

**INSPECTORS REPORT  
WASTE LICENCE REGISTER NUMBER 11-1**

**(1) Introduction:**

<b>Name of Applicant</b>	Wicklow County Council
<b>Facility Name(s)</b>	Ballymurtagh Landfill
<b>Facility Address</b>	Ballymurtagh, Ballgahan Upper, Ballgahan Lower, and Tinnahinch, Co. Wicklow
<b>Description of Principal Activity</b>	Disposal on land of non-hazardous waste and municipal sewage sludge
<b>Quantity of waste (tpa)</b>	42,000
<b>Environmental Impact Statement Required</b>	Yes
<b>Date Application Received</b>	30 September 1997
<b>Number of Submissions Received</b>	Twenty seven
<b>INSPECTOR'S RECOMMENDATION</b>	That a licence be granted subject to the Conditions set out in the attached Proposed Decision.

**SITE VISITS:**

<b>DATE</b>	<b>PURPOSE</b>	<b>PERSONNEL</b>	<b>OBSERVATIONS</b>
22/10/97	Site Notice Inspection	Duncan Laurence	-
21/1/99	Site Notice Inspection	Duncan Laurence	Second notice missing, red road not in use
9/8/00	Familiarisation with site	Kevin McDonnell	Reasonably well run facility – landfill gas measures and infrastructure. Ground and surface water and slopes main issues.

The facility consists of an existing municipal waste landfill located in the townlands of Ballymurtagh, Ballygahan Upper, Ballygahan Lower and Tinnahinch in the Vale of Avoca, approximately 1.5 km north-west of Avoca village, County Wicklow. A location plan showing the outline of the facility to which the application relates is provided in Appendix 1.

The facility is located within a disused Lode Open Pit of the former Avoca Mines (copper and pyrite; 1720 to 1982). There are extensive underground mine workings in

the area and directly under the site. The facility (3 ha) has been operating as a landfill since 1989 and is accessed via a local access road (Red Road) from the R752. Both groundwater and surface water discharge primarily to the Avoca River. The discharges to the Avoca River are contaminated by acid mine drainage (AMD) resulting in low pH and high metal and sulphate levels. There are a significant number of properties within the vicinity of the facility. The facility is due for closure at the end of 2001 with up to an extra 6 months to bring in soils for restoration. The facility is operating as a dilute and disperse system, and although the operators have mentioned the use of “lined” cells – this has not been to any particular specification and hence could not be relied upon.

Condition 4.15 requires that the licensee submit a proposal for the utilisation of landfill gas as an energy source. Currently, there is an open flare unit in operation at the facility.

Between Condition 4.17 (surface water management) and Condition 4.18 (groundwater management), the PD requires that the licensee establish water management plans. Although the licensee states that the Avoca River (primary discharge waters for surface and ground waters) is biologically dead, I believe that this does not remove the onus on the operators to take due care in protecting the receiving waters from surface and ground water discharges. Also, the Eastern Regional Fisheries Board in a submission state that the Avoca River is stocked with fish and that they plan to reinstate the river as a salmonid fishery.

Condition 4.20 allows for composting to be carried out at the facility subject to the agreement of the Agency.

Condition 4.19.1 requires the licensee to relocate the existing civic facility from its current temporary location near the Red Road entrance to its proposed site at the facility entrance off the Arklow – Rathdrum Road (R752). The civic amenity facility is allowed accept up to 10, 000 t/a – this is to allow for the continuation of the civic amenity facility after the landfill is closed.

Condition 5.5 limits the quantity of wastes to 42,000 t/an which includes 2,000t/an of municipal sludges at the facility. No hazardous wastes are to be accepted at the facility.

Potential nuisances are controlled by Condition 6 – Environmental Nuisances.

Condition 7 requires the facility to operate without any direct impacts on ground or surface waters.

The PD requires the licensee to submit revised and updated Restoration and Aftercare Plan with due consideration of the Agency’s Landfill Manual: “Landfill and Restoration and Aftercare”. Due to the slopes present at the facility, Condition 8 requires slope

stability assessment and also proposed slope stability measures. It is proposed that the restoration plan will involve a stepping or contouring of the site to maintain slope stability and a planting program with both a woodland section and a grass/bush section in order to improve slope stability and blend the finished site into the surrounding landscape. Condition 8.3 limits the restoration heights to the contours submitted to the Agency in an Article 16 reply. This Condition was used as the complex nature of the facility contours made it impractical for the PD to specify a single contour height.

