

## **INSPECTORS REPORT**

**DRAFT PD REGISTER NUMBER 129-1**

**Applicant: Murphy Concrete (Manufacturing) Ltd.**

**Facility: Hollywood Great, Nags Head, The Naul, Co. Dublin**

**Inspector's Recommendation: The licence be granted subject to conditions.**

### **(1) Introduction**

The application is for the infill and restoration of a deep, active quarry pit (up to approximately 40 metres deep) which has been formed as a result of the extraction of shale and limestone since 1963 or so. The applicant proposed filling the quarry void with non-hazardous waste so that finished levels blend in with the surrounding landform. It is proposed to restore the site to agricultural use.

The facility is located in an elevated position on the eastern slope of a hill. The site is located approximately 3Km west of the M1 Balbriggan By-Pass and approximately 10 kilometres north of Dublin Airport. The facility is accessed by the minor road LP01090. The predominant adjoining land use is agricultural (both tillage and pasture). There are eight houses within 300m of the facility boundary. One house is within 50m of the facility boundary and is 150m from the edge of the proposed landfill area, while a further two houses are located within 100m of the facility boundary. There are telecommunication masts and a Fingal County Council water reservoir (concrete tank) located immediately west of the facility boundary.

The total facility area is approximately 13.6 hectares. The quarry footprint, which equates to the proposed landfill footprint, is approximately 7 hectares and the rest of the site is composed of soil stockpiles, agricultural land and facility services. Based on the applicant's estimated waste density of 1.5 tonnes per cubic metre (though a higher density is probable), it is estimated that the facility will receive approximately 3.45 million tonnes of waste. The applicant applied for the following waste activities:

#### Third Schedule: Waste Disposal Activities

*Class 1: Deposit on, in or under land (including landfill).*

*Class 13: Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.*

#### Fourth Schedule: Waste Recovery Activities

*Class 3: Recycling or reclamation of metals and metal compounds.*

*Class 4: Recycling or reclamation of other inorganic materials.*

*Class 13: Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.*

The recommended Proposed Decision, for the reasons set out in Section 10 of this report, permits the above disposal and recovery activities, subject to the conditions therein, so as to effect the restoration of the existing quarry.

A location map and a layout plan are attached in Appendix I.

<b>Quantity of waste (tpa)</b>	340,000 tpa
<b>Prescribed date for application</b>	1 <sup>st</sup> May 1997
<b>Application received</b>	12 <sup>th</sup> November 1999
<b>Environmental Impact Statement Required</b>	Yes. I have assessed the EIS and confirm that it complies with the requirements of Article 13 of the licensing regulations (S.I. 133 of 1997)
<b>Number of Submissions Received</b>	Three

#### SITE VISITS

Date	Observations	Personnel
9/12/1999	Site notice compliant	David Shannon
27/8/2002	Site visit	Eamonn Merriman

## (2) Facility Development

The applicant was requested [Article 16(1) notice dated 26/6/01] to clarify if the application relates to an inert landfill site (inert waste only) or non-hazardous waste landfill as reference was made to both classifications within the application and the landfill directive requires that the class of landfill be identified. The applicant's reply indicated that the facility would be predominantly inert with a small percentage of non-hazardous waste. However, the applicant did not address requirements necessary for a non-hazardous waste facility such as lining the site to the minimum standard recommended for non hazardous waste landfills and the provision of leachate collection. Therefore the recommended Proposed Decision restricts waste intake to inert waste only (C&D, dredging spoil and quarry excavation waste as per Condition 1.4). The landfill footprint is confined to the existing quarry pit area as this is the area assessed in the waste licence application (Condition 3.12.1).

The installation of infrastructure at the facility is controlled by Condition 3. The Recommended Proposed Decision requires lining of the landfill with low permeability clay ( $1 \times 10^{-7}$ ) which must be placed at least one metre above the water table (Condition 3.12). Due to the recommended inert nature of the waste, no leachate or landfill gas collection system is proposed. However leachate and landfill gas monitoring infrastructure is required (Condition 3.14).

The recommended PD requires the licensee to install waste inspection and quarantine areas, a weighbridge, a wheel wash, a facility office and a waste water treatment plant for sewage generated on-site. All landscaping of areas outside the landfill area shall be undertaken during the first planting season (Condition 5.6) though the applicant, for no apparent reason, proposed not completing the landscaping until final restoration.

Due to inert nature of the waste that is to be disposed of in the landfill, the final cap shall only consist of a one metre combined topsoil and subsoil restoration layer. The site will be restored for agricultural use such that finished ground levels reflect the former hillside contours, similar to levels prior to quarrying (Condition 4).

