This Report has been cleared for submission to the Board by Programme Manager Patrick Nolan
Signed _____ **Date:** 17/10/08

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

OFFICE OF CLIMATE, LICENSING & RESOURCE USE

INSPECTORS REPORT ON A LICENCE APPLICATION

TO:	Directors	
FROM:	Aoife Loughnane	- Environmental Licensing Programme
DATE:	16th October 2008	
RE:	Application for a waste licence from Behans Land Restoration Limited, Blackhall, Punchestown, Naas, Co. Kildare. Licence Register: W0247-01	

Type of facility:	Soil Recovery Facility
Classes of Activity (**P** = principal activity)	4th Schedule: 4 (**P**) & 13
Quantity of waste managed per annum:	400,000 tonnes (maximum)
Classes of Waste:	Inert soils & stones for land restoration, inert construction & demolition waste for recycling.
Location of facility:	Blackhall, Punchestown, Naas, Co. Kildare
Licence application received:	17/06/2008
Third Party submissions:	None
EIS Required:	Yes
Article 14(2)(b)(ii) notice sent:	26/08/08
Article 14(2)(b)(ii) response received:	26/09/08
Site Inspection & site notice check:	11/08/08

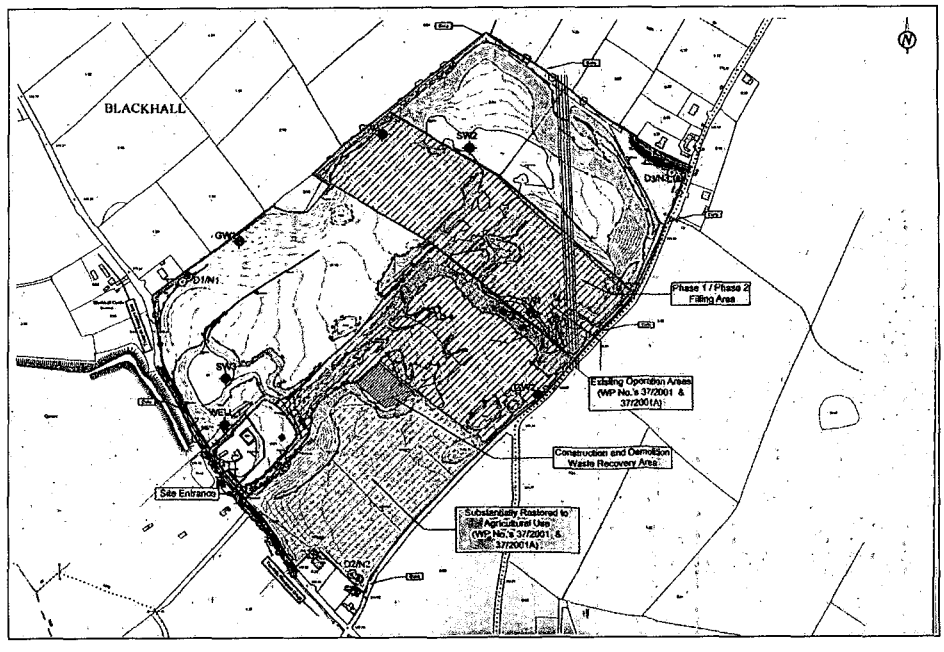
This waste licence application relates to the restoration of a former sand and gravel quarry using imported inert soils and stones, and recycling of inert construction and demolition waste, at Blackhall, Punchestown, Naas, Co. Kildare. The facility has operated under a series of waste permits issued by Kildare County Council since commencement of site restoration works in 2001. The ongoing works will eventually result in complete infilling of a large open void and restoration of the landscape to its original pre-extraction condition. The restored land will be used as agricultural grassland, which is in keeping with the character of the surrounding area.

1. Facility

The site comprises a worked-out quarry of approximately 38.1 hecatres, located in a largely agricultural area in the townland of Blackhall, approximately 5km south-east of Naas. There are a number of isolated residences in the area immediately surrounding the site, and a number of sand and gravel extraction operations. Cemex Ireland operate a quarry and concrete batching plant directly opposite the site. CPI operate a gravel quarry and washing facility approximately 1km south-east of the site. Punchestown Racecourse is located approximately 1km west of the site.