**(2) Waste Types and Quantities**

**Total quantities and types of wastes accepted by the facility are shown below.**

YEAR	NON-HAZARDOUS WASTE (tpa)	HAZARDOUS WASTE (tpa)	TOTAL ANNUAL QUANTITY OF WASTE (tpa)
1997	63,860	0	63,860
1998	65,776	0	65,776

**The total quantities of waste already deposited at the facility and to be deposited (as specified in the application) are shown below.**

	NON-HAZARDOUS WASTE (tonnes)	HAZARDOUS WASTE (tonnes)	TOTALS (tonnes)
<b>Already deposited</b>	240,000	0	240,000
<b>To be deposited</b>	130,000		130,000

**(3) Emissions to Air**

Emissions to air from the facility include landfill gas, odour and dust. The facility has an open flare system in operation and the PD requires a proposal re the generation of electricity from the facility and the upgrading of the unit to an enclosed flare unit. Schedule F 5 sets the emission limits. Since the facility operates in a disused pit, the internal roads have a minimal amount of fines present and hence dust is minimised. The main access road is a paved road which again minimises dust.

**(4) Emissions to Groundwater**

The facility is underlain by the Avoca Formation which is part of the Duncannon Group. The formation consists of chloritic tuffs which are frequently silicified and altered and sericitic lithic tuffs and crystal felsites. The bedrock underlying the site has been provisionally classified as a Poor aquifer – generally unproductive (Pu) under the groundwater protection scheme for County Wicklow. Groundwater flows for the area show flow directions from the surrounding higher ground to the north, west and south of the site into the underground mine workings which then discharges to the Avoca River. Analysis of the discharging waters show poor quality water with low pH and high levels of metals and sulphates due to AMD. Also, high levels of BOD and COD due to leachate from the landfill were measured thus indicating leachate contamination of the groundwater. The groundwater under the site is permanently unusable for both domestic and agricultural use due to the presence of AMD and ores as well as pollution by leachate and the presence of List I substances. By controlling the surface water from at the facility (Condition 4.17) and the requirement to cap all previously deposited wastes within 3 months of the date of grant of the licence, the impact of the facility on the groundwater will be minimised. Condition 4.18 requires the licensee to submit a proposal to the Agency to control groundwater discharges to the Avoca river in order to only allow discharges when there is sufficient volume to dilute any effluents – this concept is based on the GSI Hydrogeology Study of the mines in 1994. In the summary of that study, the GSI propose that the discharge to the river should be restricted to periods of high flow when effluent can be more effectively diluted. In their measurements, the discharge of groundwater from the area into the Avoca river via the Deep Audit (principal discharge point for the mined zone) varied from 10.6 to 33.9 litre/second. The Groundwater Directive requires that all technical precautions are taken to ensure that the List I substances cannot reach other aquatic systems or harm other ecosystems. By requiring the licensee to submit a proposal to the Agency based on the GSI study, I consider that the Agency is complying with the Groundwater Directive. Also, the measures for the capping of the landfill will minimise any polluting effects the discharge may have on the receiving waters. The PD includes a requirement for the applicant to monitor twelve groundwater boreholes.

#### **(5) Emissions to Surface Waters**

The applicant proposes to control surface water run-off by the installation of a perimeter drain. This will minimise the amount of surface water run-off from the higher lying areas into the facility and thereby reduce the volumes of leachate being generated. The installation of surface water drainage ditches up-stream of the landfill will also prevent uncontrolled surface water run-off which could cause surface erosion and thus affect the restored landfill slope stability.

#### **(6) Other Significant Environmental Impacts of the Development**

None.

#### **(7) Waste Management, Air Quality and Water Quality Management Plans**

Consideration was given to the County Wicklow Waste Management Plan (April 2000). In their waste management plan, Wicklow County Council recognises the lack of landfill capacity for the county. They also state that Ballymurtagh is almost at capacity and due for closure within 2 years. In the options being evaluated for Wicklow, there are no references to any possible further use or extension to Ballymurtagh.

#### **(8) Submissions/Complaints**

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

**An overview of the submissions received in relation to the waste licence application is provided. This includes a summary of all issues raised in the submissions.**

A total of 25 submissions were received in relation to this application.

***Ground 1.** The generation of odours from the facility. Submissions were received from local residents commenting on the frequency and severity of odours generated from the facility and the significant impacts which such emissions have on day to day life.*

**Response:**

Condition 4.15 of the PD ensures that landfill gas will be collected, flared and managed. Conditions 5.9 and 5.10 controls the size of the working face and daily cover.

