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| Environmental Protection Agency<br>An Ghníomhaireacht um Chaomhnú Comhshaoil | **OFFICE OF LICENSING & GUIDANCE** |

## INSPECTORS REPORT ON A LICENCE APPLICATION

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| **To:** | DIRECTORS | |
| **From:** | PERNILLE HERMANSEN | **- LICENSING UNIT** |
| **Date:** | 8 SEPTEMBER 2004 | |
| **RE:** | APPLICATION FOR AN WASTE LICENCE (REVIEW) FROM WESTMEATH COUNTY COUNCIL, LICENCE REGISTER 28-2, BALLYDONAGH LANDFILL | |

| Application Details | |
|---|---|
| Type of facility: | Landfill for non-hazardous waste |
| Class(es) of Activity (**P** = principal activity): | 3rd Schedule: Classes 1, 4, 5 (P) and 13<br>4th Schedule: Classes 2, 3 ,4, 11 and 13 |
| Quantity of waste managed per annum: | 60,000 tonnes |
| Classes of Waste: | Household waste, commercial wastes, construction and demolition waste and industrial waste. |
| Location of facility: | Ballydonagh Landfill, Dublin Road, Athlone, Co. Westmeath |
| Licence review application received: | 17/10/03 |
| Third Party submissions: | None |
| EIS Required: | Yes |
| Article 14 Notices sent: | 12/05/04 |
| Article 14 compliance date: | 2/07/04 |
| Site Inspection: | 18/12/03 Site notice non-compliant. Inspector: PH<br>12/03/04 Site notice compliant. Inspector: PH |

## 1. Facility

This report relates to an application by Westmeath County Council for a review of the existing waste licence for Ballydonagh Landfill (WL 28-1, issued on 24/03/99). The facility is classified as a landfill for non-hazardous waste in accordance with Article 8 of the Waste Management (Licensing) (Amendment) Regulations, 2002. The existing

facility comprises approximately 19.4 hectares and the proposed extension is approximately 6.6 hectares. The northern perimeter of the facility is adjacent to the N6 Dublin Athlone road. There is a 140 m buffer between the existing fill area and the N6 planted with evergreen trees. The area to the east, south and west of the landfill facility are used for agricultural purposes mainly animal grazing. There are 18 occupied residences within 500 m of the existing site boundary. The nearest occupied residential property is approximately 220 m to the north of Phase 1.

The principle amendments proposed in the review application to the existing waste licence (WL 28-1) are as follows:

1. To allow for composting of 500 tonnes of green waste annually to be included under Class 2 of the Fourth Schedule.
2. To amend Condition 1.2 to allow for the extension of the landfill area.
3. To amend Condition 5.2 and 5.5 to allow for increase in the waste tonnages accepted from 40,000 tpa to 60,000 tpa. Furthermore to accommodate variations in the quantity of various waste types accepted as long as the total annual waste quantity does not exceed the maximum annual tonnage
4. To amend Condition 5.8 to allow for the acceptance of waste to 17:30 Monday to Friday.
5. To amend Condition 8.1 to allow for a new restoration profile.

The applicant states that the extension to the landfill is required due to a delay in constructing the thermal treatment facility as proposed in the Waste Management Plan for the Midlands Region, 2001. The applicant deems that the additional landfill capacity will only be required for a short time period (2006-2009).

The applicant has applied to An Bord Pleanála for an approval for extension to the existing landfill on 30/08/04.

Classes 1, 4, 5 and 13 of the Third Schedule and Classes 2, 3, 4, 11 and 13 of the Fourth Schedule were applied for in the application. Class 5 of the Third Schedule is the principal activity.

The applicant has proposed to extend the hours of waste acceptance to facilitate private waste collectors. The recommended PD allows for the hours as proposed by the applicant (Condition 1.5).

| | Existing Hours 28-1 | Proposed hours for review |
|---|---|---|
| Hours of operation | *The existing licence does not detail hours of operation* | 8:00 –19:00 Monday to Friday<br>9:30 – 16:00 Saturday |
| Hours of waste acceptance | 8:30 – 16:30 Mon to Fri<br>10:00 – 15:00 Sat | 8:30 – 17:30 Monday to Friday<br>10:00 – 15:00 Saturday |

**Compliance Record**

The applicant has received 20 non-compliance notices since the issuing of the current licence (WL 28-1) many of these notices were issued in the early days of the facility being licensed. Over the last year the Agency has received 8 complaints regarding odour nuisances at the facility mainly due to the landfill gas management system in Phases 1 and 2 being inefficient (see Section 4.1 Air). At the last audit carried out at the facility on 18/10/03 (Audit report AR05jg attached) five non-compliances were

observed. At the last site inspection on 24/06/04 (site inspection report SI08CN attached) three non-compliances were observed. Two of the non-compliances observed during the site visit and the audit were: inefficient litter control measures and inadequate landfill gas management resulting in odour nuisances.