The nearest sensitive location is the residence of Mr. & Mrs. John & Norma Behan, the directors of Behans Land Restoration Limited, located adjacent to the site entrance on the south-western site boundary. There is one residence at the north-west corner of the site, three residences at the north-east corner and two residences immediately south of the site.

Figure 1: Site Layout



The southern quadrant of the site has been almost completely backfilled by the applicant to former ground level using inert waste materials under a number of Kildare County Council waste permits issued since 2001 (Refs. No. 37/2001, 37/2001A, 305/2007 & 328/2008). Under the Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007, as amended), which came into effect on 1st June 2008, large inert waste facilities accepting natural soils and sub-soils move from Local Authority to EPA control. The Agency, supported by DoEHLG, has taken the decision to class such natural soils/sub-soils infilling activities as waste recovery rather than disposal.

The principal class of activity is Class 4 of the Fourth Schedule to the Waste Management Acts 1996 to 2008:- *recycling or reclamation of inorganic materials*. The applicant has also sought authorisation for Class 13 of the Fourth Schedule:- *storage of waste pending recycling*, for the temporary storage of C&D waste pending recovery.

This site was the subject of a number of planning permissions granted for sand and gravel extraction, most recently to Readymix (Manufacturing) Ltd. in 1998 (Ref. 1467/97). This planning permission stipulates that the site should be restored following completion of extraction operations. I have consulted Kildare County Council in relation to this development under Section 54(4) of the Waste Management Acts 1996 to 2008. It is the view of the Planning Authority that no valid permission exists for the proposed development.

I have notified the applicant in this regard and have advised that a licence issued under the Waste Management Acts 1996 to 2008 does not negate a licensee's statutory obligations or requirements under any other enactments or regulations.

The facility is staffed by Mr. John Behan and two employees. The hours of waste acceptance and operation are 08.00 to 18.00 Monday to Friday inclusive (excluding Public Holidays) and 08.00 to 14.00 hours on Saturdays.

2. Operational Description

The amount of inert material to be imported and placed at the facility over a 15-year period is approximately 4 million tonnes (approximately 2.24 million m^3 at a placed density of 1.8 tonnes/m^3), principally comprising excess soils, stones and broken rock excavated on construction sites. A total of 600,000 tonnes of inert C&D waste will also be recycled at the facility over the same time period (≈45,000 tpa), using mobile crushing and screening equipment to generate secondary (recycled) aggregates. These aggregates will be re-used on-site for construction of internal haul roads and backfilling of existing groundwater ponds, or exported off-site for sale as hardcore in construction works. The quantity of recycled aggregates exported off-site is likely to be of the order of 30,000 tpa.

The wastes to be accepted at the facility are shown in Table 1. The applicant has provided expected annual average quantities of each waste type, with an estimated maximum intake of 400,000 tonnes per annum.

Table 1: Waste Types & Quantities

EWC Code	Description	Quantity	
		Average tonnes per annum	Maximum tonnes per annum
17 05 04	Soils and stones other than those mentioned in 17 05 03	275,000	344,000
17 01 01 17 01 02 17 01 07	Concrete, bricks, tiles and ceramics (other than those mentioned in 17 01 06)	45,000	56,000
	Total:	**320,000**	**400,000**

The applicant has submitted an outline Waste Acceptance and Handling Plan, which includes there levels of testing in accordance with Council Decision 2003/33/EC[1]:

- *Level 1: Basic Characterisation*

  All wastes to be accepted at the facility are included in Section 2.1.1 (List of wastes acceptable at landfills for inert waste without testing) of Council Decision 2003/33/EC. These wastes are considered acceptable for recovery at this facility without prior testing, provided they are imported from a single known source. Although there may be an exemption from testing, there is still a requirement to collect and record some basic characterisation information in advance to demonstrate that the waste is inert, e.g. source & origin of waste, description of the waste, waste type and EWC code, physical form, colour and odour. Prior to unloading of any waste consignment at the facility, the documentation accompanying the waste will be checked by a site operative. Any unacceptable waste consignments will be rejected and removed off-site.

- *Level 2: Compliance Testing*

[1] Council Decision 2003/33/EC of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.

The applicant proposes to undertake compliance testing on a representative sample of 1 in every 400 to 500 loads of waste. I recommend one sample in every 250 loads be taken. This will involve laboratory testing of soil samples, focusing on key contaminant indicators[1]. Test data will be used to confirm that the accepted soils are inert and comply with acceptance criteria.

