Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

This report has been cleared for submission to the Board by the Programme Manager, Paddy Nolan
Signed: N Keavey **Date:** 31/08/05

GUIDANCE

INSPECTORS REPORT ON A LICENCE APPLICATION

To:	DIRECTOR OF LICENSING & GUIDANCE
From:	Dr Tom McLoughlin **- LICENSING UNIT**
Date:	31th August 2005
RE:	**Application for a Waste license, from Kings Tree Services Ltd (KTS) Licence Register Number 218-1**

Application Details

Type of facility:	Green Waste Composting Facility
Class(es) of Activity (**P** = principal activity):	4th Schedule: 2 **(P)** & 13
Quantity of waste managed per annum:	40,000 t
Classes of Waste:	The green waste will comprise wood wastes generated by the KTS tree surgery business, garden and park waste produced during improvement and maintenance works by landscape gardeners, grass and shrub trimmings produced by individual householders and timber and wood waste (non-biocide treated) recovered during construction and demolition works.
Location of facility:	Coolbeg, Co. Wicklow.
Licence application received:	3/3/2005
Third Party submissions:	None to date
EIS Required:	Not required by planning authority.
Article 14 Notices sent:	18th May 2005
Article 14 compliance date:	7th July 2005
Site Inspection:	10/5/05 Site notice compliant

1. Facility

Kings Tree Services (KTS) Ltd have applied to operate a green waste compost facility at a worked out sand and gravel quarry in the townland of Coolbeg, Co. Wicklow. The green waste will comprise wood wastes generated by the KTS tree surgery business, garden and park waste produced during improvement and maintenance works by landscape gardeners, grass and shrub trimmings produced by individual householders and timber and wood waste recovered during construction and demolition works.

KTS has operated as a tree surgery business since 1988 and a Director, Mr. Charlie King, has over thirty years experience in tree surgery. KTS is one of the leading service providers in Wicklow and the Greater Dublin Area and specialises in all aspects of tree care including hedge cutting, dangerous tree removal, stump removal, and timber recycling and shredding.

The site encompasses approximately 2.5 ha and will be occupied by the waste acceptance and composting areas, ancillary buildings including the reception office, workshop and weighbridge and parking areas. The majority of the site will, when the facility is operating at maximum capacity, be occupied by the composting process areas which will comprise the waste reception area, windrows, maturation area, finished product storage and a leachate storage lagoon.

The composting operation will involve pre-treatment to shred and mix the green waste, composting in open windrows, maturation and post treatment to remove impurities. The finished product will be suitable for horticultural and agricultural use.

When fully operational the facility will accept approximately 40,000 t of green waste annually and produce approximately 25,000 t of compost. In the start-up phase it is envisaged that there will be an annual throughput of 4,500 t of green waste rising to 40,000t by year 5.

Wicklow Co. Council granted planning permission for the development in June 2004 and a Waste Permit was obtained for the LA in August 2004. An appeal was made to An Bord Pleanala by 1st and 3rd parties. The an Bord Pleanála decision is expected soon.

It should be noted that this proposed facility is located on the adjoining lands to the Ballynagran landfill (165-1) which has been licensed by the Agency. Construction of the landfill facility has not commenced to date.

There are three residential properties within 300 m of the site. The nearest properties (two semi detached houses) to the site are approximately 150 m north east of the northern site boundary. The third house is located across the N l 1 approximately 300 m away to the east. There is a concrete batching plant located approximately 180 m east of the eastern site boundary, between the site and the N l 1. The Beehive Public House is approximately 320 m to the south east of the southern site boundary.

The company requested operational hours between 06.00 to 20.00 Monday to Friday and 06.00 to 18.00 on Saturday and due to the nature of the tree surgery business it may, on occasion, be necessary to operate outside these hours for example to accommodate call outs to remove storm damaged trees and timber debris.

This recommended decision (RD) allows waste acceptance and handling during the following hours:

- Between 7 a.m. and 7 p.m. Monday to Friday and between 7 a.m. and 1.00 p.m. on Saturday.