**Facility Infrastructure**

The installation of infrastructure at the facility is controlled by Condition 3 of the recommended PD.

The infrastructure required under the current licence (WL 28-1) has been installed at the facility. None of the cells at the existing landfill has been permanently capped yet. Condition 5.7 requires that filled cells shall be permanently capped within twenty-four months of being filled to the required level. The proposed development involves the construction of three new landfill cells (Phase 3) on lands to the east of Phase 1 and the provision of composting of green waste and non food compostable materials. The proposed landfill extension will be developed in two stages, stage 1 will involve the construction of cells 7 and 8 and Cell 9 will be constructed in stage 2. The development of the new landfill cells will involve the construction of a temporary access road off the N6, a permanent internal access road from the landfill cells, a leachate storage lagoon, diesel storage area, alterations to the perimeter surface water drainage system and provision of a perimeter security fence. The development of the composting area will involve the relocation of the firewater tank and the provision of an impermeable pad with a drainage system that connects to the existing leachate collection system.

The existing infrastructure serving the site including the site entrance, offices, weighbridge, civic amenity area, landfill gas flare and leachate collection and storage system will continue to operate.

## 2. Operational Description

The applicant proposes to accept 60,000 tonnes per annum. The PD allows the facility to accept up to 60,000 tonnes per annum consisting of household and commercial waste (53,500 tonnes), industrial waste (4,500 tonnes) and C&D waste (2,000 tonnes) detailed in Schedule A. The annual tonnages of the various waste types can be changed with the agreement of the Agency as long as the total annual tonnage remains the same. The applicant states in the Article 14 reply received on 2/07/04 that it is no longer proposed to accept sewage sludge (1000 tonnes) for landfilling at the facility as proposed in the review application.

At present, filling is taking place alternatively in Cells 3-5 and 4-6 of Phase 2 with the levels being progressively raised to tie into those in Phase 1. The applicant has proposed a phasing sequence for the cells of Phase 3 (Condition 5.7). The applicant states that the new cells is envisaged to be filled by 2009 – each cell being able to handle 60,000 tonnes of waste.

The applicant proposes to compost up to 500 tonnes per annum of green waste and non-food compostable material (e.g. timber, saw dust, chaff) (Condition 5.8.2). The recommended PD allows for composting to be carried out at the facility subject to agreement by the Agency by the way of SEW (Condition 3.3 and Schedule B) The composting will be carried out in a designated area (about 900 $m^2$) to include a waste reception, windrow and maturation area. The infrastructure at the composting area shall at a minimum consist of an impermeable pad with a drainage system connected

to the existing leachate collection system (Condition 3.19). The PD requires the applicant to develop procedures for handling/management of the composting process. The procedures should include details on monitoring, turning of compost etc. to control emissions and ensure the compost quality (Condition 5.8.2). Furthermore the applicant is required to submit specifications for the compost not to be considered a waste (Condition 5.8.2).

In the Article 14 reply received on 2/7/04 the applicant states that the civic waste facility will be closed following the opening of a new civic amenity facility in Athlone, scheduled for opening by August 2004. The recommended PD retains conditions to allow for waste acceptance/handling at the on-site civic waste facility, if needed.

## 3. Use of Resources

The applicant states the composting process will require water input but the amount can not be predicted precisely. Resource use is detailed as follows by the applicant: diesel oil 10,000 l, hydraulic/engine oil 205l and electricity 20,000 kWhr. According to the applicant it is not envisaged that the extension will result in a significant increase in the natural resource consumption from that currently used at the facility.

