



**OFFICE OF
LICENSING &
GUIDANCE**

**REPORT OF THE TECHNICAL COMMITTEE ON
OBJECTIONS TO LICENCE CONDITIONS**

TO:	Directors	
FROM:	Technical Committee	- LICENSING UNIT
DATE:	30 June 2006	
RE:	Objection to Proposed Decision/Determination for Meenaboll Landfill Site, Donegal County Council Waste: W0215-01	

Application Details	
Class(s) of activity:	3 rd Schedule: 1, 4, 5, 6, and 13 4 th Schedule: 2, 3, 4, and 13
Location of activity:	Meenaboll Landfill Site, Meenaboll, Letterkenny, Co. Donegal
Licence application received:	22/12/2004
PD issued:	14/12/2005
First party objection received:	19/01/2006
Third Party Objection received	17/01/2006 19/01/2006
Submissions on Objections received:	22/02/2006

Facility

This report relates to a waste licence application received from Donegal County Council (DCC) for a new landfill facility at a greenfield site located at Meenaboll, Letterkenny, County Donegal. The facility will consist of a landfill and a civic waste facility (CWF).

The proposed facility is 14.5 hectares in size of which the landfill will cover about 4.5 hectares. It will contain 5 phases comprising 8 cells with a lifetime span of 20 years. The overall proposed capacity of the landfill is 500,000m³.

The RD permits the acceptance of 25,500 tpa consisting of household waste (18,500 tpa) commercial waste (4,000 tpa) construction and demolition waste (500 tpa) and industrial non-hazardous solids (2,500 tpa).

The site is in an area of recently felled coniferous forest on Meenaboll Hill which forms part of the Glendowan mountains approximately 17km southwest of

Letterkenny. The proposed development site is adjacent to the watershed of two principal river catchments, the river Leannan and the River Finn / River Foyle systems. The proposed site is drained by the Sruhanpollandoo stream which discharges into the Cummirk River and is within the River Finn catchment. The river Finn is a designated salmonid watercourse under the Fresh water fish Directive (78/659/EEC). The area adjoins the watershed divide with the Owenbeg River, which is a headwater of the Leannan system confluencing with the Bullaba river, a known salmon spawning river above Gartan lake.

The boundaries of three designated nature conservation sites are in close proximity to the proposed landfill facility: Cloghernagore Bog and Glenveagh National Park pSAC (Site Code 2047) reaches to within 0.5km; the River Finn pSAC (Site Code: 2301) reaches to within 3km and Meentygranagh Bog pSAC (Site Code:173) to within 2.5km. These SACs are designated for the protection of mainly upland and montane habitats including blanket bog, lakes and rivers.

Consideration of the Objection

The Technical Committee, comprising of Bernie Murray (Chair) and Jonathan Derham has considered all of the issues raised in the Objections and this report details the Committee's comments and recommendations following the examination of the objections together with discussions with the inspector, Pernille Hermansen, who also provided comments on the points raised.

This report considers three valid third party objections and the first party objection, and a submission on the objections received from the applicant.

Objections received	Date received
Gerry Mulgrew, Meenaboll Environmental Protection Group,	17/01/2006
Derick Anderson, Foyle Calingford & Irish Lights Commission,	19/01/2006
Donal Doyle, RPS Consultants on behalf of Donegal County Council (applicant)	19/01/2006
Anja Murray, An Taisce	19/01/2006
Submission on Objections received	Date received
Angela McGinley, RPS Consultants on behalf of Donegal County Council (applicant)	22/02/2006

First Party Objection

A.1 Condition 3 infrastructure and Operation

The applicant objects to condition 3.6.1 which sets out the composition of the landfill lining system

- a. Condition 3.6.1(iii) refers to '*a 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of $1 \times 10^{-3} \text{m/m}^2/\text{s}$ of prewashed, uncrushed granular rounded stone (16 – 32) mm grain size incorporating leachate collection drains*'.

The applicant objects to this condition on the grounds that sourcing the rounded gravel in Donegal has proved difficult in previous landfill development contracts undertaken by DCC and the closest source for a material that complies with this condition is likely to be in an adjoining county which would result in long haul distances. In their original submission, the applicant proposed that the leachate drainage layer would consist of a 500mm deep blanket of 16/32 mm sized crushed rock aggregate and it was proposed that this material would be sourced from excavated rock on the site and crushed to the specified size. The applicant requested that this condition be amended in the final waste licence to reflect the applicants proposed use of a crushed leachate drainage layer. In March 2005 the applicant submitted a Leachate Drainage Stone report demonstrating the principle of the suitability of crushed stone in the leachate drainage layer to the OEE in Castlebar in relation to the landfill site at Ballynacarrick, Ballintra (Licence No 24-2) and comments from OEE are still awaited.

