RESPONSE TO SGN 5.06 AND BAT - SANDY LANE IBA RECYCLING FACILITY

Section 2 – Techniques for Pollution Control

2.1.1 Pre-acceptance procedures to assess waste
Energy from waste (EfW). EfW facilities treat waste under controlled conditions, to reduce the volume and recover value from the waste through the generation of electricity and heat. This is the process that produces the waste that Ballast Phoenix will accept known as IBA (Incinerator Bottom Ash).
The waste is characterised following the ESA sampling and testing protocol and the producer updates Ballast Phoenix with the results regularly. These results are recorded and stored. The producer provides a Duty of Care Waste Transfer Note season ticket for the IBA (Incinerator Bottom Ash) that will be delivered to the facility.

2.1.2 Acceptance procedures when waste arrives at the installation
See 16. BPL P 005 Acceptance Criteria

2.1.3 Waste Storage

Only one waste stream is accepted on site, the storage yard will be sign posted designating those areas that are for incoming waste and those where processed material is stored. This is to be controlled by the Site Manager who will direct the Loading Shovel operator to ensure storage areas are appropriately maintained.

The site surface is fully concreted with self-contained drainage towards a storage Lagoon.
Daily and weekly inspections of the storage areas are recorded on company environmental check sheets as part of day to day operations.

There is a spillage procedure in place and records of any spills are recorded including any actions that may be required. The single waste stream delivered to site ensures that mixing different batches will not cause any issues.

2.1.4 Treatment – general principles

Brief on Processing
The IBA will be tipped and stockpiled into designated areas on a fully concreted dedicated storage area and left to condition over a period of approximately 4 weeks. After the conditioning process, the IBA is then transferred to the processing facility housed within a dedicated process building. The plant for processing IBA includes various components such as hoppers, conveyor belts, screens, overband magnets and eddy current separators to screen, separate and grade the recyclable materials. The finished IBAA and separated ferrous and non-ferrous metals will be transferred to dedicated storage areas. Once the IBAA materials are fully conditioned, they are available for distribution to the markets. The ferrous and non-ferrous metals are sent onto metals processing facilities for further recovery.
See building plans reference, 31.c. Plan IBA Building Elevations and 31.d. Plan IBA Building Plan.

2.1.5 – 2.1.15 these sections are not relevant to the process due to the nature of IBA.

2.2.1 Point source emissions to air

The Facility does not have any point source emissions to air

2.2.2 Point source emissions to surface water and sewer

The Facility does not have any point source emissions to surface water and sewer.

2.2.3 Point source emissions to groundwater

The facility has no point source emission to groundwater.

All water from the process will drain into a collection lagoon and where practicable will be reused on site (see 10. Layout - Drainage Plans). If the Lagoon levels remain high due to weather conditions, off site disposal (by tanker) to a suitable facility will be arranged.

2.2.4 Fugitive emissions to air

Internal Process
The IBA processing will take place inside a dedicated process building. The building is monitored for dust levels in relation to their impact on operational staff, who are individually assessed for occupational dust monitoring of exposure to respirable dust, total inhalable dust and respirable quartz. If the findings of the personal monitoring indicates that levels are rising to an unacceptable level further action will be take to determine what measures are required for further monitoring or measures required to reduce dust levels within the building. Any proposals for abatement technology within the process building will be discussed in advance with the Environment Agency.

External Storage
Typically IBA contains a range of particle sizes with only a very low proportion (typically less than 5%) of finer particles, which could be classed as dust.
The chemical composition of IBA is such that, if the ash is wetted prior to stockpiling (which is an integrated practice of the recycling process), it forms a crust, which prevents finer particles being dispersed by wind. IBA has an inherent cementitious (pozzolanic) quality, see 19. IBA Stockpiles – Dust potential for explanation of how/why crusting occurs. See 18. P006 Dust Management Plan and 29. Fugitive Emissions Management Plan for a full risk assessment of the potential for the release and control of fugitive emissions from the operations undertaken at the facility.

External storage is preferable to housing stockpiles of incoming IBA and processed material for a number of reasons.

Maturation of IBA/IBAA is dependent on air circulation as the absorption of Co2 (carbonation) brings the pH of the IBA down from 12.5 towards neutral 9-10, this is an essential element of the recycling process that cannot be readily achieved if the IBA is stored within a building.

