Soil Treatment UK Limited

Resource Efficiency and Climate Change Report

Soil Treatment UK Limited

Finmere Quarry and Landfill Site,
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Contents

1. Introduction

1.1. This Resource Efficiency and Climate Change report has been produced by Westbury Environmental Limited 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. This report outlines how Soil Treatment UK Limited will undertake operations in accordance with the Best Available Technique (BAT) document for energy efficiency and the Council Directive 2008/98/EC on waste.

1.3. This Resource Efficiency and Climate Change report provides information on:

- Measures for improving how efficient the Sites activities are.
- Changes to the energy from proposed activities.
- What raw materials and other substances will be used on Site.
- Waste production and avoidance.

Site location

1.4. The Site lies 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 to complete the approved restoration scheme for the quarry. The southern area of the quarry includes area where the proposed waste operations will be carried out.

1.5. 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.

1.6. 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. Improving Efficiency

2.1. The purpose of Best Available Techniques (BAT) is that the techniques selected to protect the environment should achieve an appropriate balance between environmental benefit and costs.

2.2. The following sections detail how the operator proposes to meet the applicable requirements of BAT or justification for deviation from these requirements.

Improving how energy efficient activities are

2.3. In order to improve how energy efficient activities are, the Operator implement an Environmental Management System (EMS) which contains procedures relating to the Site and its operations.

2.4. The reference document on Best Available Techniques for Energy Efficiency states:

"It can be seen that an energy efficient management system (ENEMS) for an IPPC installation should contain the following components:

a) Commitment of top management
b) Definition of an energy efficiency policy
c) Planning and establishing objectives and targets
d) Implementation and operation of procedures
e) Benchmarking
f) Checking and corrective action
g) Management review
h) Preparation of regular energy efficiency statement
i) Validation by certification body or external ENEMS verifier
j) Design consideration for end-of-life plant decommissioning
k) Development of energy-efficient technologies"

2.5. The Site implement an Environmental Policy, demonstrating commitment from senior management and directors on cleaner technologies and energy efficiency. The Environmental Policy is within the Environmental Management System (EMS).

2.6. The Environmental Policy commits to:

- Complying with all relevant regulatory requirements and legislation.
- Regularly reviewing and monitoring environmental performance.
- Keep up to date with new and innovative products and equipment.
- Continue to improve and reduce environmental impacts.
- Increase employee awareness.
- Improve resource efficiency including the use of water, energy, and raw materials.
- Minimise waste through commitment to reuse, recover or recycle where feasible.
- Work closely with environmental advisers and regulators to improve overall environmental performance.

2.7. The Environmental Policy is reviewed by senior management on an annual basis as part of the EMS review.

2.8. The Site also implement procedures to highlight responsibilities of all staff along with training, awareness, and competence procedures to ensure all staff have received appropriate training with logs to track training received.

2.9. As part of the EMS a decommissioning plan is also considered so if there was a Site closure, removing the remaining waste, plant, and equipment will be done in a way which doesn't cause any environmental harm.

2.10. Procedures relating to the maintenance of plant and equipment are also implemented on Site to ensure they are maintained and perform at the best possible function, which in turn will minimise energy consumption of the plant / equipment.

2.11. Implementing the requirements of the Environmental Policy and EMS will minimise energy, raw material consumption and emissions from the activities.

Energy use from proposed activities

2.12. Activities proposed to be undertaken on Site that impact energy consumption include, washing and crushing of waste.

2.13. The proposed activities will cause an increase in the amount of energy used by the Site due to the plant and equipment used. The Operator will minimise the additional energy consumption by ensuring activities are undertaken in an efficient way:

- Materials will not be double handled.
- Waste treatment processes will be located to minimise the movement of waste.
- Plant will not be left idling when not in use.
- Plant will be maintained to ensure efficient operation.

2.14. The Operator has offices on the Site and implements energy efficient lighting and heating systems to minimise energy consumption.

3. Raw Materials

3.1. The following raw materials will be used on Site:

- Water.
- Flocculants.

3.2. The wash plant operates in a closed loop system, treating water that's been used in the washing process to remove any contaminants. The treated water is then recirculated through the wash plant.

