INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER 168-1

Applicant: Greenstar Recycling Holdings Limited
Facility: Usk Residual Landfill, Usk, Kilcullen, Co. Kildare.
Inspector: Mr. E. Merriman
Inspector's Recommendation: The Recommended Proposed Decision as submitted to the Board be approved.

(1) Introduction:

This application by Greenstar Recycling Holdings Ltd. (formerly known as Celtic Waste Ltd.) proposes to develop an engineered landfill for the disposal of non-hazardous commercial, industrial and residual household waste at Usk, Co. Kildare (refer to Figure 10.1 in Appendix 1 for location). The site is currently owned and operated as a sand and gravel quarry by Kilsaran Concrete Ltd. The quarry will continue in operation for a period during the development of the landfill, but the applicant indicated that quarrying will cease prior to the commencement of waste acceptance and that they plan to purchase the site.

The overall site area is 19.3 hectares while the footprint of the proposed landfill is approximately 12.5 hectares. The site is located 3 Km to the northwest of Dunlavin and 7 Km south of Kilcullen. The proposed site entrance is on a county road (L-2035.1) some 1.2 Km from the N9 national primary road. There are 31 residential properties within 500m of the facility (refer to Figure B2b in Appendix 1). According to a submission, there are 67 people living within 250 metres of the facility boundary. The nearest residence lies within 20m of the north-eastern facility boundary adjacent to Phase III. There is a grouping of 11 houses and a shop approximately 50m northwest of the facility boundary and two houses approximately 80m east of the facility boundary. The facility is bounded by agricultural land (mostly pasture though some tillage occurs) and two county roads. The Dunlavin Marsh pNHA is separated from the proposed facility by one of these county road which runs along the apex of a sand/gravel embankment at the northern side of the quarry.

Quantity of waste applied for	200,000 tpa for 10 years (comprising of 180,000 tpa for disposal and 20,000 tpa of C&D waste for recovery as site development materials)
Environmental Impact Statement Require and Valid	I have assessed the EIS and am satisfied that it complies with the requirements of the EIS and Licensing Regulations.
Number of Valid Submissions Received	17

Site Visits

DATE	PURPOSE	PERSONNEL	OBSERVATIONS
1/2/02	Site Notice check and site inspection	E. Merriman	Site Notice compliant with Regulations. Quarry active.
10/6/02	Site inspection	E. Merriman, D. Howley	Quarry active.

(2) Facility Development

The infrastructure proposed by the applicant for the facility includes the following: six lined phases (refer to Figure 5.7 in Appendix 1) which are to be subdivided into cells of approximately 2,500m^2, leachate collection/recirculation/storage system, landfill gas collection, landfill gas flaring and subsequent utilisation, monitoring infrastructure, office, garage, waste quarantine and inspection areas, two weighbridges, hardstanding, surface water controls including two retention/ecology ponds, sewage treatment system, bunded fuel storage, landscaping and site security. The installation of infrastructure, primarily before the acceptance of waste, is controlled by Condition 3 of the recommended PD.

The internal buffer zone as proposed by the applicant was a minimum of 10.5m on the south-west flank and a minimum of 11.5 m on the northern flank. However, Condition 3 requires a minimum distance of 50m between the residence to the northeast and Phase III resulting in an increase to the buffer zone in that area of approximately 18m.

Lining System

The Recommended PD, in view of the hydrogeological conditions at the site (refer to Section 5 of this report), requires a layer of low permeability soil at least 3m deep overlain by a standard non-hazardous liner specification. This will ensure the Groundwater Protection Response for Landfills[1] matrix is complied with. The mineral component of the non-hazardous liner will be won on-site according to the applicant.

Leachate Management

A leachate collection system will be installed over the liner. This system, controlled by a SCADA system with manual over-ride, will pump collected leachate to a leachate storage tank (200 m^3 capacity to augment the storage potential of the lined cells). Potentially dirty run-off will also be directed from certain hardstanding areas to the leachate collection system. Leachate will be removed from the storage tank and transported to an off-site wastewater treatment plant which will have to be agreed by the Agency (Condition 11). The applicant has written to Kildare County Council seeking permission to tanker the leachate to one of their wastewater treatment plants. Condition 5 requires agreement from a wastewater treatment plant operator that it can and will accept leachate from the facility. Contingency arrangements must be in place in the event of process failure at the agreed wastewater treatment plant. A report on the provision of on-site treatment must also be provided. The applicant intends to establish a leachate recirculation system beneath the final cap but recirculation can only commence with the prior agreement of the Agency.