Technical Committee's Evaluation:

- a. The leachate drainage report demonstrates the suitability of a 16 – 32mm crushed non-calcareous stone sourced from Glenstone quarry in Killybegs utilising a cylinder test. The report demonstrates that the drainage stone sourced in Killybegs used in conjunction with a 1500g/m² geotextile was equivalent to a rounded gravel with a 1200g/m² geotextile. In each case a strain level of 0.14% was recorded. The UK Environment Agency have recommended that strain levels in HDPE should not exceed 0.25%

However the cylinder test detailed in the leachate drainage report was in respect of a stone quarried in Killybegs, over 30 miles from Meenaboll. Such stone may not be geotechnically representative or equivalent to in situ material obtained on site. In the case of Meenaboll landfill it was proposed by the applicant that the drainage stone be sourced on site. Condition 3.6 as it is currently written permits variation in standards provided it is agreed in writing with the OEE and subject to cylinder testing etc.

Recommendation: No change.

- b. Condition 3.6.1(iv) *'The side walls shall be designed and constructed to achieve an equivalent protection'*.

The applicant objects to this condition on the grounds that the site design allows for a longitudinal fall of 1:100 with a cross fall towards the leachate drainage pipework of 1:25 in accordance with the EPA Landfill design manual. These falls have been designed to suit the existing profile of the site. The applicant requests that this condition be amended to reflect the design set out in the original application.

Technical Committee's Evaluation:

The TC notes that Section 7.3.2 of the Landfill Site Design Manual as referred to by the applicant specifies that the base of cells should be sloped with a minimum fall of 1:50 towards the leachate collection sump [in any cell] and a 1% fall is specified for the main [inter-cell] collector pipe. This is considered BAT and these requirements must be included in the final design.

Recommendation: No change.

Third Party Objections

Three Third Party Objections are considered, for convenience they are labelled:

- B. Gerry Mulgrew, Meenaboll Environmental Protection Group (MEPG)
- C. Derick Anderson, Foyle Calingford & Irish Lights Commission,
- D. Anja Murray, An Taisce

For clarity any Submission on Objections made by the First Party in relation to the Third Party objections are dealt with in association with the objection to which they relate.

B. Gerry Mulgrew

Mr Gerry Mulgrew writes on behalf of Meenaboll Environmental Protection Group (MEPG) and objects to the granting of a licence on the following grounds

1. Contravention of the Habitats Directive 92/43/EEC Article 6

Mr Mulgrew states that on the advice of the Environmental Directorate of the European Commission, the location of a landfill at Meenaboll would be in contravention of Article 6 of the Habitats Directive 92/43/EEC on the grounds that a salmon spawning stream which is a tributary of the Cummirk and River Finn SAC runs directly through the proposed landfill and salmon spawn within a very short distance of the proposed landfill. Mr Mulgrew describes the culverting of a salmon spawning stream as an inappropriate action.

MEPG have sought legal advice and have addressed the two scenarios that exist at Meenaboll.

- a. The tributaries and spawning streams of the river Finn such as the Cummirk and the Sruhanpollandoo have been accidentally or deliberately omitted from the SAC and should be restored as part of the ECO area of the River Finn SAC such that they are afforded full protection of the Habitats Directive. He refers to the European Court of Justice (ECJ) ruling (Case C-67/99 dated 11/9/2001) whereby Ireland was condemned for failing to nominate a complete list of proposed SACs under the Habitats Directive and in particular spawning tributaries and streams had been omitted from within SAC boundaries.
- b. Even if tributaries and spawning streams of the River Finn such as the Cumrick and the Sruhanpollandoo are not included in the River Finn SAC, the Irish State is legally bound to protect and prevent any deterioration of these natural habitats. He quotes from the ECJ Rulings C-117/03 dated 13/01/2005 which concerns the protection regime applicable to areas that should be but have not yet been nominated as SACs. He also quotes from ECJ Ruling C-127/02 dated 07/09/2004 which concerns the legal protection regime applicable to projects situated outside of SACs but having effects within SACs.

Mr Mulgrew concludes the same protection must be afforded to the tributaries of the Owenbeg River which are also at risk from pollution from the proposed landfill and would affect the Gartan and Leannan SACs.