***Ground 2.** The seasonal infestation of flies emanating from the facility is considered by local residents to be a nuisance factor and a health issue. Significant populations of flies arise from the facility during certain periods of the year, impacting on many of the private dwellings located around the facility.*

**Response:**

The control of the active face and the daily cover should ensure that flies are no longer a problem. Condition 6 of the PD specifically addresses the issue of nuisances, including nuisances from flies.

***Ground 3.** Submissions received from a local residents group regarding the potential health risks associated with the facility, and number of pathways through which health impacts may be transported from the facility.*

**Response:**

Conditions 5 and 6 of the PD ensure that bird, fly, rat and vermin populations are prevented and controlled at the facility. By minimising these populations the pathways for transportation of adverse health impacts will be minimised. The flaring of landfill gas will control airborne emissions while the implementation of capping and surface water management systems will prevent the pollution of waters.

**Ground 4.** *A number of submissions were received regarding the use of the Red Road as an access to the landfill.*

**Response:**

This is primarily a planning issue. However, subsequent to the PD application, Wicklow County Council entered into an agreement with the residents of Red Road regarding the upgrading, use and number of years for the use of the Red Road as an access point to the facility.

**Ground 5.** *The Eastern Regional Fisheries Board stated that the Avoca river was being revitalised and their plan was to reinstate it as a salmonid fishery. The quality of surface water from small streams and drainage ditches around the facility is also a concern of local residents.*

**Response:**

Conditions 4.17 and 4.18 require the licensee to implement effective measures to control both surface water and ground water. Condition 7 requires that discharges from the facility do not result in the deterioration of the quality of the receiving waters. Condition 9 and Schedule E require that a programme of surface water monitoring be implemented and maintained.

**Ground 6:** *Several submissions were received where the local residents were concerned about the storage of sewage in open lagoons.*

**Response:** The licensee is not allowed to store sewage sludge in open lagoons. Treated sewage sludge will be allowed for disposal under Condition 5.3 which requires deep burial. Condition 5.13 requires that all sludges accepted at the facility shall be treated sludges.

**Ground 7.** *The presence of litter around the site is an issue included in several submissions from local residents. Litter being generated by waste delivery, waste storage and fly tipping is considered a nuisance and an aesthetic concern to locals.*

**Response:**

See response to Ground 1. Also Condition 6 will address all these concerns.

**Ground 8.** *A number of submissions deal with the issue of the difficulties of using an old mining environment as a landfill due to the permeability of the underlying rock and hence the subsequent risk of ground water contamination.*

**Response:**

Controlling the quantity of surface water entering the facility (Condition 4.17) and daily cover (Condition 5.10) will minimise the amount of leachate to be generated in the facility. Also, Condition 4.18 requires that the licensee implement a groundwater management plan to protect the groundwater resources. Condition 9 and Schedule E require that a programme of water monitoring be implemented and maintained.

**Ground 9.** *The security of the landfill is a concern of locals, as there is uncontrolled access to the landfill due to breaches in the perimeter fencing.*

**Response:**

Condition 4.3 requires that security fencing be installed around the facility and it also ensures that there is no access to the facility unless supervised.

**Ground 10.** *The generation of landfill gas is included in submissions received regarding the facility. It is a concern as a potential for fires and public health impact.*

**Response:**

Condition 4.15 of the PD requires that a landfill gas management plan be agreed and implemented. Condition 9.2 requires that the applicant to monitor off-site migration of landfill gas.

**Ground 11.** *A number of submissions received are concerned about the impact of the facility on the local area and a loss of amenity as the area surrounding the facility as an area used for leisurely walks and recreation.*

**Response:**

Condition 6 of the PD requires that nuisances as a result of the landfill and associated activities be prevented and minimised, this together with Condition 8 –Restoration and Aftercare shall ensure that the nuisance factor is minimised and the restored landfill will blend with the local environs.

**Ground 12.** *A submission was received from the Eastern Health Board that a monitoring programme for gas, leachate, groundwater and surface water both during and after the lifespan of the facility be attached to any waste licence.*

**Response:**

Condition 9 of the PD requires the licensee to monitor for the above issues at a frequency as specified in Schedule E: Monitoring

**Signed** \_\_\_\_\_

**Dated:**

**Name:** Kevin McDonnell

**APPENDIX 1**

**LOCATION PLAN: Figure 1**

**SITE LAYOUT MAP: Figure 2**



## **APPENDIX 2**

### **LIST OF PERSONS MAKING SUBMISSIONS**