- *Level 3: On-site Verification*
  Visual and odour inspections will be carried out by site operatives on each waste load to ensure that the load is consistent with the characterisation data provided and that there is no intermixed non-hazardous or hazardous waste.

Vehicles arriving at the site are required to stop at a security barrier in front of the site office before gaining access to the facility. Within the site, trucks travel to and from the active restoration and recycling areas over a network of paved and unpaved roads.

The applicant proposes to install the following infrastructure at the facility: weighbridge, new wheelwash unit which will collect and recycle the wash water instead of discharging to ground as it currently does, impermeable concrete surfaced waste quarantine and inspection area and associated waste water collection tank, and a hardstanding C&D recycling area constructed of recycled aggregates.

The applicant does not propose to install permanent phone, fax or email facilities at the site office. These facilities are available at the adjoining residence of Mr. John Behan. Nonetheless, the facility manager and deputies should be contactable by mobile phone at all reasonable times. Condition 3 of the Recommended Decision (RD) specifies the infrastructural requirements for the facility.

Restoration Plan

The applicant does not propose to install a basal or side slope mineral liner at the facility. Similarly, there is no proposal for leachate collection at the base or sides of the backfilled materials. Given that the proposed waste types comprise natural earth-forming materials which are non-leachate forming, the activity presents low risk to the soil and water environment. I am satisfied on this basis that there is no requirement for an engineered liner or leachate management system at this facility.

The site restoration plan proposes backfilling of the site in five phases with the eastern side to be filled in a north-easterly direction first (Phase 1), followed by the western side, with works progressing from north to south (Phases 2 & 3). Phase 4 comprises the infilling of the large open void to the rear of the site. Phase 5 will comprise the infilling of the eastern half of the site to its finished profile. In the course of the fifth and final phase of site restoration works, the C&D recycling facilities and all mobile plant and equipment will be removed off site and any temporary site accommodation, infrastructure and services will be progressively removed off-site or decommissioned.

Condition 6 of the RD requires the licensee to carry out an annual stability assessment of the temporary side slopes along the internal access road at the facility. In the longer term, there will be no risk of instability as the restored area will be graded to a relatively flat shallow slope.

Topsoil and subsoil will be imported to the site on a continual basis and stockpiled, pending re-use as restoration material. On completion of each phase, a cover layer of subsoil and topsoil will be placed and graded across the backfilled soil. This will then be seeded with grass in order to promote stability and minimise soil erosion and dust generation. The final landform will be profiled to give a domed shape in order to facilitate surface water run-off into the in-situ sand and gravels along the site boundary

[1] Principally arsenic, cadmium, lead, mercury, zinc, total organic carbon, BTEX, diesel range organics and mineral oil.

3. Use of Resources

Small scale energy requirements for the site office, lighting, heating and security cameras will be provided by a connection from overhead electrical power lines, or failing that, from a temporary generator. Condition 7 of the RD deals with energy efficiency at the facility.

The only materials consumed by the site restoration activities are diesel fuel and engine oils used to power plant and equipment. Condition 3 of the RD requires that fuel storage facilities be appropriately bunded and secured, and located on an impermeable hardstanding area. No re-fuelling of HGVs will take place on site. Re-fuelling and oil/lubricant changes for plant and equipment are required to take place in designated areas, protected as appropriate against spillage run-off.

4. Emissions

4.1 Air

The principal air quality impact of site restoration works is fugitive dust emissions which are likely to arise during HGV movement over unpaved surfaces, end-tipping of wastes, stockpiling, handling and compaction of soils, and crushing/screening of C&D waste. The applicant currently undertakes dust monitoring at 3 locations along the site boundary using Bergerhoff gauges. Results show that total dust deposition rates associated with ongoing activities are currently well below the TA Luft threshold limit of 350mg/m^2/day. Dust mitigation measures proposed by the applicant and specified in the RD include the spraying of site roads with water in dry weather, seeding restored areas as soon as practicable after soil placement, and locating temporary soil stockpiles away from sensitive receptors (Condition 6), and the use of a wheel wash for vehicles leaving the facility (Condition 3). These techniques are BAT for this type of activity. Schedule B.5 sets a dust deposition limit of 350mg/m^2/day for a 30 day composite sample at dust monitoring locations D1, D2 & D3.