## 4. Emissions

4.1 Air

The applicant has received a number of complaints from members of the public about odours from the facility which upon investigation have been found primarily to relate to landfill gas. The existing gas collection system at the facility (described in the Inspector's Report for WL 28-1) has not been efficient in terms of collection and flaring of gas due to damage to the collection pipe work caused by waste placement and settlement. A new system was installed in January 2004, but odour complaints have been received since the installation due to insufficient number of wells in the waste body, disconnected wells and breakdown in condensate pumps. Condition 3.15 of the PD require that within six months of the date of grant of this licence the applicant submit an updated plan for the landfill gas management detailing works carried out at Phases 1 and 2 and works proposed for Phase 3 to include an assessment of the landfill gas collection system and the need for installation of additional gas wells.

In Phase 3 landfill gas wells will be installed in the base of each cell at 40 m intervals and will be progressively raised with each waste lift. The wells will initially vent to atmosphere during the operational phase, following which the wells will be connected to the existing gas collection and flaring system which will remain in its current location. The PD requires that an evaluation of the collection and flaring system is carried out when the three new cells are operational to determine if an upgrade of the flare is required as proposed by the applicant (Condition 3.15).

All the existing landfill gas monitoring boreholes are located at the perimeter of the existing landfill. Monitoring of these wells indicates that small volumes of gas (mainly $CO_2$) are migrating from Phase 1. According to the applicant this gas migration will significantly reduce when improvement to the collection system in Phase 1 and 2 has been carried out. The PD requires that the applicant submit a proposal for installation of additional perimeter boreholes based on a detailed exposure and risk assessment carried out in accordance with the Agency's *Landfill Manuals, Landfill Monitoring, 2nd Edition*. Based on this evaluation three perimeter

wells (G11, G12 and G13) as proposed by the applicant and/or additional perimeter monitoring boreholes may be installed (Condition 3.21 and Schedule D). The existing landfill gas monitoring location G5 will be lost due to development. Furthermore the PD requires that at least one landfill gas monitoring borehole is installed within the waste body in each cell at Phase 3 prior to the gas collection system being in place (Condition 3.21 and Schedule D).

Schedule D sets the monitoring requirements for landfill gas. The trigger levels for landfill gas are set out in Condition 6.3 of the PD. The landfill gas concentration limit values in buildings are set out in Schedule C of the PD.

## 4.2 Emissions to Waters

There is no direct emission to sewer at the facility. The toilet and canteen wastewater is discharged to a septic tank (Condition 3.10). Leahcate collected from phases 1,2 and 3 will be discharged to the leachate collection system to include an existing leachate storage tank and a proposed leachate lagoon prior to being tankered off-site to an agreed wastewater treatment plant (Conditions 3.14 and 5.11).

The leachate and surface water run-off from the composting facility will be discharged to the leachate collection system (Conditions 3.16 and 3.19). Surface water run-off from the waste quarantine and inspection area is discharged to the wheel wash which is connected to the leachate collection system (Condition 3.16).

**Emission to surface waters**

The surface water run-off from the facility is discharged to a stream beyond the northern side of the N6 Dublin Athlone Road. According to the applicant the surface water monitoring required by the existing licence has identified that the water quality at all three locations (disharge point (SW3), upstream (SW1) and downstream (SW2)) is generally good.

Surface water run-off from the impermeable area at the site entrance excluding the composting area, the waste quarantine/inspection areas and the wheel wash will be discharged to the surface water run-off drainage network. The surface water run-off shall be discharged via a silt trap and a Class I interceptor fitted with a manual shut-off valve (Condition 3.16). New perimeter drains on the southern, eastern and northern side of Phase 3 will be connected to the drain surrounding the existing landfill cells. The drain on the eastern side of Phase 1 will be removed to allow for the extension (Phase 3) to tie in with Phase 1 (Condition 3.16).

The recommended PD requires that surface water monitoring is carried out at the three monitoring locations mentioned above (Schedule D). The emission limit value for suspended solids to be measured at the discharge point is set in Schedule C. The PD requires that within 6 months of the date of grant of licence, a biological assessment of the stream is carried out (Condition 8.11 and Schedule D).

## 4.3 Emissions to ground/groundwater:

The Inspector's Report that accompanied the existing waste licence 28-1 outlines the geology and hydrogeology of the facility. The bedrock aquifer is assigned a "high" to "extreme" vulnerability rating due to the free draining nature of the overburden and the thin layer of cover material in the central portion of the proposed extension.

