PE (BOD) of the leachate is 5,600. There is no spare capacity at the Nenagh WWTP to deal with this leachate. There are other Treatment Works with adequate spare capacity in North Tipperary.

There are 5 passive gas vents in the lined cells of the existing site with no gas management in the unlined cells. An active gas control system which will incorporate both the existing and proposed landfill is to be installed, whereby the gas will be extracted from the waste and flared. Surface water management is specified under Condition 4.18 of the licence.

Condition 5 restricts the waste types to be accepted and sets out the conditions for waste management arrangements at the facility including the hours of operation. Potential environmental nuisances are controlled by condition 6.

The capping system for the landfill is specified in Condition 4. The Agency's landfill restoration and aftercare manual is required to be followed during the development of the Restoration Plan. Condition 4.17.3 requires the licensee to submit a report on the areas of the landfill already restored. Condition 8 requires detailed restoration and

aftercare plans and a drawing of the final contours to be submitted for agreement with the Agency.

It is proposed to refuse Class 1 and Class 8 Activities of the Fourth Schedule as they are best catered for under Class 13 of the Fourth Schedule. It is also proposed to refuse Class 6 of the Third Schedule, as the composting applied for is catered for under Class 2 of the Fourth Schedule (Recovery of waste).

(3) Waste Types and Quantities

Condition 5 and Schedule G control the types and quantities of waste to be accepted at the facility. The application was for a maximum tonnage of just under 37,000 per annum. The types of wastes to be accepted are as follows: 19,000 tpa household, 4,500 commercial, 3,500 treated sewage sludge (no industrial sludges were applied for), 9,600 construction and demolition and 400 industrial non-hazardous solids.

(4) Emissions to Air

Emissions to air are from dust, landfill gas, odour and noise.

Dust deposition monitoring was carried out at three locations around the site. The dust monitoring shows levels lower than $350\text{mg}/(\text{m}^2\text{d})$ for the samples taken at each of the three monitoring locations. An additional dust monitoring location is to be agreed with the Agency. Monitoring was carried out at 12 gas boreholes in the existing and proposed site in September 1998. The results showed elevated CO_2 in some boreholes and one elevated CH_4 reading which was located in the existing landfill. Odour is controlled under Condition 6 of the proposed decision. The proposed decision requires the applicant to comply with noise limits $55\text{L}_{\text{eq}}\text{dBA}$ (daytime) and $45\text{L}_{\text{eq}}\text{dBA}$ (night-time) at noise sensitive locations (NSL1 and NSL2) in addition to carrying out a noise survey on an annual basis.

(5) Emissions to Groundwater

The bedrock underlying the site is argillaceous limestone (Ballysteen Limestone) and is classified as a Poor Aquifer. The subsoils of the existing site which is a worked out sand and gravel pit, is boulder clay, about 8m to 9m in thickness over most of the existing landfill. The proposed extension area is underlain by a mixture of gravelly clays and clayey gravel and the thickness of these deposits varies from 2m to 7m. Peat covers the north of the site. The vulnerability of the site varies from high to extreme and falls into category R2^2 in the Groundwater Protection Response Matrix for Landfills.

There is one groundwater monitoring borehole in the existing landfill and a number of boreholes upstream and downstream of the landfill. Groundwater both upstream and downstream of the landfill in general does not meet drinking water standards. Elevated levels of ammonia, Manganese, Iron, potassium and calcium have been found both upstream and downstream of the landfill. There is a piggery adjoining the site on the south-western boundary and it is thought that this may be impacting on the water quality upstream of the landfill as elevated levels of nickel, zinc and chromium

have been found in some wells. However, the wells (RC2 & SA1) where these elevated levels of metals were recorded are upgradient of the facility, although these elevated levels may have been caused by landspreading of piggery slurry. These metals which would not usually be found in groundwater are commonly added to the diet of pigs. Wells beneath and immediately downstream of the landfill are contaminated by leachate as high levels of ammonia (BH3 which is located just outside the south-east boundary, recorded levels of 5.9 mg/l N) and increased conductivity have been found. The Council have been advised to notify any users of such wells of these findings.

The proposed decision requires that leachate be collected and treated from the unlined cells of the existing facility. Condition 9.1 and Schedule E specify the groundwater monitoring programme. Condition 9.6 specifies that all private wells within 500m of the site are monitored and in the event of the landfill having a significant adverse effect on the quantity and or quality, an alternative water supply must be provided under Condition 10.5.

