



REPORT

Sandsfield Gravel Company Ltd

Milegate Eastern Extension Landfill

Nuisance and Health Management Plan

Submitted to:

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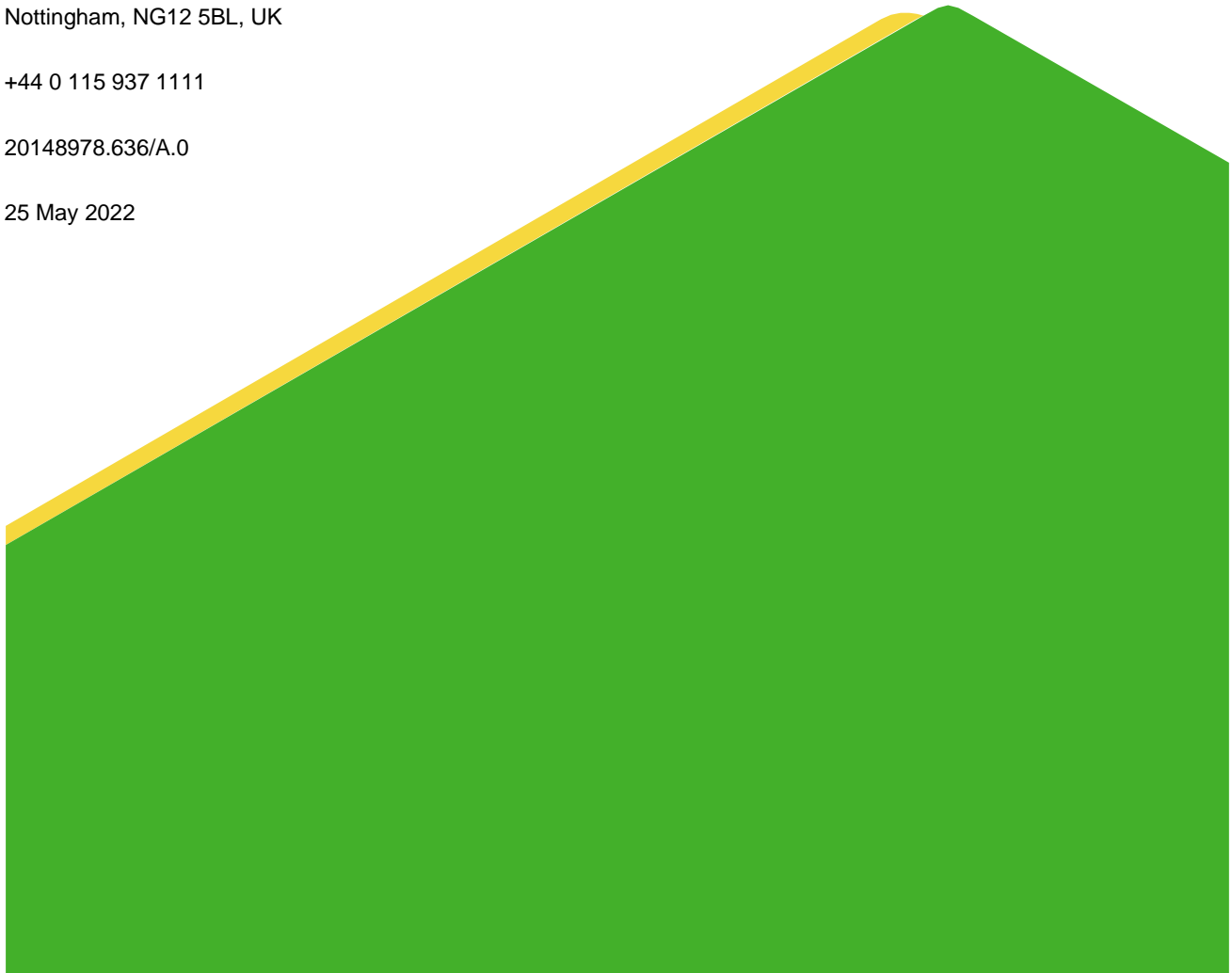
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1.0 INTRODUCTION

Sandsfield Gravel Company Ltd (Sandsfield) has requested Golder, member of WSP in UK, to update the existing Nuisance and Health Management Plan and Nuisance and Health Risk Assessment (NHRA) for its Milegate Extension Landfill. These were previously submitted to the Environment Agency in November 2004 as part of a PPC application for the landfill (ref. 03523534.510) and amended most recently in 2018 as part of a variation application for a Northern Extension to the landfill (ref. 1671322.625).