Submission on objection

The site is designed in accordance with best practice and all discharges to surface water will be in accordance with emission standards. A section of the Sruhanpollandoo stream will be culverted adjacent to the proposed landfill site and all other surface water arising from within the boundary of the site will be diverted to settlement lagoons and a constructed wetland prior to discharging to the Sruhanpollandoo stream.

The designation of Special Areas of Conservation (SAC) is undertaken by national Parks and Wildlife Service (formerly Duchas). Duchas was consulted during the EIA scoping process. The assessment for both flora and fauna and surface water in the EIS was undertaken based on the designations set by Duchas.

Technical Committees Evaluation

The surface water management network proposed for the Meenaboll facility provides for a high level of protection for the designated conservation areas. There will be no discharge of process effluents to local surface waters. Storm water and uncontaminated natural groundwater will be discharged to the settlement lagoons and constructed wetlands prior to discharge to the Sruhanpollandoo stream.

Recommendation: No change.

2. The EPA Inspectors report is biased

- a. MEPG states that under Item 6 of the Inspectors report, the inspector refers Cloghernagore Bog (SAC) and Glenveagh National Park (NHA) as the closest designated areas and refers to the River Finn SAC as being 2.25km from the proposed facility. MEPG states that the Habitats Directive regards the tributaries of the Rivers Finn and Cummirk as part of the River Finn SAC which means that the proposed site is on top of an SAC.

Submission on Objection

National Parks and Wildlife Service undertake the designation of Special Areas of Conservation (SAC).

Technical Committee's Evaluation

As stated under objection 1, the surface water management network proposed for the Meenaboll facility provides for a high level of protection for the designated conservation areas. There will be no discharge of process effluents to local surface waters. Storm water and uncontaminated natural groundwater will be discharged to the settlement lagoons and constructed wetlands prior to discharge to the Sruhanpollandoo stream.

Recommendation: No change.

- b. MEPG states that under Item 10.3 regarding the submission on Golden Eagles the inspector states that none of the sensitive birds breed in the area. MEPG states that the eagles have not reached breeding maturity yet. MEPG enclose a report dated November 2003 taken from The Golden Eagle Reintroduction Project website which states that one of the eagles was noted roosting in some mature larch trees on the edge of Meenaboll forest and according to MEPG others are quite often seen in the nearby Glendowan valley.

Submission on Objection

The applicant states that extensive bird surveys were undertaken in the area. During the course of the survey one eagle was seen soaring to the east of Binswilly in March 2003. Further registrations were not made in the course of the survey.

Technical Committee's Evaluation

The objection does not raise any new information that would significantly alter the findings of the inspector in her report. The Heritage Service were consulted in relation to this project and did not raise any concerns regarding sensitive bird species.

Recommendation: No change.

- c. MEPG states that under item 10.1 of the Inspector's report relating to Leachate Management, it is noted that it is intended to recirculate the leachate. MEPG state that while this may remove the urgency of tankering it off site, it increases the possibility of a leakage through the weld in the lined membrane system. MEPG continues that it is accepted by all, that the membrane system does not contain but simply minimises the leachate leakage and that this level of risk is not appropriate at such an elevated site on the side of a mountain with an SAC water source running through the site.

Submission on Objection

The applicant states the LandSim model reflects the conceptual model of the site and examines the environmental setting and layout/engineered design of the proposed landfill in context with the hydrogeological characteristics of the site. The volume of leakage through the landfill liner is considered in the LandSim model and is not predicted to be significant.

Technical Committee's Evaluation

The recirculation of leachate at suitably engineered sites is considered BAT. Recirculation accelerates the degradation process in waste and shortens the aftercare required including gas and leachate management. The lining system includes an underlying groundwater drainage layer which discharges to a monitoring point prior to discharge to the lagoons and constructed wetlands. Monitoring at this point will reveal any leakage in the lining system (in the event of multiple liner failure) and will trigger appropriate remedial action.

Recommendation: No change.

- d. MEPG states that the Agency inspector accepts the opinion contained in the EIS that Meenaboll is not in the Gartan Catchment Area. MEPG submitted copies of correspondence from Coillte and Teagasc to the applicant stating emphatically that Meenaboll is in the Gartan Catchment Area.

Submission on Objection

The applicant states that the surface water drainage of the proposed site naturally drains towards the Sruhanpollandoo, it does not drain to the Gartan Catchment. The correspondence from Teagasc and Coillte was received in 2002 in response to a scoping study and according to the applicant the site investigation area indicated at that time included a larger area which does not form part of the proposed facility.