(6) Emissions to Sewer

There are no emissions to sewer.

(7) Emissions to Surface Waters

The Ballaghveny Stream runs southwards close to the western boundary of the site before running westwards along the southern boundary. The Ballaghveny Stream joins with the Ollatrim River which in turn joins with the Nenagh River in Nenagh Town. The Nenagh River discharges to Lough Derg. The Ollatrim river is of relatively good quality, however, the Ballaghveny stream is slightly polluted both upstream and downstream of the landfill. Condition 4.18 requires a surface water management plan to be implemented at the facility to ensure that only clean surface water is discharged to the Ballaghveny Stream. The surface water management plan includes the installation of a silt trap and a stormwater retention pond at the site. Condition 9.1 & 9.9 and Schedule E require surface water monitoring for three locations on the Ballaghveny Stream and two on the Ollatrim River, one upstream of the confluence with the Ballaghveny Stream and one downstream.

(8) Other Significant Environmental Impacts of the Development

None.

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

The local authorities in the Midlands have prepared a Draft Waste Management Strategy Report dated January 2000. This report states that Ballaghveny has a remaining capacity of 345,000 tonnes and a lifespan of a further 10 years.

(10) Submissions/Complaints

53 valid submissions were received in relation to the facility. I have had regard to the submissions in making my recommendation to the Board. Appendix 2 contains a numbered list of all submissions received relating to the application.

Below I have summarised the main concerns raised in the submissions and where possible grouped them under the most appropriate heading.

1. Traffic/Inadequate roads

A large number of the submissions raised concerns about the heavy traffic caused by the landfill and the inadequate roads leading to the landfill. Issues include the following:

- a) Roads are inadequate to deal with the heavy traffic*
- b) Roads are potholed and litter strewn*
- c) The applicant has previously committed itself to upgrading the roads and nothing has been done.*
- d) High risk of accidents and it is dangerous for children, cyclists, pedestrians and horse-riders.*
- e) There is a set route for traffic going to the landfill but this is not being enforced.*

Response

Condition 4.20 requires that road improvements (as proposed by the applicant) be put in place before waste is accepted at the proposed extension. Loose litter found in the environs of the landfill is to be removed in accordance condition 6.3

2. Nuisances

Concerns regarding a number of environmental nuisances were raised. They are as follows:

2.1 Rats/flies

- a) Rats and Flies are a health hazard both to humans and animals*
- b) flies have been a problem in the past*
- c) spraying of pesticides and its effects on asthmatics living near the landfill*
- d) rat numbers have increased because of the landfill*

Response

Vermin controls will be put in place under Condition 6.9. Condition 5.9 requires the waste to be covered daily. This will reduce the potential attraction of the landfill for rats and flies.

2.2 Litter/flytipping

- a) windblown litter from the landfill is widely dispersed throughout the locality and has impacted on the economic and amenity value of neighbouring lands including scaring horses in a nearby equine business*
- b) the landfill is located on an elevated site, has no proper perimeter fence and has no effective litter patrols*
- c) litter is strewn on the road-side leading to the landfill from traffic passing by*
- d) flytipping is occurring along the route to the dump and in a nearby bog and forest.*

Response

The application of daily cover (Condition 5.9) and the application of the control measures required by Condition 6.3 including the erection of litter netting will control litter. All loose litter accumulated within the facility and its environs shall be removed and disposed on a daily basis (Condition 6.3.4). Condition 6.5 requires that all vehicles delivering waste to and removing waste from the facility shall be appropriately covered.

2.3 Dust

- a) *dust from the landfill is particularly bad during the summer*
- b) *applicant has failed to manage the dust problem and failed to address the problem in the EIS adequately*
- c) *TA Luft standard for dust is more suited to a heavily industrialized area than a rural area surrounding the landfill. The EIA didn't give an analysis of the constituents of the dust and therefore it is impossible to assess the possible effects of the dust on humans, farm animals or wildlife*
- d) *Has been an increase in dust from the site in recent years and TNRCC is requested to carry out an investigation to assess if increased asthma levels in the locality are caused by dust.*

Response

Appropriate dust deposition standards have been set. Dust control measures will be applied to the facility. These measures include the wetting of site roads (Condition 6.6) and the installation of a wheelwash (Condition 4.9).