Sandsfield proposes to develop its existing operations and is applying for planning permission and variation to its Environmental Permit to:

- Allow continued and uninterrupted quarrying and landfilling operations to extend into the neighbouring field to the east (the 'Eastern Extension') which is currently in agricultural use. The Eastern Extension is proposed to be completed within the timeframe already permitted for the existing operations i.e. before February 2038;
- Gain planning approval for movement of the existing landfill flare from the southeast corner to the northwest corner of the existing site (January 2019) and upgrade of that flare (September 2021) (retrospective planning application); and
- Install a new landfill gas utilisation compound at the northwest corner of the existing site, in which there will be the phased installation of two new landfill gas-to-energy engines ('micro-generators') and associated equipment. The landfill gas flare will be moved into this compound. A new cable connection will be installed from the compound, extending northwest to a new step-down transformer, enabling the gas engines to generate electricity and supply a neighbouring business by private wire and the National Grid.

The Nuisance and Health Management Plan is updated here to reflect this proposed development. Following submission of the planning applications(s), this Nuisance and Health Management Plan will also accompany an Environmental Permit variation application for the existing Permit (EPR/BX1942IX) to reflect the same development proposals.

2.0 ENVIRONMENTAL RISK ASSESSMENT

The Nuisance and Health Management Plan is based on current operational practice and the findings of the Environmental Risk Assessment (ERA) provided as **Annex A**. The ERA identifies potential hazards, pathways and receptors. It refers to the control measures implemented at the Site to manage nuisance and health issues and therefore assesses the residual significance of each. It is noted that the landfill operational processes and procedures have been well established and satisfactorily implemented at the Site since commencement of landfilling in 2007.

3.0 NUISANCE AND HEALTH MANAGEMENT PLAN

3.1 Particulate Matter

3.1.1 Dust Generating Activities

These may include the reception of waste delivery vehicles at the Site, exit of vehicles following deposit of wastes, traffic movements on internal site haul roads, overburden removal and landscaping/reprofiling works, raising of dust from bare areas by wind, deposit of wastes and handling at the operational area, compaction and covering of wastes, site preparation and engineering works, and site restoration works.

3.1.2 Sensitive Receptors

The ERA does not identify any high sensitivity receptors to particulate matter from the Site; the specific receptors addressed in the air quality modelling for the Site are all up or cross-wind from the Site (including the Eastern Extension) and the closest is 160 m to the south (Humberside shooting range clubhouse).

3.1.3 Control Measures

3.1.3.1 Weather Conditions

Meteorological monitoring will be undertaken and includes monitoring for wind direction and wind speed to identify adverse weather conditions and significant wind speeds where particulate matter has the potential to leave the Site.

3.1.3.2 Dust Control Actions

To prevent the release of dust created by operations at the Site, water will be sprayed over the operational areas and site roads to affect control as necessary. Internal access roads and reception areas will be cleaned and maintained on a regular basis using an on-site, or hired, road sweeper.

Where ground conditions are damp, or there is precipitation, no further action may be necessary in relation to site engineering works, restoration works on completed phases, waste handling operations, or site haul roads in relation to damping of areas.

During dry weather conditions and irrespective of wind direction, measures may be implemented to dampen (subject to moisture content requirements of materials being placed) any areas being engineered, restoration works involving soils placement, operational areas being trafficked and site haul roads, to minimise release of dusts. This will be undertaken with a tractor and bowser or similar plant.

In adverse weather conditions where the raising of airborne dust from waste disposal or engineering operations cannot be prevented and dust cannot be prevented from leaving the Site, the offending operation will not occur.

3.1.3.3 Vehicle Speeds

Vehicle speeds will be limited to 15 mph on all Site roads and landfill areas. Appropriate signs are in place and will be maintained at the site entrance to indicate the maximum permissible site speed.

3.1.3.4 Waste Placement

To control dust from the landfill surface, specified waste types will be subject to handling measures detailed in the site waste acceptance procedures, to minimise releases of dust during deposit, handling and covering.