The applicant provided a copy of the planning permission (P/2616/88) which was granted on 28/7/1988 to infill the quarry. Condition 2 of this permission stated that infill should cease by July 2003 unless permission has been obtained for its continuance. The planning permission required reinstatement to agricultural use.

### **(3) Waste Types and Quantities**

The applicant stated that 15,000 tonnes of inert waste was disposed of at this quarry between 1993 and 1999. Quarrying activities are ongoing and thus the applicant estimates that the void space, which was calculated at 1.35 million cubic metres in November 1998, will increase to an estimated 2.25 million cubic metres. Therefore, according to the applicant and based on a waste density of 1.5 tonnes per cubic metre, the facility will receive approximately 3.45 million tonnes of waste. On the basis of an annual projected filling rate of 200,000 to 340,000 tonnes per annum, the applicant estimated that the landfill will be filled in approximately 10 to 17 years.

Schedule A of the recommended Proposed Decision provides for an annual maximum intake of 340,000 tpa of waste. Schedule A specifies acceptable waste types and waste acceptance criteria. The waste types to be accepted at the facility are inert C&D waste, inert dredging spoils and inert mineral extraction wastes arising from ongoing mineral extraction at the facility itself (Schedule A.2 *Acceptable Waste*). No liquid or sludge wastes or shredded C&D wastes are to be accepted at the facility (Condition 1.4).

No front-end recovery was proposed for the facility by the applicant other than mechanical separation of metals and screening and crushing of some wastes such as concrete for use in site development and restoration works. Condition 5.4.3 requires that waste is subject to pre-treatment where technically feasible. This control will apply to C&D waste to ensure that such waste is not contaminated with unacceptable wastes prior to acceptance at the landfill. This means that skips of mixed C&D waste, for example, will not be acceptable at the facility without the prior agreement of the Agency (Schedule A.2, Table A.2.1).

The limit values for pollutant content for inert waste landfills (Schedule A.4) reflect the parameters and limits for inert waste contained in the draft Commission Decision (Brussels 01.05.2002) establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Council Directive 1999/31/EC on the landfill of waste. These parameters and limit values reflect proposals put forward to the Technical Adaptation Committee for its agreement by the Landfill Modelling Subgroup which consisted of experts from the Member States.. The use of this draft means that there is a change in the limit values set and a reduction in the number of parameters to be tested when compared with requirements of similar waste licences that have been issued and which were based on Austrian Standards.

The applicant applied to accept waste from 8am to 6pm Monday to Friday and to operate the facility from 7am to 10pm Monday to Friday. However, one hour after waste acceptance ceases is normally sufficient to undertake completion works, especially given that daily cover will not be required at this facility. The hours of operation are therefore given as 7am to 7pm for those days (Condition 1.5.2). However, Condition 1.5, which specifies the waste acceptance and operating hours, provides for extended hours to cater for unforeseen circumstances subject to the prior agreement of the Agency.

#### **(4) Emissions to Air**

Given that it is recommended that the facility is restricted to inert waste only, no landfill gas or odour emissions are anticipated. However, fugitive dust emissions may arise. Condition 7.5 provides for the control of dust emissions. The dust deposition rate and PM<sub>10</sub> levels from both quarrying and waste activities will be monitored (Schedule D).

For the lifetime of the facility most operations will be below the surrounding ground level, and noise emissions should not have a significant impact on nearby noise sensitive locations. Schedule C sets emission limit value for three nearby private residences and Schedule D proscribes annual monitoring at these locations.

#### **(5) Emissions to Groundwater**

There is a complex sequence of lithologies in the vicinity of the quarry ranging from shales to limestones. The site is situated on a groundwater high and groundwater flow in the bedrock is away from the site in all directions. The applicant states that there are no potable extractions of groundwater within a 300m radius of the site

Groundwater quality is generally good though there are indications that some organic pollution is present as ammonium levels exceed the MAC limit of 0.3 mg/l (Quality of Water Intended for Human Consumption Regulations: S.I. No. 81 of 1988). Manganese levels also exceed MAC limits and this is considered to be due to geological conditions in the area.

In relation to the aquifer status of the site underlying the proposed landfill footprint, the northwestern corner is underlain by the Balrickard Formation which is classed as bedrock which is generally moderately productive (Lm) and the remainder of the landfill footprint is underlain by the Loughshinny Formation which is classed as bedrock which is moderately productive only in local zones (Ll). As the proposed landfill is to be situated on exposed bedrock, the aquifer vulnerability rating is extreme. However, the requirement to line the facility and restrict waste acceptance to inert waste provides for adequate protection of the groundwaters.

