Soil Treatment UK Limited

Environmental Risk Assessment

Soil Treatment UK Limited

Finmere Quarry and Landfill Site,
Banbury Road,
Finmere,
Oxfordshire,
MK18 4AJ

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1. Introduction

1.1. Westbury Environmental Limited have been instructed to prepare this Environmental Risk Assessment on behalf of Soil Treatment UK Limited (the Operator) to support an Environmental Permit application for the operation of a waste treatment facility located at Finmere Quarry and Landfill, Banbury Road, Finmere, Oxfordshire, MK18 4AJ. The site is defined as the area within the proposed permit boundary denoted by the green line, see Drawing No. 23/009c 001 Permit Boundary Plan V1 (Site).

1.2. The Environmental Risk Assessment has been prepared for an Environmental Permit Application. The Environmental Risk Assessment considers the risks associated with the proposed activities and waste operations included within the permit application.

1.3. The Environmental Permit Application proposes the treatment of hazardous and non-hazardous construction and demolition waste. Proposed activities include:

- Handpicking
- Screening
- Washing
- Crushing
- Storage
- Blending
- CLO production

1.4. It is proposed the Site will accept a combined maximum of 300,000 tonnes per annum of hazardous and non-hazardous waste and a maximum of 80,000 tonnes will be stored on Site at any one time.

1.5. See Application Report, Appendix 2 Technical Summary for detailed information on the proposed activities.

1.6. This report describes the Site setting, identifies nearby receptors, and assesses the risk of the waste operations to the local environment.

2. Site location and sensitive receptors

Location

2.1. The Site is located within Finmere Quarry and Landfill approximately 650m south-west of the village of Finmere. In terms of larger settlements, Buckingham is 5.6km east and Bicester 8.4km south. The approximate centre of the Site is located at National Grid reference SP 62771 32028.

2.2. The Site is approximately 8.3 hectares (ha) in size and is denoted by Drawing No. 23/009c 001 Permit Boundary Plan V1. The Site comprises of waste treatment and storage areas.

2.3. The Site is within the existing Finmere Quarry and Landfill. The quarry is divided into two sections: the northern and southern sections. The northern section of the quarry is currently operated under a landfill and waste recovery permit with an approved restoration scheme. The southern area of the quarry includes the waste operations proposed within this permit application.

2.4. This Environmental Risk Assessments relates to the area within the proposed permit boundary, where waste operations associated with the Environmental Permit application will take place.

2.5. Immediately adjacent to the western boundary is a railway line currently undergoing major construction works for the high-speed railway development HS2.

2.6. Finmere airfield is approximately 1km east of the Site boundary. The remaining surrounding land to the Site includes woodland and agricultural land.

Receptors

2.7. Sensitive receptors within 1km of the Site have been identified, see Drawing No. 23/009c 003 Sensitive Receptor Plan.

2.8. Table 2.1 shows the approximate distance and orientation (from the Site) of receptors located within a 1km radius of the Site.

Table 2.1 Sensitive Receptors

Ref No.	Receptor	Description	Direction from Site boundary	Approximate distance from Site boundary (m)
1	Deciduous woodland	Protected habitat	East	0
2	Deciduous woodland	Protected habitat	West	0
3	OPES MRS landfill site	Industrial	West	0
4	Railway line	Infrastructure	West	10
5	Lagoon	Surface water body	East	80
6	Bucks Concrete	Industrial	North	150
7	Boundary Farm	Agricultural buildings	Southeast	215
8	Foxley Fields Farms	Agricultural buildings	Northeast	220
9	Barleyfields Barn Farm	Agricultural buildings	South	410

10	Widmore Farm	Agricultural buildings	Northwest	420
11	Residential dwellings	Residential	Northeast	435
12	A421 Road	Infrastructure	North	460
13	A4421 Road	Infrastructure	Southeast	590
14	Gravel Farm	Agricultural buildings	Northeast	700
15	Banbury Road	Residential dwellings	Northeast	790
16	Finmere CE Primary School	School	Northeast	930

2.9. OPES MRS landfill site is within the northern section of the quarry and operates under a landfill permit. Operations associated with that section of the quarry are considered likely to produce more significant dust and noise than the activities proposed in this Environmental Permit application.

2.10. Immediately adjacent to the western boundary major construction works are being undertaken on the railway line for the high-speed railway development HS2. This is considered likely to produce significant noise and dust pollution exceeding that of the proposed Sites activities.

2.11. There is a large bund to the southeast of the permit boundary which will aid in protecting receptors such as Boundary Farm from potential impacts such as dust and noise.

3. Environmental Risk Assessment

Risk Estimation

3.1. Table 3.1 shows the matrix for estimating the magnitude of risk of a potential hazard from considering both the probability and consequence of a hazard occurring. The magnitude of risk determines what level of management is required in order to reduce the environmental impact and the probability of risk occurring.