3.3. The reuse of water reduces the amount of wastewater generated.

3.4. The minimum amount of stabilising agents will be used to stabilise soil.

3.5. A list of raw materials used on Site is kept within the EMS. It is reviewed annually to determine whether there are more suitable materials which can be used instead, which includes considering substituting raw materials with waste where possible.

3.6. Recycles materials are sourced for the offices present on Site where possible.

4. Waste Production

4.1. The Council Directive 2008/98/EC on waste outlines the producer's responsibility on producing waste and ways in which the production of waste can be reduced.

4.2. The Operator implements the requirements of the Residues Management Plan (part of the EMS) which identifies residues that are produced from the waste operations. It also assesses the best environmental options for recovery or disposal for these residues.

4.3. The Residues Management Plan is reviewed annually to continually take into consideration ways to reduce residual waste production.

4.4. The Site operate strict waste acceptance procedures to minimise the generation of waste. If any waste is brought onto the Site that contains significant amounts of contravening wastes, they will be rejected in accordance with the waste rejection procedure.

4.5. Waste produced from the offices, present on the Site, is source separated and sent for recycling.

5. Climate Change Risk Assessment

5.1. This Climate Change Risk Assessment has been produced for the waste operations at the Site.

5.2. The risk screening score is site-specific and calculated based on the proposed timescale of operations, risk of flooding and source of water used on Site, as detailed in the Environment Agency guidance (.gov.uk) '*Adapting to Climate Change: Risk Assessment for your Environmental Permit'*, 3rd October 2019.

5.3. A worksheet containing river basin specific climate change information is used to complete the climate change risk assessment. This worksheet is provided by the Environment Agency to enable completion of a qualitative risk assessment of how the Site and operations may be impacted by climate change.

5.4. This Climate Change Risk Assessment considers:

- Measures taken to mitigate identified risk.
- Weather and climatic changes projected to occur between the present day and 2050.
- How changes to average climate conditions may impact on operations (e.g., extreme rainfall and waterlogging).
- Critical thresholds, where a 'tipping point' is reached, beyond which Site processes cannot operate safely.
- Where hazards may combine to cause more impacts.

Risk Assessment Scoring

5.5. The risk assessment scoring in the Anglian River Basin Worksheet is based on the table in Appendix A from the Environment Agency guidance. Columns B (likelihood) and C (severity) in the Worksheet are determined using the scoring below.

5.6. Risk Assessment scoring is obtained by:

- Assess the likelihood of the impact using the definitions in Appendix A Likelihood and Severity Definitions.
- Assess the severity of the impact using the definitions in Appendix A Likelihood and Severity Definitions.
- Multiply the likelihood and the severity scores to obtain the risk rating.
- Where the risk rating is five or more, then mitigating measures are required to be proposed. The risk rating is then recalculated based on the proposed mitigation measures to obtain a residual risk rating.

5.7. The Anglian Basin Worksheet has been completed, see Appendix B Climate Change Risk Assessment Worksheet.

5.8. For the purposes the 'Adapting to Climate Change: Risk Assessment for your Environmental Permit' guidance, an Adaptation Plan will not be prepared for further mitigation measures if the current mitigation measures outlined reduce the risk assessment scoring to 4 or below.

6. Appendix A Likelihood and Severity Definitions

Table 1 Likelihood and Severity of Impacts Scoring

	Severe impact (score = 4)	Medium impact (score = 3)	Mild impact (score = 2)	Minor impact (score = 1)
Highly likely (score = 4)	16	12	8	4
Likely (score = 3)	12	9	6	3
Low likelihood (score = 2)	8	6	4	2
Unlikely (score = 1)	4	3	2	1

Table 2 Severity of Impact Definitions

Severity of Impact	Definition	Score
Severe	Short-term, acute impact to operations resulting in permanent compliance breach(es)	4
Medium	Short-term, acute impact to operations resulting in multiple temporary compliance breaches	3
Mild	Short-term, acute impact to operations resulting in single temporary compliance breach	2
Minor	Short or long-term impact resulting in additional measures for compliance	1

Table 3 Likelihood of Impact Definitions

Likelihood of Impact	Definition	Score
Highly likely	Event appears very likely in the short term and almost inevitable over the long term, or there is evidence of the event already happening	4
Likely	It is probable that an event will occur, or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term	3
Low likelihood	Circumstances are such that an event could occur, but it is not certain even in the long term that an event would occur, and it is less likely in the short term	2
Unlikely	Circumstances are such that it is improbable the event would occur even in the long term	1