Landfill Gas Management

Each phase will vent gas passively while it is being filled with waste. A closed flare will be installed within 12 months of the commencement of waste deposition and prior to the completion of Phase I while a gas collection system will be retrofitted progressively within two months of each phase being filled. Flaring shall commence as soon as possible. Alternatively flaring with fuel assistance shall commence at any time stipulated by the Agency. While the applicant estimated that electricity generation using a gas engine may be feasible by the time Phase III is completed, this situation will be reviewed annually in

[1] Groundwater Protection Schemes: Department of the Environment and Local Government, Environmental Protection Agency and Geological Survey of Ireland, 1999.

the Annual Environmental Report. Condensate will be returned to the leachate collection system.

Capping

It is proposed to deposit waste to form a domed topography with a maximum elevation of 162mAOD after placement of the final cap. Filled cells shall be permanently capped within twelve months of the cells having been filled to the required level.

Restoration and Aftercare

It is proposed to restore the landfill to pasture land incorporating groups of trees, hedgerows and two small nature areas (which equate to the surface water retention ponds of the active period). It is likely that the significant sand martin breeding borrows, located in the eastern cliff face, will be retained. Facility restoration, subject to on-going aftercare requirements, shall be completed within 24 months of the completion of the last landfill phase (Phase VI).

(3) Waste Types and Quantities

The applicant proposed accepting 200,000 tonnes of non-putrescible, non-hazardous, non-liquid waste annually over a 10 year period based on a waste density of 0.8 tonnes/m^3. The proposed annual waste types/quantities for disposal were commercial (100,000 tonnes), industrial (40,000 tonnes solid and 20,000 tonnes sludge) and residual household/municipal waste (20,000 tonnes) together with 20,000 tonnes of C&D waste for site development/waste cover purposes. The applicant stated that no food, green or vegetable matter waste will be accepted. Schedule A allows for these quantities to be adjusted subject to a maximum intake for disposal of 180,000 tonnes per annum and the constraints listed below.

As proposed by the applicant, all waste other than certain inert wastes shall be treated prior to acceptance at the proposed residual landfill (Condition 1). The waste types listed by EWC codes provided by the applicant are acceptable subject to the restrictions listed below. Additional waste types may be agreed by the Agency subject to the waste acceptance criteria of Condition 1.

- The applicant applied to accept 20,000 tpa of industrial sludges with a solids content between 2% and 25% dry matter. In my opinion this is in conflict with the applicant's statement to only accept treated waste at the proposed residual landfill. Therefore Condition 1 of the Recommended PD only allows for the acceptance of sludge with a dry solids content greater than 25% which will ensure treatment to a consistency similar to other industrial solids.
- The applicant applied to accept construction materials containing asbestos (EWC code 170605*) for reuse in development/restoration purposes as opposed to disposal. This activity is refused in the Recommended PD (Schedule A) as this waste type is not suitable for development/restoration purposes and would require a dedicated disposal cell.
- The applicant applied to accept construction materials containing non-hazardous gypsum (EWC code 170802) for reuse in development/restoration. Council Decision 2003/33/EC Annex 2.2.3 states that non-hazardous gypsum can only be placed in cells without biodegradable waste. As the applicant did not propose how this separation would be achieved, this activity is refused in the Recommended PD (Schedule A).

- The applicant also applied to dispose of separately collected fractions of municipal waste (for example EWC 200102 separately collected glass). In order to promote waste diversion/recovery targets as set out in *Waste Management, Changing Our Ways: A Policy Statement by the Minister for the Environment and Local Government, September 1998,* Schedule A.2 forbids the disposal of these items without the prior agreement of the Agency. It is anticipated that these waste types would only be agreed for disposal in the event of contamination, market failure or emergency situations. Other residual household wastes will also require the prior agreement of the Agency.

The landfill will not be open to the general public as proposed by the applicant (Condition 5.2). The recommended PD provides for the hours of waste acceptance and operation applied for by the applicant subject to a start-up time of 8a.m. as opposed to 7a.m. (refer to Section 4 *Noise* of the report for an explanation).