2.4 Odours

- a) *persistent odours emanate from the landfill and have diminished the amenity value of adjacent lands*
- b) *applicant has failed to manage the odour problem and failed to address the problem in the EIS adequately*
- c) *continuous smells are a health hazard*

Response

Condition 5.9 requires that the working face be covered on a daily basis and any cover material that has been removed or eroded be replaced by the end of the working day. Condition 6.7 requires that the activities at the facility shall be carried on such that odours at the facility or the immediate area of the facility will not give rise to nuisance. Condition 4.16 controls landfill gas initially by means of passive venting. The vents will be fitted with filters to reduce the odours.

2.5 Birds

- a) *Birds dropping waste on neighbouring properties are a health hazard to both animals and humans*
- b) *Large flocks of birds are unsightly*
- c) *Dead and decaying birds found on neighbouring lands*

Response

Conditions 6.1, 6.7 and 6.9 provide for the control of nuisance from bird populations.

3. Landfill gas

These issues were as follows:

- a) Adequate gas management be put in place at the landfill.*
- b) Landfill gas inadequately addressed in the EIS*
- c) Concerns of health effects on humans from landfill gas. A paper entitled 'Investigations of cancer incidence and residence near 38 landfills with soil gas migration conditions, New York State, 1980-89'(Atlanta, Ga: Agency for Toxic Substances and Disease Registry, June 1998) is cited by the North Tipperary Association of An Taisce.*
- d) Landfill gas odours are a problem in lands and residences near the dump.*
- e) An assessment of the potential for gas utilisation was requested to be carried out immediately as the proposal to collect and flare gas 'is unacceptable and would represent a further unacceptable environmental intrusion into this locality'.*

Response

Landfill gas is controlled by Condition 4.16. Initially landfill gas will be passively vented and the vents will be fitted with an effective activated carbon filter. Within six months of the date of grant of the licence a landfill gas flare shall be installed (Condition 4.16.1) thus allowing landfill gas to be flared at the earliest opportunity in accordance with the Agency's manual "Landfill Operational Practices". In the long term the utilisation of landfill gas is the preferred option and provisions are made in Condition 4.16.6 such that an annual assessment on the feasibility of utilising the landfill gas shall be made and submitted to the Agency. At present the volume of gas estimated to be generated at the site is not sufficient for utilisation. ELV's are set in Schedule F: Emission Limit for landfill gas concentrations in any building or any enclosed space on or adjacent to the facility (F.2) and for the landfill combustion plant and flare stacks (F.4).

4. Leachate Management/Control

The issues raised were as follows

- a) Leachate was escaping into nearby drains and watercourses (no evidence was provided)*
- b) Glass being accepted at the site that could be damaging to the liner*
- c) Nenagh Treatment Plant is not capable of treating effluent adequately*
- d) Lack of information regarding leachate in the application*
- e) The reply to the Agency's section 52 notice was not received in the specified timeframe*
- f) No contingency plan for leachate in the event of an accidental leak into the surrounding environment*
- g) Leachate proposed to be "spread on unlined cells".*
- h) It is alleged that coliforms detected in wells and stream near landfill.*
- i) Concerns of leachate lagoon overflowing after heavy rainfall periods.*
- j) Site should be monitored upon closure and maintained within EU guidelines.*

Response

Leachate management is specified under condition 4.15 of the licence. Liner specification is provided under condition 4.14. This includes a drainage layer of a minimum of 0.5m above the liner. Waste will not be placed directly on the HDPE liner. Under condition 7.6.2 of the licence leachate will not be permitted to discharge

to Nenagh Treatment Works. It will be treated at an alternative facility that has adequate capacity, to be agreed in advance with the Agency. Leachate can only be recirculated onto lined cells (Condition 7.6.4). Leachate levels in all lagoons will be maintained such that a minimum freeboard of 0.75m shall be maintained at all times. Improved surface water management will result in the separate collection and storage of surface water run-off. The licence (Condition 10.1) requires the licensee to submit an Emergency Response Procedure to the Agency in order to address any emergency situations which may originate on the facility. Condition 9 requires groundwater monitoring which will incorporate private wells. An interpretation of all data shall accompany monitoring results. Conditions 9.6 and 10.5 of the PD require proposals for an alternative supply of water in the event of water quality deterioration. Condition 8 requires the site to be restored in accordance with the Landfill Directive and the Agency's Restoration and Aftercare Landfill Manual.