There will be no direct emissions to groundwater (Condition 6.4.1). However, there will be indirect emissions to groundwater. The applicant predicts that during the operational phase up to 41,000 m<sup>3</sup> of rainfall will precolate through the waste body to groundwater annually. Other indirect emissions to groundwater will include percolation wastewater from a sewage plant (nine operatives would generate up to 0.9 m<sup>3</sup>/day), approximately 1.0 m<sup>3</sup>/day of wheelwash outflow and an estimated 1,908 m<sup>3</sup>/annum of treated run-off from hardstanding areas (treated by a Class I separator: Condition 3.13.2). Upon final capping of the facility, indirect emissions to groundwater will decrease to an estimated 10,000 m<sup>3</sup> annually.

Condition 8 requires monitoring of leachate within the deposited waste and groundwater quality around the facility.

#### **(6) Emissions to Surface water**

A small stream passes immediately to the north of the facility. This stream is within the catchment of Rogerstown Estuary, a candidate Special Area of Conservation (000208) but as

the facility is limited to inert waste only, no impact on the cSAC is anticipated. Surface water drainage channels discharge to this stream. It is likely that groundwater beneath the site also discharges to this stream. Run-off from the facility hardstanding area will be directed into the landfill, and there will be no trade discharge to the stream. The only discharges envisaged are from field drains and eventually runoff from the capped landfill. However, soil stockpiles and bare soil pose a risk of suspended solids introduction to the small stream to the north of the facility via these field drains. Surface water management is controlled by Condition 3.16 and an Emission Limit Value for suspended solids has been set for any direct discharges to the stream (Schedule C.3). Condition 8 specifies monitoring of this stream.

#### **(7) Other Significant Environmental Impacts**

The quarry site is located within an Area of High Landscape Amenity (Fingal County Council Development Plan 1999-2004). The Recommended Proposed Decision provides for the infill of the deep quarry pit into the surrounding landform and its restoration to agricultural use (Condition 4).

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

The Waste Management Plan for the Dublin Region (1999-2003) was considered. Section 4.3 of the plan states that the only landfill accepting C&D waste in the Dublin region is Baleally. The plan estimated that possibly 50% of this waste, particularly waste generated in the south of the region, is deposited in private landfills outside the region. Section 13.5 of the plan envisaged the provision of two C&D recycling plants, one at Baleally Landfill by 1999/2000 and one in south Dublin by 2000/2001. Section 10.2.4 of the plan estimated that there would still be a significant amount of residual waste from C&D recycling which would require landfilling. Section 13.11 encourages private sector involvement in the provision of services.

There is no relevant Water Quality Management Plan for this catchment. Consideration was given to the draft Dublin Regional Air Quality Management Plan.

#### **(9) Submissions**

Three submissions were made in relation to this application.

1. The Countryside Protection Unit of Duchas: No objection to the granting of a waste licence.
2. The submission by Mr. Michael Reilly relates to the following:
  - Groundwater: *Concern is expressed that the groundwater will be contaminated in general and in particular the Fingal County Council potable groundwater source at the Bog of Ring. The risk is increased by the presence of a fault in the bedrock through the middle of the quarry.*  
Condition 1 restricts waste intake to inert waste only. Condition 8 requires monitoring of groundwater, surface water and leachate. The Bog of Ring is just over two kilometres from the proposed landfill. It is considered that conditions of the Recommended Proposed Decision provide adequate protection to the Bog of Ring.
  - Surface water: *Surface water will flow to Rogerstown Estuary which is already polluted through the operation of Baleally Landfill.*  
The Recommended Proposed Decision relates only to the application at hand. The recommended Proposed Decision only allows for the intake of inert waste. The only discharges envisaged are from field drains and eventually runoff from the capped

landfill. However, soil stockpiles and bare soil pose a risk of suspended solids introduction to the small stream to the north of the facility via these field drains. Therefore Schedule C imposes an Emission Limit Value of 35 mg/l for suspended solids. Condition 8 requires routine sampling of this stream as well as groundwater which probably contributes to the stream downstream of the facility.

- Types of Waste: *Non-hazardous sites require stringent monitoring of wastes received at the facility. Silt and dredgings should not be allowed.*

Condition 1 limits waste intake to inert waste only and Schedule A specifies waste acceptance criteria.