(4) Emissions to Air

The highest baseline dust deposition rate measured at the site was 66 mg/m^2/day while the highest PM_{10} level recorded was 22.2 μ/m^3. The latter relatively high value is due to current quarrying activities according to the applicant. Other air quality parameters are assumed to approximate background rural levels. Therefore no air quality standards are currently breached in the vicinity of the existing quarry.

Landfill Gas: The results of atmospheric dispersion modelling for emissions from the proposed landfill gas flare indicate that all emissions (including CO, SOx, NOx and PM_{10}'s) will be at concentrations much lower that those recommended for the protection of human health in the EU directive on ambient air quality (1996/62/EC) and its daughter directives (1999/30/EC and 2000/69/EC). The results of atmospheric dispersion modelling for emissions from the proposed landfill gas combustion engine indicated that the PM_{10} standard of 50 $\mu g/m^3$ may be breached over a one-hour period. However, this prediction was based on a high baseline level and a higher ELV than allowed for by Schedule C (the model actually predicted a process contribution less than 20% of the air quality standard for PM_{10}). Therefore I am satisfied that the standard will not be breached. Condition 6 sets Emission Limit Values (ELV) for the landfill gas flare and engine as well as setting a trigger level for PM_{10}'s. Schedule D requires monitoring of emissions from the flare and the gas engine in addition to landfill gas monitoring at perimeter boreholes against trigger levels.

Odours: The current baseline odour is characteristic of a rural location. Due to the proximity of various residential properties, odour control is of critical importance.

There will be no food, green or vegetable matter waste accepted (Condition 1). Landfill gas extraction wells will be retro-fitted within two months of each phase being filled. Initially the extraction wells will passively vent but flaring will commence as soon as possible. If there are insufficient landfill gas levels to support flaring but odour problems nonetheless arise, the Agency can request that flaring with fuel assistance shall be employed. Condition 7 requires a report on odour control and odour monitoring arrangements.

Noise: Noise baseline data was based on current quarrying activities. Predicted landfill noise levels without mitigation predicted a small exceedance of the daytime noise ELV of 55dB(A) at the property to the northeast of Phase III and an increase over baseline levels greater than 10dB(A) at four other properties (essentially a doubling of

loudness). The distance to nearest operational phase used in the assessment for the property to the northeast was 50m, which is equivalent to the buffer zone proposed by the recommended PD. Condition 3 requires the installation of wooden acoustic noise barriers, as proposed by the applicant, designed to achieve broadband noise attenuation of at least 10 dB(A). This mitigation measures should ensure compliance with the daytime limit of 55dB(A). However, compliance with the stricter night (8p.m. to 8 a.m.) noise ELV of 45dB(A) was not assessed by the applicant. Even with the proposed mitigation measure discussed above, this limit would probably be breached at the same residence. Therefore Condition 1 restricts hours of operation and waste acceptance to a start-up of 8: a.m. (to coincide with the commencement of daytime noise ELV's) though the applicant applied for a 7:00 a.m start-up time. Condition 8 requires quarterly noise monitoring to assess compliance with ELV's at five noise sensitive receptors.

Dust: Due to the spatial orientation of certain properties to the prevailing winds and the proposed facility, properties from the north-west to north-east are at greatest risk of dust blow from the facility. Condition 3 requires a buffer zone around the landfill while Condition 5 requires tree/hedgerow planting. A 2.5m tall acoustic barrier is to be erected at certain locations. Stockpiles of soil retained for capping purposes will be seeded as proposed by the applicant to, inter alia, minimise dust blow (Condition 4). Condition 7 requires dampening down of site roads during dry weather. These measures will control dust blow from the facility. Schedule D requires quarterly monitoring of dust deposition rates at four locations on the facility boundaries and monitoring of PM_{10} levels once landfill gas flaring commences.