When necessary, high-risk particulate matter waste streams will be accepted in bagged or treated forms only. Waste will be thoroughly compacted and covered with a suitable amount of daily cover material. Upon any cell reaching permanent filling levels a temporary capping system will be installed after six months if permanent capping systems have not been installed.

3.2 Odour

3.2.1 Odour Generating Activities

These comprise waste reception, deposit and handling, removal of intermediate cover, landfill gas control and maintenance of landfill gas control infrastructure, and leachate re-circulation.

3.2.2 Sensitive Receptors

The ERA does not identify any high sensitivity receptors to odour generated at the Site; the specific receptors addressed in the air quality modelling for the Site are all up or cross-wind from the Site (including the Eastern Extension) and the closest is 160 m to the south (Humberside shooting range clubhouse).

3.2.3 Control Measures

3.2.3.1 General

Control measures will include:

- Restricting materials that are likely to cause odour, like putrescible or already putrid biodegradable waste;
- Minimising quantities and storage times for odorous or potentially odorous materials;
- Managing materials and processes in ways which minimise the production of odours;
- Working within the effective operational capacity of the site, and;
- Providing effective containment and abatement for odorous materials and activities.

3.2.3.2 Weather Conditions

Meteorological monitoring will be undertaken and includes monitoring for wind direction and wind speed to identify adverse weather conditions and significant wind speeds where odour has the potential to leave the Site. Periods of low wind speed towards receptors will also be considered, as odours are least likely to be dispersed during these conditions. Details of weather condition monitoring and remedial actions undertaken will be recorded in the site diary.

3.2.3.3 Odour Monitoring

An olfactory assessment shall be made by the Site Manager or designated member of staff at a minimum frequency of once per week at the site reception (EMP1) and the northern and eastern boundary of operational phases (EMP 2). Assessment may also be made by a suitably qualified member of staff during the monitoring round of the leachate and gas monitoring points. If an odour problem is detected, then the landfill gas and leachate management procedures and other relevant operational procedures will be reviewed, and appropriate action taken.

Other sources of potential odour problems are the active tipping face, which will be assessed during site operations by a designated member of staff. If an odour problem is detected then the waste deposition and cover procedures will be reviewed and appropriate action taken. If odour from wastes deposited at the active tipping face cannot be adequately controlled then further monitoring shall be undertaken at the site boundary. If required, the site shall cease to accept high odour risk waste streams when odour cannot be adequately controlled at the site boundary and the prevalent wind direction is towards sensitive receptors.

The assessment shall be recorded in terms of odour intensity and extent in accordance with the following:

Intensity:

- 1) No detectable odour;
- 2) Faint odour (barely detectable, need to stand still and inhale facing into the wind);
- 3) Moderate odour (odour easily detected while walking and breathing normally, possibly offensive);
- 4) Strong odour (bearable, but offensive odour - will my clothes/hair smell); and
- 5) Very strong odour (this is when you really wish you were somewhere else).

Extent:

- 1) No detectable odour;
- 2) Local and impersistent (only detected during brief periods when wind drops or blows);

- 3) Impersistent as above, but detected away from site boundary;
- 4) Persistent, but fairly localised;
- 5) Persistent and pervasive up to 50 m from site boundary; and
- 6) Persistent and widespread (odour detected >50 m from site boundary).

The date, time and duration of the assessment shall be recorded, together with a description of the odour.

Odour nuisance from the importation of malodorous wastes will be controlled by the application of daily cover as detailed in the site waste acceptance procedures.

Odour nuisance arising from landfill gas emission will be controlled by extraction of the gas and utilisation or flaring as described in the Gas Management and Monitoring Plan for the Site.

3.3 Dirt and Mud

The dispersal of dirt and mud originating on the landfill onto public roads will be controlled. Unless properly controlled, mud and dirt has the potential to adhere to the tyres and chassis of vehicles and then be deposited beyond the site.

In the event of mud or debris being deposited onto the public highway, or fouling or discoloration of the public highway, then immediate arrangements will be made for the use or hire of a mechanical road sweeper in order to cleanse the affected areas as soon as practicably possible to the best standard that the available plant and prevailing conditions allow.