The above hours of acceptance and handling are in my opinion reasonable taking on board any potential nuisance that might be caused to the nearest receptor sites (dwelling houses) if the hours of acceptance were increased.

They can work outside these hours in cases of emergency with the agreement of the Agency.

See condition 1 of RD.

2. Operational Description

Green wastes delivered to the facility will be subject to waste acceptance procedures to ensure that only suitable wastes are accepted. Initially, the majority of the waste will be generated by KTS and delivered to the facility either by KTS employees, or hauliers employed by KTS. This will minimise the risk of the delivery of unsuitable material. KTS has received Waste Collection Permits from Wicklow County Council and Dublin City Council. Where green wastes are delivered by third party commercial entities (e.g. landscape gardeners, waste contractors) the produces/holder/collector of the waste must, if requested, provide documentation that the waste meets KTS specifications. Waste not conforming to the specification will not to be accepted at the site. KTS will also prepare and advertise details of wastes that will be accepted from individual householders.

Composting Process

Reception

Green waste accepted at the facility may contain a small percentage of contaminants, e.g. glass, metal and plastic. Large items will be removed from the waste manually and placed in a container for subsequent removal to a licensed landfill or if the material is suitable for recovery to a permitted recovery/recycling facility.

Windrow

The green waste will be placed on the ground at the front of the windrow using an industrial front-end loader. In the early stages of the process the windrow will be turned two to three times a week using a hydraulic excavator. Subsequently, the turning frequency will be reduced. It is envisaged that the composting cycle will be 8-12 weeks.

Screening & Maturation

Following the composting process, the material will be transferred to the maturation area, where it will be screened to remove impurities. The compost will remain in the maturation area for a period of approximately 8 weeks to allow for proper maturation, following which it will be moved to the finished product storage area.

Finished Product Storage

The finished product will be stored on-site in the dedicated product storage area. This is designed to accommodate seasonal fluctuations in demand. The product will be loaded onto trucks for removal off-site to its final destination/end market.

3. Use of Resources

The facility has included details on raw material and energy consumption as follows: Diesel fuel oil 15,000 litres per annum. Electricity 10,000 KW (3 phase) and 100,000 litres of water. Some of the liquid stored in the lagoon will be added to the windrows to maintain the optimum moisture content. The leachate storage lagoon has a capacity of 1250 m3 and is designed to accommodate leachate/contaminated run-off when the facility is operating at maximum capacity. Water for sanitary use will be obtained from an on-site bored well at the location.

4. Emissions

4.1 Air

Odour

According to the applicant, the waste that will be accepted and processed at the site will comprise 'fresh' green waste and timber only, which is not malodourous. Food bearing waste or sludges will not be accepted at the facility. The proposed waste acceptance procedures will ensure that any malodorous or unsuitable waste delivered to the facility will not be processed, but removed off-site as soon as practical.

The RD will requires odour control measures to be put in place at this facility as per condition 6.1. Air monitoring will be required on a biannual basis.

Bioaerosols

The composting of biodegradable waste involves a microbiological process where microbes (for example, bacteria and fungi) proliferate and grow by using the nutrients in the compost for food. High total viable cell counts (TVCC) are reached during the process and the microbial cells can be aerosolised (i.e. become airborne), particularly, during mechanical agitation of the composting material and during shredding. This gives rise to the term 'bioaerosol'.

As this facility is less that 200 m from the nearest receptor site the Agency requested that the applicant furnish an independent risk assessment (RA) to appraise potential bioaerosol concentrations from the site.