No landfill gas management infrastructure is required on the basis of the inert nature of the wastes. There is negligible risk of odour nuisance as the facility will not be handling odour-forming waste.

4.2 Emissions to Sewer

There will be no emissions to sewer from the facility. A temporary portaloo is provided on the hardstanding area and is emptied as required by an approved waste contractor.

4.3 Emissions to Surface Waters

There are no emissions to surface waters from the facility. The applicant states that all surface water features on site are considered to be representative of groundwater. The nearest watercourse is the River Morell, a tributary of the Liffey, which runs parallel to the minor road to the south and west of the site. The river is not considered to be in continuity with groundwater, therefore any alterations to the recharge of the underlying aquifer will not have an effect on the flow in the river. The Agency's river biological monitoring programme recorded a Q4 rating (unpolluted) at Station 0060 (Br W of Tipper Ho) on the River Morell, located approximately 3.3km downstream of Behan's site. In the Water Framework Directive characterisation of rivers (2005), the Morell was classified as *1a (at risk of not achieving good status in 2015).*

4.4 Storm Water Run-off

Rain falling on the site either percolates diffusely into the subsurface or gathers in the existing surface water/groundwater ponds. With the exception of the sealed concrete slab at the waste inspection and quarantine area, the applicant does not intend to provide any site drainage infrastructure to collect or remove surface water run-off. Run-off from the concrete

slab will drain to a manhole at a low point in the north-west corner of the slab. If no materials are stored at the quarantine area and there is no risk of contamination of the run-off, it will be discharged via buried drains and/or open channels to existing groundwater ponds in low-lying areas. When suspect waste consignments are stored at the quarantine area, surface water run-off will be routed from the manhole to a sealed underground tank. Any wastewater collected in the stormwater tank will be emptied by a licensed waste collector and tankered off-site for disposal at an approved waste water treatment plant.

There are no records of historic flooding recorded in the vicinity of the site and the proposed development is not considered to be at risk of flooding the site itself or adjoining lands.

4.5 Emissions to ground/groundwater:

The sand & gravel deposits beneath the site are classified by the GSI as a locally important gravel aquifer 'Lg' with a high vulnerability rating. This deposit can store and transmit relatively large quantities of groundwater due to its permeable nature, and allows a high level of recharge, i.e., infiltration by rainwater. The aquifer supports local private water supplies in the area. A groundwater spring was observed at the base of the existing quarry floor and is associated with the sand and gravel aquifer. The groundwater table outcrops in low-lying areas of the site. All existing water features on the site are considered to be groundwater features.

The applicant undertook a site investigation in November 2007 to investigate the nature of the existing fill materials and the surrounding ground and groundwater conditions. The findings indicate that the general subsoil profile across the site comprises varying depths of inert fill materials (made ground) overlying in-situ sand and gravel deposits at or below the water table. Laboratory testing of soil samples taken from 18 trial pits across the site show some minor anomolies for sulphates and PAHs (polycyclic aromatic hydrocarbons) in a small number of samples taken in the restored area by comparison with the limits for inert waste set by Council Decision 2003/33/EC. These findings may be caused by the presence of small quantities of gypsum (plasterboard) and road planings in the imported fill, but are not considered to be significant in the overall context, as borne out by groundwater monitoring results to date.

Groundwater contours constructed using levels recorded in boreholes at the site suggest that groundwater flow direction is across the site towards the north-west. The applicant has installed one groundwater monitoring borehole upgradient of the facility at the south-eastern site boundary and two downgradient boreholes at the north-western site boundary. An existing well in the north-eastern section of the site was formerly monitored while extraction of sand and gravel was underway. Another well at the south-western site boundary supplies water to Behan's residence. The available groundwater test data indicates there is no disparity between groundwater quality up- and down-hydraulic gradient of the site. This demonstrates that ongoing site restoration activities to date have not had any adverse impact on groundwater quality.

Groundwater management is required in the RD as the proposal involves backfilling of the two existing groundwater ponds using recovered secondary aggregates. This fill material will largely be coarse granular (cobble and gravel) size, have a high porosity and permeability, holding groundwater in the intergranular pore space rather than displacing it. This will facilitate transmission of groundwater through and beneath the site. Condition 6 of the RD requires that sub-water table infilling works be undertaken using only clean, inert, highly permeable granular recycled aggregates and such infilling works are required to be supervised by an appropriately qualified person.