(5) Emissions to Groundwater

The applicant proposed that the landfill base would rest on bedrock (part of phases 3,4, 5 and 6), on clay (part of phases 1,2,3,4,5 and 6) and sand/gravel (part of phases 1, 2 and 6) (see Figure 10.3 of Appendix 1). The bedrock consists of calcareous greywacke siltstones and shales (Carrighill Formation) that dip in a north-westerly direction. A pumping test in borehole MW11, which is screened within the bedrock, indicated moderate permeability ($5x10^{-6}$ m/s), reflecting the weak and fractured nature of the shale and siltstone. Groundwater flows towards the northwest and the applicant considers that the sand/gravel deposits form a hydrological link to the Dunlavin Marsh pNHA, including Thady's Hole (a pond) and the Usk stream. Thus the sand/gravel aquifer is of significance to the pNHA. According to the applicant there are no individual abstraction wells downgradient of the proposed facility and there are no major abstraction points within 3Km.

Groundwater quality beneath the existing quarry is good, although concentrations of ammonium slightly exceeded the drinking water standard in some samples.

The applicant described the sand/gravel aquifer as a locally important one (Lg). The bedrock aquifer was assigned the status of Bedrock which is Generally Unproductive (Pu). As it is proposed that there will be less than three metres of unsaturated ground between the landfill liner and the water table, the vulnerability rating is extreme. Consequently the Groundwater Protection Responses for Landfill for the sand/gravel and bedrock aquifers are respectively $R3^{2}$ and $R2^{1}$. The applicant disputed the extreme vulnerability rating in additional information submitted to the Agency, though no supporting documentary evidence was provided, and the applicant failed to adequately address the Groundwater Protection Responses for Landfill requirements as required in

an Article 14(2)(b)(ii) notice. Therefore the Recommended Proposed Decision proposes a minimum of three metres of low permeability subsoil above the watertable and beneath a standard non-hazardous liner. This will ensure compliance with the Groundwater Protection Responses for Landfill.

The applicant proposed a 200m^3 underground storage tank for collected leachate. Condition 3 requires this tank to be installed above ground in a bund in order in view of the risk of leakage to groundwater. The applicant proposed certain groundwater trigger parameters/levels. Additional parameters have been set in Condition 6 and a lower trigger level for chloride is proposed in view of the hydrochemistry of the site. Because of the sensitivity of the pNHA to groundwater pollution and the orientation of the landfill to groundwater flow, Condition 3 requires five downgradient piezometers (one of which, MW3, is already in place) and two upgradient boreholes in order to monitor both aquifers beneath the site. All other investigative boreholes are located beneath the proposed landfill footprint and will consequently have to be backfilled.

(6) Emissions to Surface Waters

The Usk tributary passes within 300m of the northern boundary. This tributary flows into the Kilcullen River, approximately 1.5Km from the site, which in turn is a tributary of the River Liffey. It is considered that a mixture of groundwater, field drainage and marsh drainage provides the base flow in this tributary. Sand/gravel deposits are considered to provide a hydrological link between the proposed facility and the Usk tributary.

Water quality in the Usk tributary is generally good though biological monitoring has indicated moderate organic pollution (Q value of 3) and physiochemical analyses indicated low dissolved oxygen levels and elevated levels of nitrite. The latter two parameters indicate sub-standard water quality for salmonids. However, there is no indication that quarry activities have caused deterioration in surface water quality.

There are no surface water discharges from the quarry, with all run-off currently soaking to groundwater. With respect to the proposed landfill, it is proposed to collect all clean surface water run-off during the developmental, operational and restoration phases via collection ditches which will discharge via settlement chambers to two partially lined ponds. The ponds will allow controlled soakaway to groundwater. They will also provide areas of aquatic habitat in proposed ecology zones on the facility. The drains feeding these ponds must be lined to ensure water levels are maintained in the pond in order to maximise the ecological benefit of the ponds. Potentially contaminated run-off from areas such as the waste inspection/quarantine area and the wheelwash will be directed to the leachate collection system.

Condition 8 requires routine water quality monitoring of Thady's Hole subject to the owner's agreement, and water quality/biological monitoring of the Usk tributary. Condition 3 requires continuous monitoring at the inlet to the ponds.

(7) Other Significant Environmental Impacts of the Development

Nuisances/Public Health: Condition 7 provides for the control of vermin, birds and flies and Condition 8 requires at least weekly monitoring for these nuisances. As Condition 1 forbids the intake of food-bearing wastes no special arrangements for vermin, fly or bird

control are required at start-up. However Condition 11.5 requires a vermin and fly control programme to be established in the event that active control is required.