In response the company carried out a case specific RA and stated that a Bioaerosol Control Plan has been developed for the facility based on the source-pathway receptor RA model. Arising from the RA, risk managment controls will be used to minimise bioaerosol emissions levels and further reduce the bioaerosols to a level that presents negligible risk to the receptors.
These operational control measures will be employed at the facility include:

- Regular and thorough mixing of the Windrows (2 - 3 times a week) will be carried out to aid proper composting and minimise the presence of *Aspergillus fumigatus*. Temperature sensors will be placed at different locations and depths in each windrow. These will be monitored on a daily basis by KTS personnel to ensure that optimum temperatures are maintained.
- The optimal moisture content for windrows is 50 - 60%. Dust concentrations can be greatly reduced if moisture levels are maintained within the optimal levels. The windrows will be visually inspected on a daily basis to confirm the moisture level is in the optimum range. Leachate/contaminated run-off from the on-site leachate storage lagoon will be added to the windrow using the windrow turning machine as required to maintain optimum moisture levels.

- Maintaining a clean site to reduce dust generation. A flexible hose will be provided for use in damping down the site during dry weather conditions.
- All facility operators and compost workers will be trained in the appropriate methods of dust and bioaerosol control.
- The windrows will be as high as possible but not so as to reduce the efficacy of the composting process. The average height will be 2.5 m.

In addition to the above operational measures dust mitigation measures which will be employed at the facility have been shown to reduce bioaerosol dispersion. The measures include dust suppression systems on the shredder and screening machine and regular cleaning of the site. The site layout was also designed to maximise the distance between the potential sources of bioaerosols and potential receptors.

The report concludes that the distance from bioaerosol generating areas of the site to the nearest sensitive receptors (all >200 m) and the measures specified in the proposed bioaerosol control plan will mitigate any potential negative impacts at each of the receptors.

Air monitoring outside the facility will be required on an annual basis as per Schedule C, in particular, in relation to monitoring for *Aspergillus fumigatus* (AF).

Also, the company will be requested to provide (as per condition 6.8 a baseline bioaerosol monitoring study (to include in particular, spores *of Aspergillus fumigatus* and Actinomycetes) at different locations at the proposed site and outside of the site boundary, to include sampling location(s) in the vicinity of the nearest receptor sites (dwelling houses). There is a requirement in the RD that this study is completed within 6 months from the date of grant of this licence. The results of this study will give an indication of the background levels of AF which can then be compared to the results of the annual monitoring requirements of this fungus in accordance with Schedule C.

Dr Martin Hogan, a specialist in Occupational Medicine, University College Cork, at a 2004 Bord Pleanala Oral hearing stated that the potential risk from bioaerosols for persons living near a composting facility was as follows:

'While the risks to vulnerable individuals such as immunocompromised is greater from Aspergillus there is no evidence that the risk attributable to living near a composting site is greater than exist already anyway'

The HSA will be notified of the proposed decision in due course having regard to functions with regard to safety at work legislation etc.

Dust

The moisture content of the material during all stages of the composting process including maturation and post composting screening will prevent the generation of dusts however there is the potential for dusts generation during the pre-treatment (shredding) stage.

Dust monitoring will be required as per Schedule C of the recommended RD.

4.2 Emissions to Sewer

There is no municipal sewer in the vicinity of the proposed facility. It is proposed to install a proprietary wastewater treatment system to treat sanitary wastewater from the

site offices. The treated effluent will be discharged to ground which will be in compliance with the Agency guidance on wastewater treatment. Leachate and contaminated run-off from the composting process will be collected and recirculated in the process. Surplus leachate will be removed off-site for disposal at a local authority operated wastewater treatment plant. KTS has received agreement from Wicklow County Council to dispose of the leachate at one of its wastewater treatment plants.

4.3 Emissions to Surface Waters

Clean surface water from roofs, non-process areas and the access road will be collected and directed to soakaways. Run-off from paved areas of the site used for vehicle parking will be directed to an oil-water separator, with the outfall connected to a separate soakaway. The facility is designed to ensure the separation of areas which have the potential to generate contaminated run-off/leachate and areas where this will not occur. An external perimeter kerb will be provided around the process and materials storage areas to prevent the entry of run-off from off-site upgradient areas and to contain contaminated run-off/leachate within the process/storage areas. The surface water run-off will be discharged to a purpose built lagoon which has a capacity of 1250 m^3.