Technical Committee's Evaluation

The proposed site is located between the Gartan Lough catchment and the River Finn catchment. A detailed site investigation has permitted clear delineation of the watershed, which shows drainage going to the Finn Catchment and this is illustrated in Figure 12.2 of the application. The

Sruhanpollandoo river flows through the site in a northwesterly direction and then flows southwest before joining the Cummirk river which forms part of the River Finn catchment. The Committee is satisfied that the engineering measures proposed ensure that this drainage reports to the Finn Catchment. Also as outlined in response to objections 1 and 2.a the surface water management network is such that it affords a high level of protection for the designated conservation areas. Finally it is stated in the Pentland Macdonald report commissioned by the Lough's Agency in 2005 that '*investigations confirm that the entire proposed landfill lies within the catchment of a tributary of the River Finn system*'

Recommendation: No change.

3. Rainfall figures for Meenaboll are incorrect

MEPG state that the rainfall figures quoted in the EIS refer to Malin Head which is situated over 40 miles from Meenaboll. MEPG in their original submission supplied Met Eireann rainfall figures for Kingarow which is located less than three miles from and directly below Meenaboll. According to MEPG the Kingarow figures show a 40% greater level of rainfall and given that the monitoring site is located at a lower elevation than Meenaboll it must be assumed that the figures for Meenaboll would be at least 10% higher again

MEPG states that the Inspector in her report referred to rainfall readings obtained from a monitoring site in Glenveagh, which is a significant distance away from Meenaboll, is lower and has no climatic similarity to Meenaboll. MEPG again provides the rainfall figures for Kingarow for the years 1998 to 2004 inclusive.

MEPG allude to the EIS Volume 1 Section 7.36 which states. 'It is acknowledged given the relatively high effective rainfall typical of the central areas of Donegal that the management of leachate will be of particular importance to the successful operation of the site'

Submission on Objection

The applicant in response to MEPG's objection states that the rain data in the EIS was taken from Met Eireann 1961 – 1990 Mean Average Rainfall for the site location. The containment of the site and the management of surface water has been designed in accordance with current best practice and is designed to allow for fluctuations in the annual rainfall at the site.

Technical Committees Evaluation

The committee has confirmed with Met Eireann that Kingarow is a legitimate rainfall station, and also that these figures provided for Kingarow by Met Eireann are not effective rainfall figures, i.e. they do not take account of evapotranspiration. The annual average rainfall figure for Kingarow is 1946.7mm based on Kingarow rainfall figures for the period 1998 to 2004. Ideally the figures would need to be modelled in order to determine effective

rainfall amounts. However in the absence of such modelling the average evapotranspiration losses are estimated to be in the region of 577mm (based on mean monthly potential evapotranspiration data provided by Met Eireann for the period 1968 – 1997 for Malin Head.) providing the region with an estimated average rainfall figure of 1369.7mm. The calculation in relation to leachate storage and collection infrastructure submitted as part of the application was based on an estimated average annual rainfall of 1600mm.

In addition, the applicant has designed the landfill with small cells to ensure minimisation of leachate generated. The leachate will discharge to storage tanks with a storage capacity of 1,500m³. The leachate management system set out under Condition 6 allows for a minimum freeboard of 0.7m to be maintained and clearly indicated in the tank(s) at all times. High-level liquid alarms shall be installed on the tank(s) to prevent overflow.

Finally, Condition 3.20.2 states that the licensee shall ensure that the final design of the constructed wetlands and surface water settlement lagoons includes the necessary flow, control, sizing and retention options to achieve the specified emission standards.

Recommendation: No change.

4. The site at Meenaboll was not included in the Donegal County Council 2000 Waste Management Plan

MEPG states that Meenaboll does not exist in the Donegal County Council 2000 Waste Management Plan

Submission on Objection

The Donegal Waste Management Plan which was the subject of widespread public consultation and adopted by the Council in 2000 identified the need for an additional 2 – 4 landfill facilities in Donegal to provide secure long term disposal for the county.

Technical Committees Evaluation

A strategic need for additional landfills was identified in Donegal County Council Waste Management Plan. The Agency's role in the assessment of proposed sites is principally associated with an assessment of the facilities proposed against BAT for a given location and plan and the appropriateness of technology in addressing the needs of the plan. However strategic selection of the site/location is a planning matter and therefore is a matter for An Bord Pleanála.