Table 3.1 Estimating the Magnitude of Risk

Magnitude of Risk		Consequence			
		High	**Medium**	**Low**	**Negligible**
Probability	**High**	Very high	High	Medium/Low	Very low
	Medium	High	Medium	Low	Very low
	Low	High/Medium	Medium/Low	Low	Very low
	Negligible	High/Medium/Low	Medium/Low	Low	Negligible

3.2. Table 3.1 is a gross simplification that cannot represent the true complexity of risk, it has been used as a guide in preparing this risk assessment report.

3.3. A risk assessment of the potential hazards associated with the proposed operations that may cause harm to the environmental has been completed using the method shown in Table 3.1, see Table 3.2 Environmental Risk Assessment.

Key Considerations

3.4. The following aspects have been considered when completing this Environmental Risk Assessment:

Data and information

- Receptor
- Source / hazard
- Harm
- Pathway

Judgment

- Probability of exposure
- Consequences
- Magnitude of Risk

Action

- Justification for Magnitude
- Risk Management
- Residual Risk

Table 3.2 Environmental Risk Assessment

Data and Information				Judgment			Action (by permitting)		
Receptor	**Source**	**Harm**	**Pathway**	**Probability of Exposure**	**Consequence**	**Magnitude of Risk**	**Justification for Magnitude**	**Risk Management**	**Residual Risk**
Local human population, including, neighbouring construction / industrial workers and residential dwellings.	Releases of dust. Asbestos fibres	Harm to human health – respiratory irritation and illness i.e., lung cancer, mesothelioma, and asbestosis Nuisance – dust on cars, clothing etc.	Air transport or via physical contact then inhalation	Low	High	Medium	Incoming proposed waste types includes hazardous and non-hazardous. Construction and demolition waste and non-hazardous waste for CLO production. These wastes are to be stored outside. These wastes are likely to be dusty due to the nature of the waste and the fragmented particle sizes. Construction & demolition waste containing asbestos will be accepted and treated on Site. The main treatment process undertaken on Site is washing providing a wet process. This will significantly reduce dust emissions as	A number of mitigation measures are used to reduce the risk of dust emissions. Strict waste acceptance procedures are in place to ensure that excessively dusty loads are not accepted on Site. There is a large bund to the southeast of the permit boundary, this will act as a barrier between the Site and the Boundary Farm receptor. Waste contaminated with asbestos containing materials (ACM) will be accepted onto the Site. Site operatives will be required to wear PPE when handling ACM.	Low

							the product and filter cake will be wet. There is a low potential for exposure to staff when handling ACM -Personal Protective Equipment (PPE) reduces the risk of this exposure Further precautions will be taken when handling waste which contains asbestos fibres such as water sprays. The Site is surrounded by other major construction operations including the landfill activities in the north of the quarry and High-Speed Railway development (HS2). These will also cause significant amounts of dust.	Waste operations that have the potential to generate dust e.g., crushing, screening, and tipping will be subject to water sprays for dust suppression. The built in dust suppression bar on the crusher is used to reduce the potential for dust emissions from this plant Potentially dusty waste that has been crushed will continue to be stored outside but will be dampened regularly in dry, windy conditions. This reduces the amount of dust which could be suspended, and therefore the amount of dust which could reach nearby sensitive receptors.	
Surface water features, including a lagoon 80m	Releases of dust to the air Asbestos fibres	Water contamination	Air transport then deposition	Medium / low	Medium	Medium	Waste treatment operations that have the potential to generate dust e.g., screening,	In order to reduce the potential for dust emissions to cause a nuisance,	Low

east of the Site.							crushing and movement of waste will be carried out outside. The main treatment undertaken will be washing which will significantly reduce any dust emitted from this treatment due to it being a wet process. Dust emissions are likely to have dropped out of the atmosphere before reaching this sensitive receptor, due to their size and weight.	vehicles delivering and exporting waste loads will be sheeted. Methods of dust management are included in the Dust Management Plan, which is included in this permit application. The Dust Management Plan will form part of the EMS for the site and will be implemented through strict procedures available in the EMS.	