The following operational procedures will be implemented to ensure that dirt and mud do not reach the public highway and surrounding land:

- Where possible, the site roads will be constructed of hardcore and/or hard surfaced, including the site reception and entrance from highway;
- Internal access roads will be cleaned and maintained on a regular basis using a hired or on-site road sweeper to remove dust, mud, and other debris; and
- Waste compacting machinery and other plant will be thoroughly cleaned before being allowed off the site.

Internal access roads will be monitored twice daily but inspection will occur more frequently during adverse weather conditions. If any dirt or mud is found on internal roads, measures will be made immediately for the debris to be swept up with a road sweeper or tractor and brush, and for this to be cleared by the end of the working day. The cause will be identified and any appropriate measures to reduce the probability of this nuisance reoccurring will be taken. If a marked elevation in mud and debris is noted during the daily inspection then the mitigating measures employed on-site will be reviewed.

EMP1 (site reception) will be monitored twice daily but inspection will occur more frequently during adverse weather conditions. If mud or dirt has been identified on the site road between the weighbridge and highway, the highway will be inspected to ensure that the dirt or mud has not been transferred.

During adverse weather conditions, should failure of road cleaning facilities occur in conjunction with excessive trafficking of mud onto external public highways, the installation will cease to accept waste until measures can be implemented to clean and maintain the cleanliness of the highway.

3.4 Litter

All vehicles delivering waste to the site will be required to ensure that loads carried in open vehicles or containers are secured with a net or tarpaulin to prevent items falling or being blown from the load.

Operations at the site will be conducted in a manner that minimises the incidence of windblown litter. During adverse weather conditions, waste containing paper and other materials likely to be windblown from the site will be deposited at lower levels within a phase and/or at the toe of the landfill face or, when necessary, will be refused access to the site until weather conditions become acceptable. Whenever possible, the filling of the upper levels in each phase will be undertaken during favourable weather conditions when the wind speed is low.

When necessary the current tipping area and completed areas awaiting final capping will be protected by a perimeter litter fence comprising a 2.0 m high mobile fence, erected within the operational phase with due regard to wind direction. The fencing is of a quality and design such that it will be sufficient to catch most of the litter blown from the disposal area.

The litter fence will be regularly maintained and repaired.

EMP 1 (site reception), EMP 2 (northern and eastern boundaries) and EMP3 (active tipping area) will be inspected daily and any loose waste material will be collected and disposed of within the landfill. If windblown materials leave the site the landfill will stop accepting light wastes, for example paper, polythene and dry powders.

Litter collecting on the litter screens will be removed at intervals consistent with maintaining the efficiency and appearance of the screens. The boundary fences and litter fences described above will be walked regularly not less than once a week, more often if required, to retrieve any windblown litter caught by the fence or which has blown over it without delay. Litter accumulations near footpaths, becks, fields or residential areas shall be cleared first.

During very adverse weather conditions, Sandsfield reserves the right to cease waste acceptance until satisfactory weather conditions return.

3.5 Birds

The site is located in an area remote from any airport and reservoirs used for public water supply, but lies adjacent to areas of agricultural land and close to recreational areas and commercial/light industrial properties. Accordingly the site will be operated in a manner designed to minimise the opportunity for birds to feed on waste deposited at the site.

During the day the placed waste will be progressively covered with daily cover or other wastes to bury any biodegradable/putrescible materials, such that, at the end of the working day all biodegradable/putrescible waste will be covered by a thickness of selected cover material sufficient to prevent birds scavenging from the surface.

Site staff will report increased incidences of scavenging birds to the Site Manager during the day and immediately when they have the potential to impact upon sensitive receptors. Incidences of increased numbers of scavenging birds will be recorded in the site diary. In the event that the incidence of scavenging birds is unacceptable, methods will be used to control the birds. Such methods may include a combination of the measures detailed below:

- Use of additional daily cover to deter scavenging;
- Bird scaring cartridges;

- Crow scaring ropes;
- Amplified distress calls;
- Birds of prey or decoys; and
- Restrictions on acceptance of putrescible materials, closure of the site to high-risk waste streams or implementation of procedures to cover immediately such wastes during periods of high incidences of scavenging birds.

Selection of the appropriate method to be employed will take account of both effectiveness of the method to be used and its additional impact on the immediate environment, to ensure, subject to the need, effective control of any environmental risk resulting from scavenging birds and that the measures do not themselves cause pollution of the environment or harm to human health.