Proximity to Private Residences: All internal buffer zones proposed by the applicant other than the northeastern boundary buffer zone are considered adequate. The latter buffer zone could be as narrow as 11.5m on the northeastern flank which lies immediately adjacent to the Dunlavin road. For example, this would result in a total distance of 31.5m between the landfill footprint and the nearest residential house to the northeast of the facility at Phase III. I consider this buffer zone too narrow for the following reasons:

- In the DOELG publication "Protection of New Buildings and Occupants from Landfill Gas" (a Technical Guidance to the Building Regulations, S.I. No. 497 of 1997), the set back recommended to provide protection from landfill gas migration at a controlled landfill is 50m for housing and 10m for gardens. As the intervening terrain between the proposed landfill and the property to the northeast consists of permeable sand and gravel deposits, this set back is required.
- The distance to nearest operational phase used in the noise assessment for the residence to the northeast was 50m, which is equivalent to the buffer zone proposed by the Recommended Proposed Decision. The noise mitigation measures proposed by the applicant are based on that data.
- Although the presence of an intervening hedge in the garden of the northwestern property restricts views into the proposed facility, there will be a significant visual impact on this residence. The additional buffer zone will be planted with trees in order to reduce the visual impact on this residence.
- The northwestern property lies in the path of prevailing winds from the proposed landfill. Therefore a wider buffer zone, together with enhanced screening planting, will provide additional amelioration of dust and any incidental litter blow.

Thus Condition 3 requires a minimum buffer zone of 50m between the landfill footprint and the northeastern property, and Condition 5 requires the additional area to be landscaped.

Visual Impact: During the operational phases of the proposed landfill, there will be a significant visual impact on three residences located adjacent to the north-eastern corner of the facility (coinciding with adjacent phases of the landfill development) as well as users of the Dunlavin county road. Existing hedgerows, facility start-up planting and the phasing sequence of the landfill will control the visual impact during operational phases. Upon restoration, the existing deep quarry, which can be considered a scar on the landscape, will be restored to agricultural use with hedgerows and clusters of tree. However, the proposed restoration profile will introduce a higher horizon for these properties. Condition 5 requires the retention and improvement of the existing facility boundary hedgerow/tree belt as well as additional tree planting as proposed by the applicant. However, Condition 5 also requires a minimum planting strip width of 4m (as oppose to the 2.5m strip proposed by the applicant which I consider to be too narrow to achieve the stated aims) along the Dunlavin Road boundary in order to provide adequate visual screening during operational phases to users of the county road.

Natural Heritage Area: The Usk valley includes the Usk Marshes, a set of valley marshes that form part of a proposed National Heritage Area (pNHA 1772) known collectively as the Dunlavin Marshes. There will be no direct emissions from the proposed facility to the Dunlavin Marshes. However, groundwater flow from beneath the proposed facility is likely to influence the north-western extremity of the marshes including Thadys' Hole (a groundwater-fed pond which is part of the marsh complex, is located approximately 60m

north of the facility boundary). Protection of groundwater quality in addition to surface water quality in Thadys' Hole and the Usk tributary will afford protection of the marshes. Condition 8 requires routine monitoring of these waterbodies. Condition 8 also requires regular floral and faunal surveys of the pNHA and the landfill perimeter as proposed by the applicant.

Ecology: Smooth Newts (Triturus vulgaris) have colonised a quarry pool on site. The newts, which are protected species under the Wildlife Acts, must be removed under licence from the Heritage and Planning Division of the Department of the Environment, Heritage and Local Government (formerly Duchas) from this pool prior to its destruction during development, either to the Dunlavin Marsh or potentially the site surface water retention ponds if adequately established.

There is a sizeable nesting colony (an estimated 35 to 40 breeding pairs) of sand martins (Riparia riparia) located in a sand/gravel cliff face at the eastern side of the present quarry. The sand martin is amber listed by Birdwatch Ireland as a species of medium conservation interest meriting protection. It is feasible to retain part of the cliff face to a depth of approximately five metres with a commensurate small reduction in void space in order to preserve this significant breeding colony. Condition 8 requires a report with recommendations on the newt and sand martin populations currently residing in the quarry following consultation with the Heritage and Planning Division of the Department of the Environment, Heritage and Local Government. Conditions 4.2 and 5.7.1 provide scope to adopt measures to retain this colony at the site.