Local human population, Including neighbouring construction / industrial workers and residential dwellings. Deciduous woodland and the lagoon.	Litter	Nuisance, loss of amenity and harm to animal health	Litter escaping from the Site (windblown)	Low	Low	Low	Construction and demolition waste typically contains low amounts of litter. Road safety – local residents often sensitive to waste / litter being spread on roads. It is considered unlikely that litter will be present in the waste in such quantities as to lead to the load being rejected. In the event that there is an abnormally large presence of litter in the waste, the waste will be handled appropriately or rejected in accordance with the waste rejection procedure. The Site is surrounded by other major construction operations including the landfill activities in the north of	Control of litter is included in the Housekeeping Procedure within the EMS and is included on the inspection checklists. Incoming waste is handpicked to remove waste types that may generate litter. Handpicked waste will be stored within containers to prevent the escape of litter. Litter that has been handpicked from the waste will be disposed of appropriately. Inspection checklists will include litter checks that will be carried out on a regular basis to identify and remove any litter on the site.	Very low

							the quarry and High-Speed Railway development (HS2). These operations have the potential to cause litter pollution.		
	Waste and litter on local roads	Nuisance, loss of amenity, road traffic accidents	Vehicles entering and leaving the Site	Low	Medium	Medium	Mud tracked out on to local roads can cause safety issues. The Site is situated to the south of Finmere Quarry, the Sites access road around the quarry is approximately 1.5km meaning any mud on vehicle wheels will likely have fallen off by the time they reach the highway. The proposed permitted waste	Concrete surfacing of the site will enable effective cleaning with a road sweeper. Contravening waste will be stored within a container.	

							types have a low potential to produce litter. The Site is surrounded by other major construction operations including the landfill activities in the north of the quarry and High-Speed Railway development (HS2). Due to these other operations being within close proximity to the Site and all exiting onto the same round, it is considered waste and litter on local road could also be produced by the vehicles associated with their activities. The Site is within proximity of multiple farms who are likely to track mud out onto the local highway from farming activities.		
Local human population including	Odour	Nuisance, loss of amenity	Air transport then inhalation	Very Low	Low	Low	Local residents are often sensitive to	No putrescible waste types are accepted on to	Very low

neighbouring construction / industrial workers and residential dwellings.							odour. The proposed waste types are not putrescible and have low potential to emit odour.	the Site, as such it is unlikely that odour will be an issue. The implementation of a strict waste acceptance criteria will ensure that no putrescible waste types are accepted on to the Site. Good house keeping methods will be actively maintained to reduce risk of odour from the Site.	
Local human population including neighbouring construction / industrial workers and residential dwellings.	Noise and vibration	Nuisance, loss of amenity, loss of sleep	Noise through the air and vibration through the ground	Low	Medium	Low	Local residents are often sensitive to noise. The proposed waste activities have the potential to create significant noise emissions. The distance between the source of the noise and the sensitive receptors will reduce the impact. The Site is surrounded by other major	A number of mitigation measures will be in place to minimise noise. Such mitigation measures include not leaving plant idling and minimising drop heights as far as reasonably practicable. The Site is located within a quarry with a large bund to the southeast of the boundary. This will help contain any noise.	Low

							construction operations including the landfill activities in the north of the quarry and High-Speed Railway development (HS2). These will also cause significant amounts of noise.	A noise assessment has been complete for the proposed activity.	
Local human population including neighbouring construction / industrial workers and residential dwellings.	Scavenging animals and scavenging birds Pests (e.g., flies)	Harm to human health Nuisance and loss of amenity.	Air transport and over land.	Low	Medium	Low	Proposed waste types do not contain putrescible wase that is likely to attract animals. It is therefore unlikely that there will be an increase in the number of pests, scavenging animals, and birds at the Site.	The implementation of a strict waste acceptance criteria will ensure that no putrescible materials, that are attractive to scavenging species or pests, will be accepted on to the Site. The Site will be inspected regularly for evidence of infestations and the findings will be recorded on the inspection checklists. If any evidence is found, an appropriate specialist contractor shall be called in to manage /	Very low

								eradicate the problem.	
Soil Treatment UK Limited staff, local human population including neighbouring construction / industrial workers and residential dwellings	All on-site hazards: waste machinery and vehicles.	Bodily injury. Respiratory illness i.e., lung cancer, mesothelioma & asbestosis.	Direct physical contact with machinery or contaminated waste.	Medium	Medium	Medium	Proposed incoming waste types are primarily construction and demolition materials, which does not pose a significant risk to health in terms of irritation or injury from direct physical contact. There is a chance that proposed incoming waste types could pose a risk from inhalation of significant amounts of dust. There is a risk that inhalation could cause harm during the treatment and offloading process. Physical processing equipment on the Site could cause bodily injury if misused or if malfunctioning	Staff are required to wear PPE during the treatment activities e.g., gloves. Plant and equipment on the Site are regularly checked as part of the Site inspection regime. Any faults identified during these checks will be rectified by the Site Manager. The maintenance procedure within the EMS contains a list of plant / equipment and their servicing requirements. A record is kept when plant / equipment is serviced. Regularly servicing plant / equipment will identify and rectify issues before they potentially cause a malfunction.	Low