The groundwater spring in the north-eastern corner of the site is collected in a sump and directed into a concrete pipe which discharges into the northern groundwater pond. The applicant proposes to construct a new section of drainage trench comprising a 300mm

diameter concrete pipe, granular fill and geotextile separator. The extended drain will be directed to a soakaway (10m x 10m) in the northern section of the site, to discharge directly into in-situ sand and gravel deposits. The RD requires the engineering works associated with the spring discharge to be undertaken as proposed in the EIS, and to be supervised and signed-off by an appropriately qualified person, as specified engineering works under the licence.

The potential risks to groundwater quality from waste activities at the site are as follows:

- Accidental spillage of fuel or lubricants from construction plant;
- Increase in suspended solids and potential for contaminated run-off entering groundwater; and
- Rogue loads of contaminated material being deposited at the site.

The RD specifies requirements which minimise the risk of groundwater contamination from activities at this facility. Condition 3 deals with fuel storage & bunding requirements, wheel wash operation, and the collection and disposal of potentially contaminated drainage from the waste quarantine area. The applicant is required to implement robust waste acceptance and inspection procedures to ensure that only inert wastes are used in site restoration works. The measures specified in the RD include monitoring of groundwater up- and down-hydraulic gradient of the site to enable early detection of any deterioration in quality or change in groundwater elevations.

4.6 Wastes Generated:

No waste will be generated at the facility, with the exception of any non-inert C&D waste unintentionally imported to the site, e.g. metal, timber, plastic. These wastes will be segregated, stored in skips and removed off-site to authorised waste disposal or recovery facilities.

4.7 Noise:

Noise levels at the site are typical of a rural area. The nature of the restoration scheme is such that there will be no long-term impacts in relation to noise. During the restoration works, the principal sources of additional noise will be bulldozers and dump truck movements on the site. The applicant proposes 3 monitoring locations at the site boundary which represent the noise sensitive receptors, i.e. neighbouring residences. A noise impact assessment conducted for the site predicts elevated average ambient noise levels for receptor 1 at the western boundary of 66 dB(A) & receptor 3 at the north eastern boundary of 60 dB(A) due to their proximity to the activity. This is a worst-case scenario which assumes that plant and machinery will be running continuously. This will not occur in reality and restoration works at the site boundary adjoining these residences will be of limited duration, i.e. a period of weeks. The applicant has proposed noise mitigation measures in the EIS which include the use of temporary screening embankments where necessary.

The RD sets noise limits of 55/45 dB(A) during daytime/night-time, measured at the noise sensitive locations. Condition 6 requires an annual noise survey to be undertaken and requires that temporary screening embankments/barriers shall be used at the facility as necessary, in order to achieve the specified noise limits.

4.8 Nuisance:

As this is an inert waste facility, it is not expected to give rise to nuisance from odour, scavenging birds, vermin, windblown litter, or to present a fire/explosion risk. Condition 5 of the RD specifies controls in the event of potential nuisance arising from the waste activities.

5. Cultural Heritage, Habitats & Protected Species

The habitats present at the site include abandoned quarry faces, recolonising ground and artificial lakes and ponds. These habitats support little flora of interest and are of low conservation interest or value. Areas of improved agricultural grassland at the site have been heavily grazed, which has led to a low level of biodiversity in these areas also. Hedgerows, which form an almost continuous belt around the perimeter of the site, are of a high conservation value. The RD requires that the boundary hedgerows be retained and reinforced where necessary, and specifies a 10m buffer zone between existing hedgerows and infilling works (Condition 3), as proposed by the applicant. Removal of any shrubs/hedgerows shall only take place between September and March to avoid the bird nesting season.

Redbog SAC and NHA is located approximately 4km from the site. This is a wetland complex designated due to the presence of transition mire, an Annex I habitat under the Habitats Directive. Due to the separation distance and the nature of waste activities, it is considered that the continued operation of the facility would be highly unlikely to have any effect on Redbog SAC & NHA.