Particular attention will be made to ensure that deterrent methods do not generate excessive noise levels, by virtue of not siting these on areas of the site in proximity to sensitive receptors. Where wastes have been sufficiently covered at the end of the working day, so as to deter scavenging by birds, use of bird-scarers and amplified distress calls may be ceased until re-commencement of operations.

Use of measures implemented at the site, in response to incidences of increased numbers of scavenging birds, will be recorded in the site diary, along with details of date and time of deployment and location chosen to reduce off-site impacts arising from the use of the measures.

3.6 Vermin and Insects

The proposed method of operation and appropriate use of daily and intermediate cover, waste compaction techniques and handling procedures will ensure the minimisation of flies and rats at the site. The use of intermediate cover will minimise the risk of rats being attracted to, and feeding from, the waste mass and will ensure that fly eggs laid on or in the waste will not have the opportunity to hatch and emerge.

Site staff will be aware of the importance to control flies and to report to Site Manager in the event that an infestation becomes evident. An assessment will be made for the presence of flies weekly between the months of May and October and monthly at all other times.

In the event that flies are introduced to the site with incoming waste, or an infestation is observed, then insecticides offering rapid knockdown and long-term treatment will be applied, as appropriate.

A specialist pest control inspector will inspect the site for the presence of rats. Site staff will also be made aware of the need to report any instances of evidence of rats to site management. In the event that evidence of rats is found, a specialist contractor will administer appropriate poisons.

Where preparations are used to control rats or flies, as above, the pest control contractor will be required to submit relevant health and safety data sheets and risk assessment for the activities being undertaken. Materials to be used will be selected, based upon risk to environment for residues and active ingredients, and need to maintain effective control.

If required by the Weeds Act 1959, action will be taken to control or prevent the spread of injurious weeds. Following the establishment of pasture at the site, inspections will be carried out at intervals for the presence of ragwort, which will, if necessary, be controlled.

The types of materials that will be used in the control of pests and weeds will be selected in accordance with the provisions above prior to their use.

Details of all site inspections for pests by the Site Manager, nominated deputy or specialist contractor will be recorded in the site diary. In addition, any incidences reported by site staff will also be recorded. Where remedial, or preventative, pest control measures are implemented at the site; full details will be recorded in the site diary, including materials used, date and effectiveness, or planned date for the next follow up visit.

3.7 Noise and Vibration

Due to the location and nature of the site with respect to off-site receptors, noise and vibration are not expected to be of primary concern during the operation and development of the site.

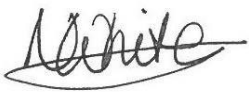
Noise pollution will be aurally monitored (qualitatively) by the Site Manager and effective noise reduction measures shall be introduced and noted in the site diary. Noise reduction measures will typically include:

- Controlled use of reversing beepers;
- Turning off idling plant engines;
- Acoustic containers for gas engines; and
- Selection of bird scaring devices.

No quantitative noise monitoring shall be routinely carried out at the site. Should noise be identified as a primary concern, for example following substantiated complaints, this will be undertaken as appropriate.