7. Appendix B Climate Change Risk Assessment Worksheet

Anglian River Basin district: climate change risk assessment worksheet

Name: Soil Treatment UK Limited

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Risk Assessment worksheet for the 2050s

Potential changing climate variable	**A** **Impact**	**B** **Likelihood**	**C** **Severity**	**D** **Risk** (B x C)	**E** **Mitigation** (what will you do to mitigate this risk)	**F** **Likelihood** (after mitigation)	**G** **Severity** (after mitigation)	**H** **Residual risk** (F x G)
1. Summer daily maximum temperature may be around 6°C higher compared to average summer temperatures now.	Potential for increased dust generation. However, mitigation measures have been devised to help alleviate the potential impacts of increased dust emissions.	3	3	6	The Site implement the requirements of a Dust Management Plan	2	2	4
2. Winter daily maximum temperature could be 4°C more than the current average, with the potential for more extreme temperatures, both warmer and colder than present	Lower winter temperatures could result in an increased risk of pipes (or similar) freezing.	2	1	2	N/A	N/A	N/A	N/A

Potential changing climate variable	**A** **Impact**	**B** **Likelihood**	**C** **Severity**	**D** **Risk** (B x C)	**E** **Mitigation** (what will you do to mitigate this risk)	**F** **Likelihood** (after mitigation)	**G** **Severity** (after mitigation)	**H** **Residual risk** (F x G)
3. The biggest rainfall events are up to 20% more intense than current extremes (peak rainfall intensity)	The Site is located within Flood Zone 1, therefore, is at very low risk of flooding. There is a medium risk of flooding from surface water courses reported for the Site	2	3	5	The Site implement an Environmental Management System which contains an Accident Management Plan and Flood Management Plan in place. Drainage systems are inspected and maintained on Site to ensure they are not becoming overwhelmed. Suitable measures are in place for the management of anticipated surface flood waters.	2	2	4

Potential changing climate variable	**A** **Impact**	**B** **Likelihood**	**C** **Severity**	**D** **Risk** (B x C)	**E** **Mitigation** (what will you do to mitigate this risk)	**F** **Likelihood** (after mitigation)	**G** **Severity** (after mitigation)	**H** **Residual risk** (F x G)
4. Average winter rainfall may increase by 29% on today's averages.	The Site is located within Flood Zone 1, therefore, is at very low risk of flooding. There is a medium risk of flooding from surface water courses reported for the Site	2	3	5	The Site implement an Environmental Management System which contains an Accident Management Plan and Flood Management Plan in place. Suppliers will be notified of the reduced or ceased waste acceptance. Off take facilities and customers will also be notified. In the event of the Site's operations being affected by the loss of the main transport routes, alternative routes and hauliers will be used.	2	2	4
5. Sea level could be as much as 0.6m higher compared to today's level *.	There is very low risk of flooding from seas.	1	2	3	N/A	N/A	N/A	N/A

Potential changing climate variable	**A** **Impact**	**B** **Likelihood**	**C** **Severity**	**D** **Risk** (B x C)	**E** **Mitigation** (what will you do to mitigate this risk)	**F** **Likelihood** (after mitigation)	**G** **Severity** (after mitigation)	**H** **Residual risk** (F x G)
6. Drier summers, potentially up to 34% less rain than now.	Potential for increased dust generation. However, mitigation measures have been devised to help alleviate the potential impacts of increased dust emissions.	3	3	6	The Site implement the requirements of a Dust Management Plan	2	2	4
7. At its peak, the flow in watercourses could be 30% more than now, and at its lowest it could be 65% less than now.	The Site is located within Flood Zone 1, therefore, is at very low risk of flooding and a medium risk of flooding from surface water courses reported for the Site. The Site is fed by mains water.	2	3	4	N/A	N/A	N/A	N/A

8. Conclusions

8.1. This climate change risk assessment has identified that there is a potential risk of flooding to the Site from increased levels of precipitation.

8.2. This Climate Change Risk Assessment has identified that there is a potential risk of increased dust emissions to the Site from drier summers.

8.3. The Climate Change Risk Assessment has identified that the proposed mitigation measures adequately reduce all identified risks.