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

- Water Quality Management Plan for the Liffey Catchment. This plan set salmonid standards for most parameters in the Usk tributary in order to protect salmonid fish and the potable abstraction downstream at Leixlip.
- Kildare Waste Management Plan (2000-2005) was adopted by Kildare County Council on the 17th July 2000.The plan refers to the role of private operators in the provision of waste disposal facilities in County Kildare though there is no specific mention of the Usk facility.

(9) Submissions/Complaints

17 valid submissions were received in relation to this application. I have had regard to the submissions in making my recommendation to the Board. Below is a summary of the main concerns raised in the submissions and my response to them.

1. **Groundwater**

   The proposed landfill will pose a pollution threat to unspecified local wells and to the hydrologically-linked Dunlavin Marshes (pNHA 1772). There should be adequate controls to prevent contaminated water, leachate and run-off from becoming a source of pollution to groundwater. As in any engineered containment system there will be some leakage as described in the Environmental Impact Statement, and there is a possibility that such leakage may flow towards the pNHA. Wells to the southeast of the proposed landfill should be monitored. Any disturbance to the drainage regime or the water table would cause serious damage to the integrity of the pNHA.

   Inspector's Response: The measures contained in the Recommended Proposed Decision provide for the protection of groundwater (refer to Section 5 *Emissions*

to Groundwater and Section 6 *Emissions to Surface Waters* of this report for further details). Groundwater flows in a northwest direction. Thus wells located to the southeast are upgradient of the proposed facility. Nonetheless Condition 8 requires monitoring of any private wells within 250m of the facility in addition to upgradient/downgradient monitoring of groundwater. The landfill liner must be built above the water table. Collected clean surface water will be directed to two retention ponds which will provide for controlled release to groundwaters.

2. **Dust**

   Dust and mud should be controlled as provided for in the Agency's Landfill Operational Practices manual.

   Inspector's Response: The Recommended Proposed Decision provides for dust and mud control.

3. **Noise**

   The Environmental Impact Statement indicated that site activities had the potential to impact on surrounding noise sensitive locations. The operator should liaise with those residents indicated as at risk in order to ascertain if there any measures which could be taken at their dwellings/boundaries to minimise the potential impact. Low sound emitting plant should be used, the hours of operation must be adhered to and monitoring should be undertaken at noise sensitive locations.

   Inspector's Response: Refer to Section 4 *Noise* of this report.

4. **Surface Water**

   - *There should be adequate controls to prevent contaminated water, leachate and run-off from becoming a source of pollution to surface waters.*
   - *There should be frequent monitoring of Thady's Hole and the Usk tributary. Monitoring results should be submitted to The Heritage and Planning Division of the Department of the Environment, Heritage and Local Government. Surface water or groundwater related incidents should be notified to Duchas immediately.*

   Inspector's Response: Protection of groundwater by means of the landfill liner and leachate collection system provides indirectly for the protection of the adjacent watercourses. Schedule D.5 provides for routine monitoring of surface and groundwaters. It is not considered necessary for monitoring results to be sent to the Department of the Environment, Heritage and Local Government as such information would be available for viewing at the facility or at the Agency. However the Department will be notified in the event of any incidents which relate to surface or groundwaters (Condition 11).

5. **Proximity to houses**

   Due to the proximity of houses and a Steiner School located within two kilometres of the facility, the application should be refused. The proposed landfill will result in the violation of Agency guidelines by being within 250 metres of dwellings.

   Inspector's Response: Refer to Section 7 Proximity to Private Residences of this report. The draft Agency Manual on Site Selection (2nd draft:1996) states that "in general a minimum distance of 250 metres should be maintained between the area to be landfilled and any occupied dwelling at new landfills". However the Building Regulations (S.I. No. 497 of 1997) do not contain any requirements in regard to construction near landfills. In subpart C3 of the Building Regulations (S.I. No. 497 of 1997) it states "Reasonable precautions shall be taken to avoid danger to health

and safety caused by substances (including contaminants) found on or in the ground to be covered by a building." In the Technical Guidance to these Regulations "Protection of new buildings and occupants from Landfill gas" published by the DOELG, a set back distance of 250m is specified for new buildings. However, this appears to me to be a guideline for existing landfills where there is concern about existing landfill gas pathways. When the site assessment procedure outlined in Figure 3 of the Technical Guidance is completed for a controlled landfill site it would appear that 50m is the recommended set back for housing and 10m for gardens. I understand this position will be reflected in the Agency guidelines when they are published. The 50m distance between the proposed landfill footprint and the nearest residence as allowed for in Condition 3 of the RPD meets this requirement.