- Traffic: *Would like to see a guaranteed but unspecified maximum number of trucks per day in order to minimise disruption to the area.*

The number of trucks accessing the site was assessed as part of the Environmental Impact Statement which estimated an average of 19 vehicle movements in and out per hour during the recommended waste acceptance hours. Condition 3.5.3 forbids trucks accessing the facility from queuing on the public roads. Conditions 7.2 to 7.4 require that the road network in the vicinity of the facility is kept free of debris and mud arising from facility activities.

- Quarrying continues without planning permission: *Many of the planning permission conditions were not complied with.*

This is a planning matter. The Recommended Proposed Decision stipulates that other statutory requirements must be complied with (Condition 1.3).

- Staffing: *The qualifications of facility personnel are not specified in the application.*

Condition 2 provides for facility management and staff training.

- Leachate Management: *the applicant proposes no leachate collection or treatment. Leachate will pass through the proposed liner into groundwaters. The only control method proposed is to cap the landfill and thus reduce the amount of leachate produced.*

Condition 1 restricts waste intake to inert waste. The facility will have a base and sideliner of at least one metre of low permeability clay or equivalent. The liner shall be constructed above the water table (Condition 3.12) thus providing for attenuation of the leachate. Condition 4 requires a restoration layer only (ie. no impermeable cap) given the proposed inert nature of the waste to be accepted at the facility. Condition 6.4 provides for groundwater management and the setting of trigger levels. Condition 8 requires monitoring of leachate and groundwater quality.

- Facility will cause environmental pollution: *The filling of this quarry will result in*

- *Risk to water:*  
Discussed in groundwater and surface water sections above.
- *Risk to the atmosphere, land, soil, plants or animals (no details are provided):*  
Dust emissions are controlled by Conditions 6.1, 6.5, 7.1 and 7.5. There should be no other emissions to the atmosphere other than plant exhaust fumes. The Recommended Proposed Decision provides for the infill of a quarry void with inert material. No further habitat will be lost through the proposed restoration project. Condition 4 requires improved and additional hedgerows at the facility.
- *Nuisance through noise, odours and litter:*  
The Recommended Proposed Decision limits waste intake to inert waste only. Therefore odour is not anticipated to be an issue. Condition 8 requires noise monitoring and Schedule C sets noise emission limits at three close-by residences. Condition 7 provides for the control of litter and odour.
- *Adverse effects on the countryside or places of special interest (no details are provided):*

The Recommended Proposed Decision provides for the infill of the existing quarry pit to reflect the surrounding landform and its restoration to agricultural use (Condition 4). Condition 8 requires the archaeological investigation of any undisturbed areas prior to their development.

- *The application states that 15,000 tonnes of waste have been deposited in the quarry already. The site should be examined to ensure no toxic waste has been deposited.*

The waste licence application reported the deposition of 15,000 tonnes of inert waste between 1993 and 1999. Groundwater monitoring has not indicated the presence of dangerous substances.

3. The submission by of Ms. Philomena O'Hara relates to the following:

- *The existing and future residents of the area, an increase in the rodent population, the growing of vegetables and cereals (no further details):*

Only inert wastes will be deposited at the facility (Condition 1.4). Therefore no vermin problems are anticipated but Condition 7.1 nonetheless states that vermin shall not give rise to nuisance at the facility or in the immediate area of the facility.

Condition 7 provides for dust emission control, Schedule D.2 provides for PM<sub>10</sub> monitoring for which Condition 6.5 sets trigger levels for the facility boundaries. A positive impact on agricultural activity is anticipated as the quarry will be restored to agricultural use (Condition 4).

- *Tourism in the locality:*

Condition 4 provides for the infill and restoration of this existing deep quarry.

- *Heavy traffic and a deterioration of the already poor roads:*

This is a matter for the planning authorities.

- *The possibility of landfilling of hazardous materials at the facility:*

Condition 5.2 and Schedule A provide for waste acceptance and characterisation criteria.

### **(10) Recommendation**

It is recommended that a licence be granted for Classes 1 and 13 of the Third Schedule and Classes 3, 4 and 13 of the Fourth Schedule as applied for in the application. In coming to this recommendation, I consider that these activities would, subject to the conditions of the recommended Proposed Decision, comply with the requirements of Section 40(4) of the Waste Management Act 1996.

Signed: \_\_\_\_\_

Dated: \_\_\_\_\_

Eamonn Merriman, Inspector,  
Environmental Management and Planning.

**Appendix I**  
**Location Map and Layout Plan**

1. Nature Conservation Designations (within 10Km of site), Figure 3.4.1, dated 22/3/99. Extracted from the Environmental Impact Statement.
2. Land Ownership, Figure B.1.1, dated 20/5/99. Extracted from the application.