Groundwater quality has been monitored at on-site boreholes and off-site domestic wells in accordance with the existing licence conditions. The applicant states that the down gradient boreholes on site (BH-1, BH-4, BH-5, BH-6 and BH-8) indicate the persistent presence of slight contamination based on data collected between 1999 to

1st quarter of 2003. The groundwater monitoring has indicated elevated levels of Ammonia, Chloride, Iron, TOC, Faecal Coliforms. The groundwater quality is also monitored in 9 private wells (1, 3, 4, 5, 6, 7, 8, 9, 11) used for domestic water supply located within 500 m of the landfill. Well 1 is the only well located down gradient of Phases 1 and 2 and according to the applicant the water quality in well 1 is generally good. Yet the applicant states that the water quality in the domestic wells has fluctuated from satisfactory to poor since 1999 but that the landfill is not responsible for this based on the established direction of the groundwater flow.

Groundwater monitoring requirements are established under Schedule D of the PD. The PD requires that the water quality is monitored in the existing wells BH1, BH4, BH5, BH6, BH7, BH8 and two new boreholes BH9 and BH10 as proposed by the applicant. The new borehole BH10 replaces the existing up-gradient monitoring well BH3 which will be lost due to development of Phase 3. The recommend PD requires the licensee to monitor the water quality in all private wells within 500 m of the facility (Condition 8.8).

The PD requires groundwater trigger levels to be monitored for in the following wells as proposed by the applicant: BH1 (downgradient of Phase 1), BH6 (down gradient of Phase 3), BH-7 (up-gradient to the existing and proposed phases of the landfill) (Schedule D and Condition 6.4). The applicant has supplied trigger levels that are 10% higher than the maximum level previously recorded at the facility. The recommended PD requires that the trigger levels be based on the measured mean value with standard deviations (Condition 6.4).

## 4.4. Leachate Removal

The existing leachate collection system installed in Phases 1 and 2 are described in the Inspector's Report that accompanied the PD for the existing waste licence (WL 28-1). In Phase 3 the leachate will be colleted in the leachate drainage blanket which will be part of the lining system and flow to a collection chamber located in each cell. The applicant proposes to pump leachate from the collection chambers of Phase 3 to the existing leachate manholes north of Phase 1 using submersible pumps and flexible hoses. In addition to the existing storage tank (approximately 108 $m^3$), a leachate storage lagoon (about 400 $m^3$) will be installed within twelve months of the date of grant of the licence (Condition 3.14).

Currently the leachate levels are measured in the leachate manholes north of the existing cells. The PD requires that leachate monitoring locations within the cells (Phases 1, 2 and 3) be agreed with the Agency (Condition 3.21 and Schedule D). The PD requires that the visual inspection and leachate levels be monitored in all leachate monitoring locations. The leachate quality shall be measured in the leachate storage tank/lagoon and two locations within the waste body (Schedule D). A telemetry system shall be installed for the recording of leachate levels in the lined cells, the leachate storage tank and the lagoon (Condition 3.20).

## 4.5 Noise:

The applicant states that the proposed extension will be 220 m away from the nearest residences to the east of the facility so in the context of the existing noise levels from the N6 the landfill operations will not have a significant impact. The proposed composting unit will be a source of noise from the shredding and turning of compost. According to the applicant the typical noise levels from the shredder are comparable to the compactor currently located at the civic waste facility. With the nearest noise sensitive receptor to the shredder being more than 200 m away and the unit only being used intermittently it is considered that its operation will have an negligible impact.

The PD requires that noise emission is measured at the four boundary locations and noise sensitive locations as proposed by the applicant (Schedule D). The PD requires that a proposal for monitoring of noise emission in relation to composting be submitted to the Agency (Condition 3.21). Schedule C sets the noise emission limit value to be measured at any noise sensitive locations.

### 4.6 Nuisance:

Potential nuisances at the facility are controlled by Condition 7 of the PD.

Condition 8.14 requires that daily odour inspections be carried out at the composting area to ensure odour emissions resulting from storage/handling of green waste be kept to a minimum.