							It is considered that the proposed changes to the permit will not increase the risk of unauthorised access from the local population or livestock. However, there is potential for exposure to asbestos if there is unauthorised access to the Site. The equipment and machinery located on Site are secured outside of the operation / manned hours. Robust Site security measures will reduce the likelihood of trespassers encountering ACM. Asbestos will be stored in a lockable sealed container.		
Soil Treatment UK Limited staff, local human population	Arson and / or vandalism causing the release of polluting materials to	Respiratory irritation, illness, and nuisance to local population. Injury to staff, fire	Air transport of smoke. Spillages of contaminated firewater by	Very Low	Medium	Low	The proposed waste to be accepted at the Site is not considered to be combustible.	The implementation of a strict waste acceptance procedure will ensure that no	Very Low

including neighbouring construction / industrial workers and residential dwellings. Deciduous woodland and the lagoon.	air (smoke or fumes), water or land.	fighters or arsonists/vandals. Pollution of water or land.	direct run-off from the Site. Loss of containment of waste.				Ignition methods used in arson are unlikely to reach or sustain the required temperature to ignite the waste. The fire is unlikely to sustain itself without a significant amount of accelerant. There is a chance that handpicked waste could be combustible. A small amount of handpicked waste is stored appropriately on Site in containers. Fuel will be stored on the Site. The Site is manned during operational hours and secured outside these hours.	waste types other than the permitted waste types are accepted on to the Site. Any incidental combustible waste types within incoming loads will be handpicked from the load and stored in container(s). These containers act as a fire break and reduce the likelihood of a fire spreading and a fire occurring as a result of arson. The EMS contains a fire prevention procedure which includes information relating to minimising the risk of fire on the Site. The EMS contains a security procedure to ensure that the Site is kept secure to prevent unauthorised access.	

All surface water features.	Spillage of liquids, leachate from waste, contaminate rainwater run-off from waste e.g., containing suspended solids.	Acute effects: oxygen depletion, fish kill and algal blooms. Chronis effects: deterioration of water quality.	Direct run-off from the Site across ground surface, via run-off	Low	Medium	Medium	Proposed waste types do not include sludges or liquids. Fuel will be stored appropriately in a double skinned tanks on the Site	Implementation of strict waste acceptance criteria will ensure that only permitted waste types are accepted and stored on the Site. Unauthorised wastes will be rejected in accordance with the waste rejection procedure. Infrastructure associated with the drainage system, including the surfacing and drains, will be checked as part of the inspection checklists. Any defects / blockages in the drainage system will be rectified. Storage facilities for liquids will be maintained in accordance with the manufacturer's specification. Fuel stored on the Site will be stored in a double skinned tank. Accidental collisions are therefore unlikely	Low

								to damage the inner lining of the tank, which could pose a risk of the containment. The spillage and refuelling procedure within the EMS, implement the requirement for spill kits to be in place during refuelling or in the event of a spillage to clean the spill up. Staff will be trained on the spillage procedure to ensure they are aware of the use of spill kits and what to do in the event of a spill. Infrastructure associated with the drainage system, including the surfacing drains, will be checked as part of the inspection checklists. Any defects / blockages in the drainage system will be rectified.	

4. Conclusions

4.1. This Environmental Risk Assessment assesses the risks posed to the environment from the proposed operations.

4.2. These risks include releases of dust, litter, mud, odour, noise, scavenging animals, pests / vermin, flooding, contamination of surface / ground water and fire.

4.3. It is considered that there is a low potential for an increase in the risk to the local environment and human health from the proposed waste activities. Robust risk management measures will be implemented by way of EMS procedures to ensure that the identified risks are minimised.

4.4. The Site has impermeable surfacing and sealed drainage where waste is stored, and treatment operations are undertaken. There is also kerbing surrounding the impermeable surfacing which will ensure that surface water from the Site will not cause a risk to nearby sensitive receptors as it will be contained within the treatment and storage areas.

4.5. The remainder of the Site is hard standing which will allow for any surface water to percolate through the ground. There is no waste stored on hard standing therefore, only uncontrolled surface water will be on the hard standing.

4.6. Dust suppression on Site and infrastructure surrounding the Site including the bund to the southeast will ensure that dust emissions are unlikely to cause a nuisance to nearby receptors.

4.7. Because waste accepted on Site is non-combustible, the risk from fire is very low.

4.8. It is considered there is low risk posed by the proposed waste operations for the following sources / hazards and mitigation measures proposed will be sufficient:

- Litter
- Mud
- Odour
- Noise
- Scavenging animals
- Dust
- Pests / vermin
- Flooding
- Unauthorised access / arson / vandalism
- Contamination of surface water / ground water
- Protected sites

4.9. The EMS implemented on Site will be reviewed to ensure all the risk management actions identified in this Environmental Risk Assessment are implemented on Site.

Drawings

Drawing No. 23/009c 001	Permit Boundary Plan V1
Drawing No. 23/009c 003	Sensitive Receptor Plan V1