6. **Health Issues**
   The application should be refused as it will result in adverse health effects to local inhabitants. Another submission states that there are 67 people living within 250 metres and 160 people within 500 metres of the facility boundary. Recent unspecified national and international research has shown that people living close to a landfill have a much higher than average risk of developing serious health defects. Another submission refers to the British Medical Journal article "Risk of Adverse Birth Outcomes in Populations Living near Landfill Sites" by Elliot et al. (2001).
   Inspector's Response: No specific details were provided in some of these submissions. As no food, green or vegetable matter waste will be accepted at the facility, vector problems due to vermin/flies and birds are not anticipated. Nonetheless, Condition 11 requires a vermin/fly control programme so that effective measures are in place if monitoring of the populations, as required by Condition 8, indicates that a problem is arising. The facility will operate to Best Available Technology. Dust, landfill gas and leachate will be controlled by the Recommended PD. The study quoted in the submission found no causal mechanisms to explain any health risks and postulated that there may be alternative explanations. "The Health Effects of Controlled Landfill Sites – An Overview" L. Heasman (Proceedings Sardinia 1999, Seventh International Waste Management and Landfill Symposium) concluded that the extensive evidence available does not support any casual link between health effects studied and residences near landfill sites.
7. **Traffic**
   The application should be refused as it will result in an increase in traffic. Current traffic to the existing quarry has severely damaged adjacent county roads. Landfill associated traffic on the Dunlavin Road, which lies between the pNHA and the proposed landfill site, will result in habitat destruction.
   Inspector's Response: The issue of current traffic levels and traffic accessing the proposed facility is discussed in the Environmental Impact Statement. Traffic outside the facility is a matter for the planning authority.
8. **Devaluation of Property**
   The application should be refused as it will result in a devaluation of properties.
   Inspector's Response: This is a matter for the planning authority. The Recommended Proposed Decision will provide for the restoration of the existing deep quarry pit, which can be considered a scar on the landscape, over a period of approximately 12 years.

9. **Air Pollution**
   Air pollution will result from the operation of the landfill.
   Inspector's Response: Refer to Section 4 of this report.
10. **Loss of Amenity**
    The submitter's daughter will never be able to play or walk outside her home again (due to the landfill).
    Inspector's Response: Condition 1 provides for the control of waste intake, Condition 6 provides for the control of emissions and Condition 7 provides for the control of nuisances. Condition 3 provides for a buffer zone around the landfill while Condition 5 provides for extensive screening landscaping. Traffic outside the facility is a matter for the planning authority.
11. **Visual Impact**
    There is nothing aesthetically pleasing about a dump.
    Inspector's Response: Condition 4 provides for the restoration of the existing deep quarry pit which can be viewed as a scar on the landscape. Condition 3 provides for a buffer zone around the landfill while Condition 5 provides for extensive screening landscaping.
12. **Unauthorised Landfilling at the Site**
    Tthe site should be independently investigated for the presence of unauthorised waste previously deposited at the facility.
    Inspector's Response: This is an active sand/gravel quarry. I undertook site visits and noted no waste deposited at the facility. Preparatory work for the installation of the liner will uncover any such material. Groundwater quality beneath the site is generally good and is reasonably indicative that waste disposal has not occurred.
13. **Planning Permission Status**
    If local people realised when planning permission was being processed that re-instatement of the quarry to agricultural use, as conditioned in the planning permission, involved the operation of a landfill, then they would have appealed the decision. The validity of the planning permission is also queried.
    Inspector's Response: The proposed site is currently operated as a sand and gravel quarry by Kilsaran Concrete Ltd. In response to a request for further information, the applicant states that planning permission for the current quarrying activities expired on 2/3/1993. However, they argue that as quarrying activities have continued for considerably more than five years since March 1993, when the quarry was scheduled to close, continued quarrying is benefited by Section 19 of the Local Government (Planning and Development) Act, 1992. The grant of planning permissions and the enforcement of planning conditions are the responsibility of the planning authority. Condition 1.3 states that nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations. The applicant applied on the 10/12/2001 to Kildare County Council for planning permission for the proposed development (application no. 01/2176). At the time of writing of this report, a planning decision has not been issued by Kildare County Council.