Signature Page

Golder WSP



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25 May 2022

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APPENDIX NHMP1

Environmental Risk Assessment

Annex A
Environmental Risk Assessment

Receptor	Harm	Pathway	Probability of Exposure	Consequence	Magnitude of Risk	Justification of Magnitude	Control Measures	Residual Risk
Local human population/ presence. Closest residential/commercial receptor is 160 m to the south of the site, up-wind of the operational site.	Harm to human health - respiratory irritation and illness.	Air transport then inhalation of dust.	Medium	Medium	Medium	Permitted waste types are inert or non-hazardous but could be dusty. Dust could be raised from the delivery (vehicle movements) and placement of waste, and from the operational face/waste flanks.	Waste is delivered in accordance with approved acceptance procedures; vehicles delivering waste to the site are appropriately covered; during dry weather conditions, dampening of roads, engineering area, restoration work areas and operational areas will be undertaken if required; in adverse weather conditions where release of airborne dust cannot be prevented from leaving the site, waste disposal will be stopped; vehicle speeds are limited on all site roads and landfill areas; waste is thoroughly compacted and covered with suitable daily cover materials.	Low
Local human population.	Nuisance - dust on cars, clothing etc.	Air transport then deposition	Medium	Low	Medium	Permitted waste types are inert or non-hazardous but could be dusty. Dust could be raised from the delivery (vehicle movements) and placement of waste, and from the operational face/waste flanks.	Waste is delivered in accordance with approved acceptance procedures; vehicles delivering waste to the site are appropriately covered; during dry weather conditions, dampening of roads, engineering area, restoration work areas and operational areas will be undertaken if required; in adverse weather conditions where release of airborne dust cannot be prevented from leaving the site, waste disposal will be stopped; vehicle speeds are limited on all site roads and landfill areas; waste is thoroughly compacted and covered with suitable daily cover materials.	Very Low
Local human population/presence, livestock and wildlife.	Nuisance, loss of amenity and harm to animal health.	Air transport then deposition	Medium	Medium	Medium	It is acknowledged that local residents and habitat receptors are often sensitive to litter emissions. Wastes accepted could generate litter.	Waste is delivered in accordance with approved acceptance procedures - vehicles delivering waste to the site are appropriately covered (loads in open vehicles will be secured with a net or tarpaulin); during adverse weather conditions, waste containing materials that could be easily windblown will be deposited at lower levels within the landfill; a perimeter (fixed or mobile) fence will be used where required, erected within the operational phase and with due regard to wind direction; daily inspections will be undertaken and any loose material collected and disposed of in the landfill; litter collected on litter fences will be regularly removed; where release of litter cannot be prevented from leaving the site, waste disposal will be stopped.	Low
Local human population / presence. Closest residential/commercial receptor is 160 m to the south of the site.	Nuisance, loss of amenity, road traffic accidents.	Vehicles entering and leaving site.	Medium	Medium	Medium	Road safety, local residents often sensitive to mud on roads.	A twice daily inspection will identify if there are any areas of build up of mud on internal and local roads and any issues will be cleared as soon as practicable; the facility and site roads are constructed of hardcore/hard surfaced where possible; internal access roads will be cleaned and maintained on a regular basis using suitable road sweeping equipment; all vehicles entering and leaving the site are covered or fully enclosed; any complaints will be recorded in the site diary; an investigation will be undertaken and findings acted upon. If the operator and/or EA perceives that mud is an issue, then a management plan will be implemented as required by the permit.	Low
Local human population / presence. Closest residential/commercial receptor is 160 m to the south of the site, up-wind of the operational site.	Nuisance, loss of amenity.	Air transport then inhalation.	Medium	Medium	Medium	Local residents often sensitive to odour; permitted waste types are potentially odorous; leachate is stored above-ground.	Waste is delivered in accordance with approved acceptance procedures; vehicles delivering waste to the site are appropriately covered; the leachate holding tanks are proprietary HDPE fully enclosed tanks, management of landfill gas is via extraction and flaring; daily cover is applied over the waste materials; meteorological monitoring assesses wind speed and direction - where this identifies low wind speed towards receptors, actions may be taken; olfactory monitoring is carried out at least once per week at defined locations.	Low
Local human population / presence. Closest residential/commercial receptor is 160 m to the south of the site.	Nuisance, loss of amenity	Noise through the air and vibration through the ground.	Medium	High	High	Local residents often sensitive to noise and vibration; closest residents are 160 m to the south of the site; site plant can create levels of noise and vibration; the site is in an open rural area.	Qualitative noise monitoring will be carried out and effective noise reduction measures introduced and noted in the site diary; white noise reversing beepers utilised on site plant; idling plant engines are turned off; bird scaring devices are chosen based on their noise impact; any complaints will be recorded within the Site diary and an investigation will be undertaken and finding acted upon.	Medium
Local human population / presence. Closest residential/commercial receptor is 160 m to the south of the site.	Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity.	Air transport and over land.	Medium	Medium	Medium	Permitted wastes are biodegradable and have the potential to attract scavenging animals and birds, and pests; site is close to agricultural land and close to recreational areas and commercial/light industrial properties.	Daily cover will be applied to cover wastes at the end of the day; other wastes will be used to bury any biodegradable/putrescible materials during the days; waste is compacted; assessment is made monthly of flies apart from between May and October where it is weekly; regular monitoring of the site will be undertaken and any increase in incidents of scavenging birds reported to the Site Manager for action and recording in the site diary; use of bird scarers to control birds; use of pest control measures where required.	Low



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