The IBA is delivered to the Facility at a temperature that would create an uncomfortable environment for employees to work in; a temperature controlled building would adversely affect the recycling process. If unprocessed IBA is stored within a building it

has the potential to result in hydrogen gas build up due to the aluminium content within the incoming IBA. If this occurs in a confined space it could become problematic and unsafe. If IBA is stored externally there is no build up of hydrogen gas in the same way and there are no associated risks to sensitive receptors or operational staff.

Dust Management
The external storage of IBA and IBAA is often mistakenly considered to have issues with dust generation and covered storage is suggested. Due to the pozzolanic (cementitious) properties of IBA/IBAA the material quickly crusts over and the potential for dust to be generated from the stockpiles is extremely low. The stockpiles are also continuously dampened down with the use of mobile and fixed sprays, further reducing the potential for dust generation.

Traffic from on site mobile plant and delivery and despatch vehicles have the potential to generate dust emissions, this is recognised within the fugitive emissions and dust management plans for the facility and appropriate mitigation measures are in place, ensuring that the comprehensive dust suppression system reduces to an absolute minimum the likelihood of any dust being generated. On the basis of little or no dust being generated from vehicle movements within and to and from the facility and with mitigation measures in place should any dust be generated from this source there is a low risk remaining of any adverse impact to the identified sensitive receptors from the external storage of material.

2.2.5 Fugitive emissions to surface water, sewer or ground water
The site is a constructed of impermeable material and all above ground storage tanks will be bunded. See 18. P006 Dust Management Plan and 29. Fugitive Emissions Management Plan.

The creation of leachate is another consideration to take into account when deciding to house stockpiles externally (see also 2.2.4 above). The generation of leachate is at a low level as much of the water used to dampen down the material is absorbed and evaporates. The water on site is collected in the onsite water storage lagoon and can be used to suppress any particulates on traffic routes through a water bowser and is also recirculated through the dust suppression system. The site itself is fully contained and there is no run off beyond the site and no fugitive emissions associated with the use and storage of water on site.

2.2.6 Odour
The process is mechanical and does not produce odour. IBA and IBAA is not considered to be malodourous. There has been no history of odour problems at any of the existing seven operational sites.

2.3 Management
The facility will operate in accordance with the mitigation measures and operational controls outlined in the Fugitive Emissions Management Plan and Dust Management Plan that will ensure those activities that have the potential to have an adverse impact on the environment are adequately controlled or avoided.

The processing plant is operated under a full PPM (plant preventive maintenance) system, which aims to resolve potentially disruptive maintenance items before they

result in breakdowns. This includes procedures such as the regular greasing of all moving parts to minimise friction and reduce drag. The mobile plant serving the plant are similarly maintained and are replaced on a regular basis, usually five years, to ensure that the facility operates with the most recent and fuel efficient equipment. Operators undergo specific training to learn efficient driving techniques to minimise fuel use.

Any plant or equipment defects found are recorded and added to the Action Log and prioritised. Once added the tasks are planned into the work schedule.

Training Program

- Environmental Permit Awareness
- Spillage Procedure
- Waste Transfer Notes
- 14001 Awareness
    - Aspects and Impacts
    - Emergency preparedness
    - Preventive and corrective actions
    - Legal and other requirements

Ballast Phoenix is developing a Training Matrix that will show the skills and competencies necessary for key posts. This is being done as part of the accreditation process to the Competence Management System (CMS) during 2014, see document references 27a to 27d CMS Documentation.

The procedures used for reporting and investigating incidents on site are included with the additional information pack provided with the permit application. There are:
15. BPL HS P 001 Accidents / Incidents reporting procedure
22. P008 Procedure for Non Conformance & Corrective Action
20. P011 Emergency Preparedness Procedure
23. P011A Procedure for General Spillage

The company Environmental Policy is reviewed bi-annually and the business is audited by British Standards Institution (BSI) to ISO 14001. Internal audits are also conducted at each operation twice per year. A Management Review is held each year. Environmental performance is reported then documented following the meeting. This is communicated to external interested parties on request. Please see document reference 21. Environmental Policy.

2.4.1 Raw materials

IBA and water are the only raw materials used. IBA is the material that is delivered to site for processing. It undergoes mechanical treatment (see section 2.1.4 for process brief). During this process water is used as a suppressant (see sections 2.2.4 and 2.4.3).