Recommendation: No change.

5. No site selection criteria were established in the Donegal County Council 2000 Waste management Plan

According to MEPG it is a legal requirement of any Waste Management Plan that it should include specific site selection criteria for all future landfills. Such criteria should clearly include the exclusion of any sites where water is a problem, rainfall is a problem and damage to the environment is possible, that protected areas such as SAC's and NHA's must not be compromised and the Proximity Principle must also form a part of the criteria to ensure that the Polluter Pays. According to MEPG Donegal County Council has ignored all of the aforementioned criteria and if these safeguards have not been applied to the Waste Management Plan then the validity of the plan must be in question.

Submission on objection

The site selection process was carried out using EPA Draft Site Selection Criteria and also reference to the County Development Plan. The site was identified as the preferred location for a landfill to provide landfill capacity for the areas of West and Central Donegal.

Technical Committees Evaluation

The site selection process entered into by the applicant is articulated in the EIS submitted by the applicant. Prior to selection of Meenaboll as the preferred location for a landfill, a site selection study was undertaken to identify suitable areas for landfill development within the county. This site selection process was based on Draft Site Selection Guidelines produced by the EPA. The guidelines set out a decision-making pathway, the first stage of which was the organization of a constraint study. A constraint study effectively sets out to establish areas where development of a landfill would be unsuitable. NHA/SAC designated areas, proximity to developments, water catchments and aquifers were amongst the issues considered during the course of the constraint study carried out. GIS analysis in conjunction with these constraint factors was employed to determine the most suitable locations for a landfill.

Recommendation: No change.

C. Derick Anderson, Foyle Carlingford & Irish Lights Commission

This objection comprises a cover letter and a technical report carried out by Pentland Macdonald Ltd. The report details a critique of the EIS, the proposed decision and a site inspection carried out by Pentland Macdonald Ltd in order to independently assess the possible impacts on the Finn fishery associated with the proposed landfill development at Meenaboll. The critique of the EIS revolves around three points

1. Rainfall data – The Pentland Macdonald report states that annual rainfall figures for a rain guage located within 3km of the site and at a similar or slightly lower elevation (Kingarow) range from 1634mm to 2145mm per annum for the period between 1998 and 2004 and that these figures are significantly higher than those reported in the EIS.

2. Concern for Groundwater/Surfacewater interactions. The groundwater drainage layer will transmit a significant proportion of groundwater from the vicinity of the base of the landfill into the surface water system. Leakage from the landfill will be released to the discharging groundwater in the drainage layer and a portion of the leaked leachate would therefore be transmitted to the surface water system. Although this would reduce risk of groundwater contamination it has not been considered in the risk assessment.
3. LandSim Modelling – the objectors have identified a number of concerns specifically regarding the input parameters to LandSim Modelling. In particular concern was expressed with regard to
 - the rainfall input values *'if the rainfall data used is confirmed (through site specific measurement) to be erroneously low, the volumes of leachate generation could be significantly underestimated'*.
 - The values assigned to the saturated zone. *'It is understood that the landfill will be excavated to below the water table and so the base will be entirely within the saturated zone. There is therefore no unsaturated zone at the Meenaboll landfill site.'*

The report concludes that the conditions attached to the Waste Licence allow for considerable environmental protection, providing they are adhered to throughout the life of the landfill. The technical assessment carried out at the site by Pentland Macdonald highlighted concerns that interactions between groundwater and surface water owing to contribution from base flow of groundwater to stream flow were not adequately assessed.

Submission on Objection by the Applicant

Section 3.1 Hydrology (Surface Water)

- The hydrogeological investigations indicate that groundwater does not contribute significantly to the streamflow of the Sruhanpollando.
- The bed of the Sruhanpollando is generally restricted to a depth of less than 2m below adjacent ground-level, which locally penetrates the shallow peat cover that generally mantels the site to depths of less than 1 m.
- The geological characteristics of the site indicate that the flow of the Sruhanpollando stream and tributary drainage ditches is principally maintained by incident rainfall and surface run-off, as well as seepage through the near surface peat horizons that provide storage.
- The groundwater monitoring data in the vicinity of the stream indicates that the peat deposits are saturated, and standing water levels lie close to ground surface. There is no evidence of a drawdown effect in the vicinity of the Sruhanpollando or any indication that it acts as a significant groundwater discharge boundary. Hydraulic contours indicate that the groundwater flow direction is principally influenced by the surface topography.
- The culverting of the Sruhanpollando will protect surface water quality and cut-off potential baseflow recharge in the vicinity of the landfill.
- The diversion of drainage ditches upgradient of the landfill will separate the surface water regime from the landfill area.