5. Water Quality – Groundwater and surface water

- a) pollution caused to wells in properties of the site (no evidence submitted with submissions)*
- b) possibility of toxic chemicals entering the watercourses and the local raised bog*
- c) groundwater levels not mapped in application*
- d) liner leaking allowing leachate into groundwater*
- e) concerns regarding the risk of contamination of Elmhill group water scheme which is upstream of the landfill site*

Response

Surface water management is required under condition 4.18. Condition 7.5 stipulates that no contaminated surface water shall be discharged to the Ballaghveny stream. Condition 4.15 requires leachate extraction in the unlined cells of the existing facility and collection and storage prior to treatment of all leachate. Conditions 10.5 and 9.6 of the PD require proposals for an alternative supply of water in the event of water quality deterioration.

6. Human Health

- a) Asthma caused by dust from the landfill and Fires in the landfill*
- b) Recently a case of meningitis was recorded in the area*
- c) Impact on local health of spreading sewage sludge on unlined cells*
- d) Health concerns regarding flies, vermin, gas, odour and water pollution*

Response

Nuisances are dealt with in section 2 above. Only treated sewage sludges are to be accepted at the site (Condition 5.1). Sewage sludge shall be covered immediately with other waste (Condition 5.11.1). No material that is incompatible with the proposed restoration of the facility shall be present within 1 m of the final soil surface levels (Condition 8.5). Landfill gas management is required.

7. Negative impact on property and livestock

- a) Devaluation of property*
- b) Dust, litter and traffic incompatible with effective horse breeding and training*

- c) *Deaths and illness of livestock. A submission was received on the 27th September 2000 from a farmer whose land adjoins the landfill on the eastern boundary. He stated that in 2000 he lost 11 calves and one cow to illness. A blood sample report was submitted with the submission. Other submissions stated that they had also lost livestock to ill health. A vets report was submitted with the above submissions which states the following; “The siting of a dump in this area is detrimental to the health of animals in the adjacent farms due to spread of toxic and infectious materials by both seepage and wildlife vectors resulting in a higher than average incidence of infectious diseases such as Salmonella and E. coli Enteritis”*
- d) *A Submission was received from the owner of a piggery adjoining the south west border of the site. He raised concerns regarding the health of his pigs and also his family. He requested a “Cordon Sanitaire” between the landfill and his property.*

Response

The facility, operated in accordance with the conditions of the licence, will not significantly impact on the residents, the amenities and resources within and in the vicinity of the landfill. The submitter of the animal health problems submission has been made aware of the agreed protocol between the Agency, Department of Agriculture and the Health Authorities.

A buffer zone of a minimum of 40 metres will be maintained between the proposed extension and adjoining properties.

8. Inadequacy of Notice

A number of submissions raised the inadequacy of the Council notices of the development as an issue.

Response

Site Notices are obliged to fulfil requirements of the waste licensing regulations. In addition, a newspaper notice is also required to be published. To this effect both the site notice and newspaper notice were inspected, assessed and found to be compliant with the regulations.

9. Lack of confidence in the County Council

The following issues were raised in the a number of submissions

- a) *Previous mismanagement of the site*
- b) *Lack of public consultation*
- c) *Breach of previous undertakings given by the council regarding road improvements, lifespan of the landfill, amount of waste to be accepted and level of management of the facility*
- d) *Previous compensation claim by the previous owners of Woodville Estate in respect of pollution and damages to their land. (No compensation was paid but the Council subsequently purchased the estate. Many submitters feel that this was done to have the compensation claim “swept under the carpet”)*
- e) *2 local piggeries were allow to expand without planning permission from the Council*
- f) *Bias of the Agency towards Local Authorities*
- g) *Is applicant a “fit and proper person”*

- h) Polluter should pay and not the local residents*
- i) Monitoring results not forthcoming from Local Authority*
- j) Excavation works for cover material ongoing which represents unlicensed development*
- k) Council were accused in one submission of using bullying tactics to acquire Woodville Estate*
- l) Council are not operating site or restoring site in accordance with recommendations of An Foras Forbatha in 1985*
- m) A request was made for monitoring of the site by a person appointed by BEG at the Council's expense. They named Jack O'Sullivan as this person.*