2.4.2 Waste minimisation audit

Ballast Phoenix aims to recycle all of the material that is delivered to site.
IBA is processed to create IBAA for use in construction projects. All metals reclaimed in the process are sent for reprocessing before re-use. Any IBA that cannot be processed is returned to the energy from waste plant where it originated for further processing.

2.4.3 Water use

IBA is delivered to the facility with a high moisture content, typically around 20%. Water spray cannons are used for dust suppression. All the water that drains from the material joins the full containment system at the facility and ultimately is stored in the water storage lagoon on site. This water is then re-used in the dust suppression system. During periods of excessive dry weather the lagoon may be topped up from mains water. The self contained water system on site is designed to minimise water usage making use of grey water, including run off from site surfacing and from the rainwater collected from the process building. The rain water run-off from the building can be directed into a storage tank which can link directly into the dust suppression system. If the rainwater storage tank is full it can be linked to the water storage lagoon to create additional storage capacity, provided this will not affect the required capacity for floodwaters.

2.6.1

See section 2.4.2 Waste minimisation audit

2.7 Energy

All items of plant within the ash plant are driven by electric motors that have been chosen for their efficiency, as well as financial prudency wherever this is possible. Energy usage is driven by the volumes of material received for processing which, under normal operating circumstances, remains relatively constant. The plant is not left to run when no material is being fed into the plant, whilst at the same time avoiding shutting down and restarting the plant needlessly, bearing in mind that the highest energy demand occurs during the start-up procedure. Inverters and soft starts are being fitted on new sites and as replacements when old equipment comes to the end of its life. New mobile plant has been specified to be more environmentally friendly and energy efficient compared to the current models.

See 14. Objectives Program and 21. Environmental Policy.

2.8 Accidents

See section 2.3 Management

2.9 Noise

A full noise assessment has been carried out in relation to the proposed Facility. This is included in chapter 8 of the planning application. The work assesses the potential noise effects due to the construction and operation of the proposed facility upon the local noise environment, and identifies mitigation measures required to control the predicted effects. Information within the planning application is based upon the results of a background noise survey, consultation with the Local Authority, a noise modelling study, and consideration of the noise impacts of the scheme in relation to local policy and national legislation. Copy of the Noise assessment is provided as document references 32a to c: Noise Assessment.

2.10.1 Emissions monitoring

Regular observations will be recorded, monitoring the site boundary for emissions including additional boundary monitoring and testing where required. Any issues found will trigger further investigation and if required corrective / preventive measures will be put in place. See also See 18. P006 Dust Management Plan and 29. Fugitive Emissions Management Plan.

2.11 Closure
The decommissioning of the plant has no inherent pollution risk. The processing plant and equipment would be simply disassembled, transported from site and in all probability reassembled at another facility. The IBAA product would be sold to suitable construction projects and metals transferred to other facilities for further processing. A full decommissioning plan would be prepared and discussed with the Environment Agency prior to any permit surrender application being made.

2.12 Installation issues
Section not applicable.

BPL will be the sole operator of the Facility. The Facility is being developed in partnership with Veolia Environmental Services Ltd and a clear communication strategy is in place to ensure that during the development and operation of the facility communication between the two parties is direct and effective.

Section 3 – Emissions

Section not applicable.
See Sections 2.2.4, 2.2.5 and 2.10.1 above.

Section 4 - Impact

The facility location, description and receiving environment is described in the non technical summary prepared for the planning application which is provided as document reference 6 – Non Technical Summary Sandy Lane and 33. Plan Site Context.

The impact on the environment from the facility is considered to be minimal. Health and Safety systems are fully integrated into the facility including a minimum of 2 first aiders based on site.

The whole facility will be surfaced with concrete and the facility will operate within a fully self contained drainage system so contamination to land is prevented. Surface water will be collected and reused on site. The potential for fugitive emissions to air are considered fully and all appropriate mitigation measures are identified and will be integrated into the development of the facility and its operations including visual checks and monitoring.

Any waste generated (i.e. material that cannot be processed) from the facility will be returned to the EfW where it was generated, to be reprocessed.

IBA is highly alkaline when it reaches the facility at around 12.5 pH and IBA absorbs Co2 (carbonates) from the atmosphere bringing the pH down towards neutral and causing the IBA to bulk as it matures. This process is known as carbon sequestration. The reuse of waste as a resource and the benefits from carbon sequestration will mean that the facility's overall impact on global warming will be a positive one.