Section 3.2 Hydrogeology (Groundwater)

- The LandSim model reflects the conceptual model of the site.

- Hydraulic contours indicate that the groundwater flow direction is principally influenced by the surface topography. There is no evidence to indicate that the Sruhanpollandoo acts as a significant groundwater discharge boundary. The flow of the Sruhanpollandoo stream and tributary drainage ditches is principally maintained by incident rainfall and surface run-off, plus some seepage through the near surface peat horizons that provide storage.
- The peat cover and underlying boulder clays impede infiltration and downward migration of contaminants.
- The exploratory investigations indicate that groundwater flows are restricted to seepages to slight flows from non-extensive sand and gravel lenses and the fractured near surface rockhead horizon.
- The bedrock is classed a poor aquifer, and is generally regarded as impermeable.
- Groundwater movement is restricted to seepages to slight flows through the fractured near surface rockhead horizon (c2m thick) and to a slow circulation through discontinuities (joints) in the more competent lower horizons.
- The groundwater drainage blanket is designed to intercept any seepage that occurs below the landfill liner. The system is designed to facilitate monitoring of water quality and recovery for treatment if necessary.
- The volume of leakage through the landfill liner is considered in the LandSim model and is not predicted to be significant. The leakage was based on a fixed head of 1m above the base of the liner to simulate worst case operational conditions, irrespective of rainfall levels.

LandSim Modelling

- The LandSim model examines the environmental setting and layout/engineered design of the proposed landfill in context with the hydrogeological characteristics of the site
- The LandSim simulation assumed an infiltration rate of 1500mm/year with a standard deviation of 150mm. This figure was derived from the 30 year standard annual average rainfall isohyetal contour map for the Donegal area, which is representative of long-term weather patterns. The rainfall figures were used to simulate post-closure conditions, with infiltration through the capping system. Operational conditions were based on assumed fixed head conditions of 1 m, which was independent of rainfall.
- The simulation of the unsaturated zone was based on the thickness of groundwater drainage blanket at the base of the liner, which is considered appropriate. The simulation considered that no attenuation of contaminant parameters occurred within the unsaturated zone, which was based on unretarded conditions.
- LandSim model input parameters were based on a range of values that were related to the design and specification of the engineered containment and leachate management systems and related to EPA landfill design parameters. The selection of these parameters is fully justified in the LandSim model. On this basis the results of the LandSim model are considered to be valid, and an additional modeling exercise is considered unnecessary.
- The LandSim model indicates that the volume of leakage through the basal lining system based on the 95th percentile prediction is not significant, and impacts on groundwater at the compliance point fall within acceptable limits based on Interim Guideline Values set by EPNGSI. In addition to mitigate potential impact on surface water quality, groundwater that is recovered from

the drainage blanket will be tested and treated and filtered through the reed bed system before it is discharged to the Sruhanpollandoo, where a significant dilution would occur.

The LandSim analysis indicates that groundwater quality will not be impacted significantly by the development of the fully engineered containment landfill site at Meenaboll. The hydrogeological investigations indicate that the Sruhanpollandoo stream does not act as a significant groundwater discharge boundary and will therefore not be impacted by leakage from the base of the landfill.

Technical Committee Evaluation

1. Rainfall data has been dealt with under Objection B.3
2. In upper mountain reaches, the relationship between surface water and groundwater can be complex with waters moving between the two environments. The Technical Committee is satisfied that the EIS has adequately addressed the relationship between hydrogeological and hydrological setting. It is recognized that the drainage layer to be engineered under the landfill will locally and deliberately influence groundwater flow requiring this captured groundwater and/or any leachate that may arise from a possible leak to report to the onsite monitoring and treatment system (reedbeds) before being discharged to surface water. In the event of any contamination of this collected groundwater, monitoring undertaken in advance of discharge to reedbed system will ensure no unsuitable water is permitted to discharge to local surface water systems in advance of and at the end of the reedbed systems.
3. LandSim is a groundwater modeling package specifically designed to look at groundwater associated risks in relation to landfill developments. In relation to the submission on objection the operators make a valid point that the maximum head of 1m fixed head of leachate is used in calculations, which is worst-case scenario (however unlikely).