**Dust**

The monitoring results submitted with the application for September 2003 shows slight exceedances of the dust deposition limit at two locations (D4: 251 mg/$m^2$/day and D5: 280 mg/$m^2$/day). This is attributed to site activities (D4), road traffic (D5) and dry weather conditions (both locations). The applicant states that the proposed extension of the landfill area will not result in any new source of dust generation whereas the proposed composting facility has the potential to generate dusts due to shredding and mixing of green waste and timber and the turning of compost. Condition 7.4 requires that addition of water shall be used to prevent dust emissions form the storage and processing of waste/compost at the green waste composting area. The recommended PD requires that a proposal for dust monitoring in relation to the composting facility be submitted to the Agency (Condition 3.21). An additional dust monitoring location (D7) is to be installed at the eastern boundary of the new extension as proposed by the applicant (Condition 3.21 and Schedule D). The dust monitoring requirements are set in Schedule D. The dust deposition level is set in Schedule C.

## 5. Visual Impact

The applicant states that the proposed development will change the existing landscape and will be visible to people travelling on the N6 and occupants of the residences to the east. The PD requires that the applicant submits a proposal for the installation of screening bunds as part of the proposed cell development works to screen the view of the nine residences on the eastern side of the facility and motorists on the N6 (Condition 5.6). Phase 3 has been designed to tie into the restoration profile for Phases 1 and 2. This will result in the restoration of the entire landfilled area to a dome, elongated to the east, which will blend into the existing landscape. The PD requires that a revised Restoration and Aftercare Plan be submitted to incorporate Phases 1,2 and 3 and as well as any further requirements detailed in the PD (Condition 4.1). The finished landform will be planted with a mixture of grasses and trees to form a pattern of field and hedgerows similar to the existing and surrounding lands. Condition 5.6 of the recommended PD requires that a landscaping plan be submitted to the Agency taking into consideration the effect of the planting programme proposed as part of the closure of Phases 1 and 2. The retention of the hedgerows will further mitigate the impact of the proposed development on the landscape (Condition 5.6).

## 6. Cultural Heritage, Habitats & Protected Species

The applicant details that the site is not covered by any designations for conservation. According to the applicant there are five designated conservation areas within a five

kilometres radius of the site. Four of the sites are raised bogs that are designated proposed Natural Heritage Areas (pNHA). The applicant states that only Crosswood Bog lies close enough (1 km) to the proposed landfill for there to be any potential for hydrological impacts resulting from the proposed development. The River Shannon Callows is designated as cSAC, SPA and pNHA and is located 3.5 km from the facility. The assessment of the impacts of groundwater and surface water conclude that the proposed development will not impact on surface water or groundwater and will not have any impact on the identified designated sites.

## 7. Waste Management, Air Quality and Water Quality Management Plans

The Waste Management Plan for the Midlands Region was adopted in September 2001. The plan found that the best policy in relation to landfill for the region was to concentrate resources in three sites in the short-medium term, one of these landfills being Ballydonagh Landfill. The Plan envisaged that a thermal treatment facility would be developed in the region by 2006 which would reduce the number of landfills in the region to one regional residual waste landfill. The applicant states that it is not expected that the thermal treatment facility will operational before 2010 due to delays in adopting the plan, site selection, planning, licensing etc. and in the interim there is a need for landfilling to continue at Ballydonagh Landfill as specified in the Waste Management Plan 2001.

## 8. Environmental Impact Statement

I have examined and assessed the EIS and am satisfied that it complies with the EIA and Waste Licensing Regulations.

## 9. Charges

The current charge for the existing licence (WL 28-2) is €15,294.00 set on 24 March 1999. The recommended PD requires that the applicant shall pay an annual contribution of €16,120.00 (Condition 12.1). The fee increase is due largely to an increase in the inspector daily fee.

## 10. Recommendation

I recommend that a licence be granted subject to the conditions set out in the attached PD and for the reasons as drafted.

In making the recommendation for a waste licence I have taken into account all information submitted as part of the application including the Environmental Impact Statement.

I am satisfied, on the basis of the information available, that the waste activity, or activities, licensed hereunder will comply with the requirements of Section 40(4) of the Waste Management Acts, 1996-2003.

Signed

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Pernille Hermansen
Inspector
Office of Licensing & Guidance

**Procedural Note**

In the event that no objections are received to the Proposed Decision on the application, a licence will be granted in accordance with Section 43(1) of the Waste Management Acts 1996-2003.

# Appendix 1

**Attached Documentation**

- Audit of 18/11/03
- Site Inspection of 24/06/04