14. **Defective Environmental Impact Statement**
    The Environmental Impact Statement is defective in that
    - *An Taisce states that the European Commission has ruled that the separation under Irish planning and environmental law administration of applications*

involving Environmental Impact Statements into their determination by two separate authorities, namely local authorities/An Bord Pleanala and the EPA, is in breach of Article 226 of the Treaty establishing the European Community. The failure of Ireland to fulfil obligations under Council Directive 85/337/EEC on the assessment of the effect of certain public and private projects on the environment and Council Directive 97/11/EC amending Direcive 85/337/EEC

- *It fails to address alternatives for waste reduction and recycling, which would obviate the necessity to construct a landfill.*
- *The entire application is based on an unfair comparison between the existing quarry operations and the proposed landfill. It is argued that the proper comparison is between a reinstated agricultural landscape and a landfill.*
- *Chapter 17 of the Environmental Impact Statement fails to meet the requirements of the regulations with regard to considering the impact of interactions.*
- *This ground states that the ecological survey reported on in the Environmental Impact Statement was undertaken during September and that other species of interest may be found within the site outside the Autumn period.*
- *The Environmental Impact Statement incorrectly describes the location of the Dunlavin Marsh complex in relation to the facility.*

Inspector's Response: I assessed the Environmental Impact Statement which was submitted with the waste licence application. I consider that it complies with the regulations. Prior to the commencement of construction of the facility, the licensee shall report on the newt and sand martin populations of the areas which are likely to be affected by the construction of the facility**.** Condition 8 requires biannual ecological surveys of the facility perimeters and the Dunlavin Marsh. These are the primary areas of wildlife interest. Additional information clarified the position of the marsh complex.

15. **Requirement for an Archaeological Survey**

A licensed archaeologist should be employed to monitor any ground disturbance during site development.

Inspector's Response: Condition 8 provides for such a survey.

16. **Ecological Impact**

- *Badger sets are located 30 to 100m from proposed facility.*
- *Destruction of hedges and scrub should take place outside of the nesting season*.

Inspector's Response: Badger setts are a potential target for landfill gas migration. Landfill gas migration will be monitored along the perimeter of the facility. This will afford protection to the setts. It is not envisaged that any other emissions would impact upon the local badger population. The Wildlife Act (2000) controls the destruction of hedgerows during the nesting season and the Recommended Proposed Decision does not exempt compliance with said act as per condition 1.3.

17. **Leachate Management**

- *There is no indication that leachate will continue to be removed after final capping of the landfill.*

- *Leachate should be removed from the landfill and treated at a suitable waste water treatment plant during operation and after cessation.*

Inspector's Response: Leachate will be collected from the landfill and transported to an off-site wastewater treatment plant to be agreed by the Agency. Following final capping it is envisaged that leachate recirculation will greatly reduce the need to remove leachate for off-site treatment. Nonetheless leachate management will still be controlled by the Recommended Proposed Decision until licence surrender is agreed by the Agency. Condition 12 provides financial provisions to ensure that environmental control and monitoring at the facility will be maintained for an extended period after the landfill is restored.

18. **Contingency Arrangements**

Measures should be put in place for dealing with contamination incidents, including measures regarding possible leakage through the landfill liner

Inspector's Response: Condition 9 provides for general contingency arrangements. Condition 6 sets groundwater trigger levels which will indicate if liner failure has occurred.

(10) Recommendation

I recommend that a licence be granted for Classes 1, 4, 5 and 13 of the Third Schedule and Classes 4, 9, 11and 13 of the Fourth Schedule.

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

Signed _____ **Dated:**

Name: Eamonn Merriman

APPENDIX 1

FACILITY LOCATION AND LAYOUT PLANS

1. Figure B2b *Site Neighbourhood* of the application. This photograph was taken during June 2000.
2. Figure 10.1 *Surface Water Bodies* of the Environmental Impact Statement.
3. Figure 5.7 *Operational Phasing* of the Environmental Impact Statement.