In relation to concerns over unsaturated zone there is some suggestion that the 10cm used in the model should in fact be zero. It is the TC's view that the variation in values used in the model and those suggested by the objector are not significant enough to substantially vary the results. In any event, as noted earlier the applicant proposes an artificial drainage layer under the landfill, which will remove any potential contaminant leakage from underneath the landfill thereby short circuiting any potential for contamination to enter directly into the in-situ groundwater beneath this drainage layer.

Recommendation: No change.

D. Anja Murray, An Taisce

Ms Anja Murray writes on behalf of An Taisce and objects to the Proposed Determination of a Waste Licence at Meenaboll on the grounds that:

- 1 Neither the EIS nor the Inspector's report has assessed the leachate containment performance of other lined landfills. The suitability of design and specification of the proposed Meenaboll landfill could give rise to problems of leachate seepage.
- 2 Neither the EIS nor the Inspector's report addresses the implications of insertion of a lined landfill and associated road access and infrastructure into a peatland area, which is subject to variable water table levels and movement. If it were to fail its leachate containment performance in such a bogland area, the effect would be significantly more difficult to contain or remediate than a landfill in an area with more stable ground conditions. In addition, the cutting of a major development area into this larger peatland area would have a knock-on drainage and displacement impact on the surrounding area and on drainage both running through, under and around the site.
- 3 Neither the EIS nor the Inspector's report has addressed the status of the site as a blanket bog priority habitat under the Habitats Directive. The drainage analysis of the site has established that the streams and drains in and around the site, drain towards the River Finn SAC/Natura 2000 site, the northern portion of the site adjoins the drainage catchment of the Owenbeg, Bullaba River which flows into Gartan Lough and Lough Akibbon SAC which flows into the Leannan River. This means that the site is at a drainage watershed between two river catchments, which creates the risk of damage to two drainage catchments in the event of a leachate breach or other pollution risk from the site. In addition the risks posed to a number of species and habitats were not adequately assessed namely
 - the Natura 2000 site status of the River Finn or the Cumrick or the salmon spawning status of the Cumrick or the Sruhanpollandoo streams adjacent to the proposed landfill,
 - the Freshwater Pearl Mussel habitat on the Owenbeg, Bullaba and Leannan Rivers,
 - the Arctic Charr in Lough Finn which are very sensitive to water quality and
 - Glenveagh National Park and Glenveagh SAC Complex - the only Irish location for the reintroduction of the Golden Eagle from Scotland.
- 4 Issues with regard to the Water Framework Directive (2000/60/EC). The proximity of the site to the aforementioned SACs and Natura 2000 sites and the presence of surface water channels and waterlogged peat on-site are directly linked to the waters of various protected streams, rivers and habitats, creates conditions for high possibility of contamination of these waters from leachate and runoff from the facility. Under the Water Framework Directive

(WFD) Member States are obliged to refrain from actions that would lower the ecological chemical or quantitative status of any water body.

- 5 Since the inspector's report on recommending a licence determination on Meenaboll, the EPA refused a licence determination to Ballylickey, Co. Waterford (ref. 187-1) on the grounds of unacceptable risk of environmental pollution owing to the location of the landfill in or adjacent to a candidate SAC, the River Lickey, a freshwater Pearl Mussel habitat.
- 6 The EPA is required to adhere to the precautionary principle. In this instance an insufficient buffer has been left between the proposed landfill site and the tributaries of the River Finn SAC to obviate the risk of water contamination owing to a breach in leachate. According to An Taisce the location of the Meenaboll site is not appropriate and the suitability of the location cannot be addressed or resolved by altering the design and specification. It is a requirement of the Directive that both the direct and indirect effects of the development be assessed, - it is An Taisce's assertion that this has not been done. An Taisce conclude that to grant a licence to this facility without holding an oral hearing (as requested by the Loughs Agency) would be denying the public the rights of public consultation required under the EU Directives.

The Agency decided on 07/02/2006 that an Oral Hearing of objection was not necessary.

Submission on objection

- 1 The landfill site will be developed on a containment basis to meet the requirements of the EU Landfill Directive (1999/31/EC) using a composite lining system. It is now accepted practice, particularly with the advent of containment sites, for landfills to be designed and operated in a series of discrete phases. The site at Meenaboll will be developed with 5 Phases. Phases 1 and 2 will be developed with one cell in each while Phases 3, 4 and 5 will consist of two cells which will be designed to allow for efficient management of the leachate. The site will be operated to standards set out by the EPA. The cells will be capped, after being filled to the final permitted levels, with a low permeability capping layer thereby minimising the generation of leachate in the existing waste body.
- 2 Peat stability issues were examined in a Peat Stability Report (June 2005) prepared by RPS, which was issued as an addendum to the EIS. This report was based on an assessment of the terrain characteristics, hydrology and ground conditions, indicated by a detailed exploratory investigation, which were compared with the conditions, reported at the site of the Derrybrien Windfarm peat slide.