Response

Tipperary NR County Council made their Waste Licence Application in accordance with relevant regulations. All applications are required to be assessed for compliance with the Waste Licensing Regulations. All licensees are required to comply with the conditions of their licences. Condition 2 makes provision for the management of the facility incorporating a communication programme ensuring that the public can obtain information concerning the environmental performance of the facility. The licensee will need to make significant investment on an on-going basis in order to ensure the on-going protection of the environmental resources within the vicinity of the facility during development, operation and aftercare. The issues relating to bullying tactics, compensation claims and planning permission for piggeries are not matters for the Agency. All works associated with the on-going development would be subject to prior agreement of the Agency as part of specified engineering works. At licensed facilities, the Agency undertake site inspections, audits and monitoring on a regular basis.

10. Location of Site/Site Suitability

- a) Vulnerability of site(located in old gravel pit)*
- b) Meaningful site appraisal not carried out*
- c) Alternative sites not investigated*
- d) The entrance and reception areas of the facility will be located directly in front of Woodville House (submission states that it has the potential to be listed and it is one of 7 Georgian houses in the area. It was built in 1755)*
- e) Intensely farmed area*
- f) Visual impact from the landfill site*
- g) Three piggeries in the area*
- h) To Excavate good farmland for a landfill was not BATNEEC*

Response

The information required to assess the application was submitted to the Agency in accordance with the regulations. Any future cells will be engineered to comply with best international landfill practice. Leachate management at the facility incorporates the unlined cells. The facility operated in accordance with the conditions of the licence will not significantly impact on the residents, the amenities and resources within and in the vicinity of the landfill. Emission Limits are set in Schedule F for the following emissions noise, landfill gas concentrations, landfill gas flares, dust deposition and surface water discharge. These limits are based on internationally recognised best practice. The proposed decision requires monitoring of all emissions (*Condition 9*) and reporting to the Agency.

11. EIS Quality

- a) *EIS States that landfill is to serve North Tipperary but does not mention other counties it is to serve under the Midlands Waste Management strategy*
- b) *Conflict of interest between the consultants acting on behalf of Tipp. NR County Council and the 5 counties involved in the Midlands Waste Management Strategy*
- c) *No provision for leachate leakage accidents*

Response

The EIS and the further information submitted by the applicant was assessed under the Regulations and found to be in compliance. Conditions 3.1 and 10.1 will cater for any incidents/emergencies that may occur.

12. Incompatibility of proposed development with other Policy and Strategies

- a) *Waste management policy*

The submission states that the development is incompatible with both EU and Irish waste management policy as landfill is the last option in the waste hierarchy.

- b) *Midlands Waste Management Strategy*

It is stated that as thermal treatment which is included in the waste management strategy is unlikely to happen that the volumes of waste to be accepted at Ballaghveny will increase. It is suggested that a new bigger site would be required. Implications of implementing this strategy.

- c) *County Development Plan*

The 1998 County development plan states that Ballaghveny “is expected to meet the county requirements for the next two years”.

Response

The information required by the Agency to assess the application was submitted in accordance with the Regulations. The Agency have considered the Draft Waste Management Strategy Report for the Midlands dated January 2000 which states that Ballaghveny has a remaining capacity of 345,000 tonnes and a lifespan of a further 10 years. The conditions of the licence specify the quantities and types of waste permitted to be disposed of at the landfill.

13. Submissions were received from waste contractors in Tipperary.

They raised the following issues

- a) *Monday closure causes them to store waste overnight, change collection routes, operate on Saturdays and advise their customers to hold waste until Tuesday. They also request that the landfill be open from 8.00 to 5.15 Monday to Friday*
- b) *Roads inadequate causing damage to trucks and litter to be dropped*
- c) *No wheelwash in current facility*
- d) *Inadequate tipping facilities and site roads*
- e) *Unfair charging system by the Council*
- f) *Request that there be adequate room for turning large vehicles*

Response

Condition 4.20 requires that road improvements be put in place before waste is accepted at the proposed extension. Loose litter found in the environs of the landfill is to be removed in accordance with Condition 6.3. A wheelwash is required under Condition 4.9 of the PD. Waste may be accepted at the facility from Monday to Saturday. Charges imposed by the Council should be dealt with directly with the applicant.

Signed: _____
Sinead McMahan

Dated : _____

**APPENDIX I
LOCATION MAP**