The RD requires monitoring of certain parameters in accordance with Schedule C.

4.4 Emissions to ground/groundwater:

There will be no direct emissions to groundwater from the facility. The treated sanitary wastewater from the on-site effluent treatment plant will discharge to ground via a polishing filter. An assessment of the ambient hydrogeological conditions at the site concluded that the facility activities will not have a measurable impact on groundwater quality and that mitigation measures are not required.

The site will be covered in impermeable hardstanding (Condition 3.5).

The RD requires that all bunds and hardstanding surfaces shall be inspected quarterly for damage and structural soundness (Condition 3).

No direct emission to groundwater is allowed (Condition 5).

The applicant will be required to drill boreholes and carry out groundwater monitoring as per condition 3 to monitor for contamination due to leachate.

4.5 Wastes Generated:

While no significant amounts of waste will be generated on site for off site disposal. The applicant proposes to accept a total of 40,000 t per annum of green waste for the facility which will produce approx. 25, 000t of finished compost which will be used for agriculture and horticulture as a product.

4.6 Noise:

The pre-treatment and post treatment screening stages are potential significant sources of noise. To minimise impacts pre-treatment shredding and post treatment screening will be carried out on average 1 to 2 days a week. The waste reception area is designed to accommodate up to 5 days storage of fresh green waste at maximum capacity and the shredder will be of sufficient capacity to ensure that all of the stored

material will be shredded in the 1 - 2 day period. Similarly, the screening plant will be of adequate size to ensure that the treatment is limited to 1 to 2 days a week.
The applicant has also carried out an impact assessment and concluded that the predicted levels at the noise sensitive levels are all significantly below the Daytime and Night time criteria set in Waste Licences and will not result in any adverse impact at the noise sensitive locations.

According to the applicant the influence of a proposed dual carriageway which includes a proposed noise barrier between the site and the receptors to the east was not taken into account in the modelling, as it's precise location was not known at that time. It is however considered likely that the noise impacts from the site would be further reduced due to this noise barrier.

Schedule C set the requirements for noise monitoring. The noise emission limit values to be measured at any noise sensitive location are set in Schedule B.

4.7 Nuisance

Potential nuisances at the facility are controlled by Condition 6.7 of the RD.

5. Cultural Heritage, Habitats & Protected Species

The site is a worked out sand and gravel pit and the entire area has been disturbed by the quarry activities. An archaeological assessment did not identify any item of archaeological or cultural interest on the KTS site.

6. Waste Management, Air Quality and Water Quality Management Plans

National waste policy identifies the urgent need to provide waste management alternatives to landfill. Composting is recognised as one such viable mechanism to achieve the targets set for the diversion of organic waste from landfill. Wicklow Co. Council also recognises the need to reduce reliance on landfill and it is an objective of the Wicklow Waste Management Plan to provide a green waste composting facility in the county. The proposed development, which is designed to increase the recycling of biodegradable materials and reduce the volume of waste disposed to landfill, meets the needs identified in national waste policy statements and the objectives of the Wicklow Waste Management Plan 2000-2004. The development is also consistent with the Wicklow Co. Council's strategic planning objectives in relation to waste management. In the event that the composting facility is not developed the on-going deficit in the waste management infrastructure may delay the implementation of regional and local waste policy objectives in relation to diverting biodegradable wastes from landfill.

7. Compliance with Directives/Regulations

In relation to the Groundwater Directive, the facility will not have any direct emission to groundwater.

8. Fit and Proper Person

I am satisfied that the applicant meets the requirements for a Fit and Proper Person.

9. Submissions

There were no submissions made in relation to this application.

10. Charges

The RD requires that the applicant shall pay an annual contribution of €6240 (Condition 12).

11. Recommendation

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

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

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

Signed

pp Joe Keaveney

Dr Tom McLoughlin

Senior Inspector

Procedural Note

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