No evidence of peat instability was noted during the site surveys and it was concluded that the overall risks of peat instability within the study area are low. To ensure that risks are maintained at a low level during construction of the landfill, a range of mitigating measures will be implemented. These will include management of surface run-off, restriction of plant movement to

properly designed haulage roads, strict control and management of earthworks and dewatering operations.

The operational landfill will be based below the peat and surrounded by properly engineered and lined containment bunds. In addition to this leachate levels and surface run-off will be controlled and managed by the implementation of appropriate drainage systems. Following this, it is considered that the stability of the peat bogs would gradually return to a status of equilibrium, which would largely reflect the prevailing pre-construction conditions and risks. Therefore the risks to the integrity of the lining system from potential peat instability are considered to be low.

- 3 The designation of Special Areas of Conservation (SAC) is undertaken by National Parks and Wildlife service (Duchas).
- 4 The site is designed in accordance with best practice and all discharges to surface water will be in accordance with emission standards hence the landfill site will not deteriorate the status of the surface water and therefore will be in compliance with the Water Framework Directive
- 5 As three above.
- 6 An improved surface water management system will be established in the vicinity of the site to minimize the impacts on water quality and quantity in the adjacent watercourses and downstream in the River Finn. Prior to any construction work commencing on site, settlement lagoons and constructed wetlands will be developed at the facility. This will assist with ensuring sediment transport off site is minimized. The Sruhanpolladoo stream, which runs adjacent to the landfill area, will be culverted through the site to prevent the possibility of sediment entering the stream. The ongoing monitoring of surface water quality at the landfill site will be continued ensuring the effective management of the drainage system.

Technical Committee Evaluation

- 1 The method of leachate containment proposed by the applicant is considered BAT and in compliance with the Landfill Directive(1999/31/EC).
- 2 In the opinion of the Technical Committee the objector has not introduced any technical points to show what part of the facility design relative to contours would be vulnerable. It is not expected that there will be any peat stability issues at the location of the landfill itself other than those that can be managed by normal engineering protocols.
- 3 Risks to habitats and species
 - As previously stated under objection 1 and 2.a, the surface water management network proposed for the Meenaboll facility provides for a high level of protection for the designated conservation areas. There will be no discharge of process effluents to local surface waters. Storm water and uncontaminated natural groundwater will be discharged to the settlement lagoons and constructed wetlands prior to discharge to the

Sruhanpollandoo stream. This will preclude any discharge of environmental significance to designated conservation sites.

- As previously outlined under objection 2.d the location of land and associated infrastructure does not extend over the Gartan Catchment boundary, consequently drainage from this site does not flow to the Owenbeg, Bullaba and Leannan Rivers which constitute part of the Gartan Catchment.
 - With regard to the risk a breach in leachate arising from the facility poses to Arctic Charr occurring within the Finn Catchment, the Technical Committee is satisfied that such a risk is low given the only waters to be discharged to local systems comprise uncontaminated natural rainwaters and groundwater
 - See Technical Committee response to objection B.2.b
- 4 Since the only waters permitted to be discharged from this site are uncontaminated rainwater and groundwater there will be no conflict with the Water Framework Directive.
 - 5 The Freshwater Pearl Mussel occurs within the Gartan Catchment and as previously outlined drainage from the Meenaboll site does not flow to the Gartan Catchment, rather the Meenaboll facility and related infrastructure is located within the Finn Catchment. Drainage to the Finn Catchment will comprise uncontaminated natural rainwater and groundwater. In the case of the Waterford site the pearl mussel occurred in the immediate vicinity of the site. This is not the case at this site.
 - 6 The Technical Committee is satisfied that the EIS and Licence application have assessed the direct and indirect effects in so far as is relevant to the activity proposed.

Recommendation: No change.

Overall Recommendation

It is recommended that the Board of the Agency grant a licence to the applicant

- (i) for the reasons outlined in the proposed determination and
- (ii) subject to the conditions and reasons for same in the Proposed Determination,
and
- (iii) subject to the amendments proposed in this report.

Signed

Bernie Murray

for and on behalf of the Technical Committee