6. Waste Management Plan

The Kildare Waste Management Plan 2005-2010 states that approximately 1.9 million tonnes of C&D waste was processed in the county in 2003. The vast majority of this was soil or inert waste imported form the Greater Dublin Area. The plan identifies a need for at least ten strategically located permitted waste facilities for the acceptance of soils, each accepting in excess of 200,000 tonnes of inert soil per annum. At that time the plan was drafted in 2005, there were only four or five facilities of this nature in the county. The continuation of existing backfilling, restoration and recovery activities at this former sand and gravel quarry is in accordance with the stated objectives of the Kildare Waste Management Plan.

7. Environmental Impact Statement

I have examined and assessed the EIS and having regard to the statutory responsibilities of the EPA, I am satisfied that it complies with Article 94 and Schedule 6 of the Planning and Development Regulations 2001 (SI 600 of 2001) and EPA Licensing Regulations (SI 85 of 1994, as amended).

8. Best Available Techniques (BAT)

BAT for this activity is taken to be represented by the guidance given in the Agency's *Draft BAT Guidance Note for the Waste Sector: Landfill Activities (April 2003)*, insofar as it relates to the waste recovery activities at this facility.

I have examined and assessed the application documentation and I am satisfied that the site, technologies and techniques specified in the application and as confirmed, modified or specified in the attached Recommended Decision comply with the requirements and principles of BAT. I consider the technologies and techniques as described in the application, in this report, and in the RD, to be the most effective in achieving a high general level of protection of the environment having regard to the way the facility is located, designed, managed, maintained, operated and decommissioned.

9. Compliance with Directives/Regulations

Groundwater quality and quantity must be protected under the requirements of the Water Framework Directive (200/60/EC) and the Groundwater Directive (80/68/EC). The requirements of both Directives were taken into account in considering this application. The assessment of infilling groundwater ponds satisfies the Groundwater Directive criteria of ensuring that all technical precautions necessary are implemented to prevent discharge of listed substances to groundwater. The Landfill Directive and IPPC Directives do not apply to

this facility. The licence conditions have been specified in accordance with the principles of BAT.

10. Fit & Proper Person Assessment

The Fit & Proper Person assessment requires three areas of examination:

(i) *Technical ability*

Mr. John Behan is the facility manager and has been responsible for all aspects of site management and operation from the outset of the site restoration works in 2001. He is in attendance at the site on a permanent basis. As freehold owner of much of the site, he has a vested interest in ensuring the restoration works are executed in a timely manner and with minimal risk to the environment. The facility has operated under a number of permits issued by Kildare County Council. Considering the consistency in groundwater quality up and down gradient of the site, the soil test results for backfilled areas, and the absence of complaints from local residents, I am satisfied that the applicant has the technical ability to satisfactorily carry out the site restoration works in accordance with the RD.

(ii) *Legal Standing*

The applicant is free of any convictions under Environmental legislation.

(iii) *Financial Standing*

The applicant has submitted a copy of the company's financial statements for 2006. The site restoration works will be financed on an ongoing basis from revenue generated by intake of inert materials and the sale of recycled aggregates. It is not intended to finance any of the works from external funding sources. The applicant estimates the financial outlay required to complete restoration of the overall site following cessation of revenue generation activity will be of the order of €60,000 at present day value. The applicant proposes to establish a restoration fund by deducting an amount between €3,000 and €6,000 from trading profits generated each year to provide for the final restoration work at the facility. The applicant states that in the unlikely event that they are unable to discharge their legal obligations and meet the financial commitments and liabilities incurred in carrying on the waste activities at the facility, the necessary revenues can be raised through sale or lease of some of the lands already restored.

It is my view that the applicant can be deemed a Fit & Proper Person for the purpose of this licence.

11. Recommended Decision

I am satisfied that the conditions set out in the RD will adequately address all emissions from the facility and will ensure that the carrying on of the activities in accordance with the conditions will not cause environmental pollution.

12. Submissions

One submission was received in relation to this application but was subsequently withdrawn.

13. Charges

A charge of €7,269 is proposed in the RD, based on the enforcement effort predicted for the facility.

14. Recommendation

In preparing this report and the Recommended Decision, I have consulted with Agency technical and sectoral advisor Dr. Jonathan Derham. I have considered all the documentation

submitted in relation to this application and recommend that the Agency grant a licence subject to the conditions set out in the attached RD and for the reasons as drafted.

Signed

pp Aoife Loughnane

Office of Climate, Licensing & Resource Use

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 1996-2008.