

Berkswell Quarry

Environmental Permit Variation Application

Gas Screening Report

H.D Ricketts Limited

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Prepared on Behalf of Tetra Tech Environment Planning Transport Limited.

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1.0 INTRODUCTION

1.1 REPORT CONTEXT

- 1.1.1 This document has been prepared by Tetra Tech on behalf of the Operator, H.D Ricketts Limited (H.D Ricketts) to support an environmental permit application for Berkswell Quarry (the site) at Cornets End Lane, Meriden, Warwickshire, CV7 7LH.
- 1.1.2 H.D Ricketts currently hold a bespoke environmental permit (reference EPR/KB3203MT) to allow the importation of inert waste to infill the quarry void following mineral extraction at the site and restore the site to create agricultural land and broadleaf woodland.
- 1.1.3 H.D Ricketts seek to vary the Environmental Permit to extend the permit boundary into the extension area, located to the southeast of the southern section of the site and the northwest of the northern section (as shown on Drawing Number BER/B031730/PER/02). Subsequently, H.D Ricketts seek to increase the quantity of waste permitted from 1,576,500 tonnes to 3,376,500 tonnes which will accommodate the extension areas, an increase of 1,800,000 tonnes (1 million m³).
- 1.1.4 In addition to the extension, Ricketts seek to add the following waste codes to the environmental permit: -
- 19 12 09 – Minerals (for example sand, stones); and,
 - 19 12 12 – Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11.
- 1.1.5 The aim of this document is to assess the potential risk of the proposed extension with regards to gas. As there is no previous qualitative assessment for the site, this document considers both the existing and proposed permit areas.
- 1.1.6 The potential source of gas, potential pathways through the geosphere and atmosphere by which gas can migrate and the potential receptors are identified.
- 1.1.7 The site and the proposed extension will only accept wastes that are strictly inert as classified under the Landfill Directive (1999/31/EC) and Council Decision (2003/33/EC) of 19th December 2002 'establishing criteria and procedures for the acceptance of waste landfills.'

1.1.8 Consequently, a quantitative gas risk assessment (for example using the Environment Agency's (EA) approved GasSim software is not considered appropriate and has not been used. However, this qualitative gas risk assessment uses a number of sources of guidance, which include: -

- Environment Agency (2007), 'Potential Gas Production From Landfilling Of Inorganic Wastes', Report reference SC030144/SR, March 2007;
- Environment Agency (2007), 'Investigation And Quantification Of Gas Produced From Landfilling Of Inorganic Wastes' Report reference P1-516/2b, August 2007;
- Environment Agency, Landfill Technical Guidance 03 (LFTGN03) 'Guidance on the Management of Landfill Gas', September 2004; and,
- Environment Agency 'Landfill operators: environmental permits' guidance, February 2022.

2.0 SITE DESCRIPTION

2.1 SITE SETTING

- 2.1.1 The site is located approximately 4km from the village of Balsall in the West Midlands and is centred at approximate National Grid Reference (NGR) SP 22909 80758 however H.D Ricketts are seeking to vary the environmental permit boundary to include an area of land to the northwest of the site (NGR SP 22420 80934) and the southeast of the site (NGR SP 23115 80186) as shown on Drawing Number BER/B031730/PER/02.
- 2.1.2 Access to the site will be achieved via Cornets End Lane which is located to the north of the site. The immediate surroundings of the proposed extension area largely comprise agricultural land with an area of deciduous woodland (Coronation Spinney) adjacent to the south boundary and woodland located approximately 210m south (Sixteen Acre Wood) of the proposed extension area. The nearest residential dwelling is Park Farm House, located approximately 120m east of the proposed extension area.
- 2.1.3 Further details regarding the environmental setting of the site are provided in the Environmental Setting and Site Design (ESSD) report that has been prepared to support this application. A copy of the ESSD is provided as Appendix D of the Environmental Permit Application.

3.0 CONCEPTUAL GAS MODEL

3.0.1 The source, pathway, receptor approach has been used to derive a conceptual model showing the proposed engineering arrangements and to assess the potential risks of gas from the infilling at the site.

3.1 SOURCE

3.1.1 The main potential source for this gas risk assessment is the is the permanent deposit of waste to land at the site. In accordance with the current environmental permit, the site is only permitted to accept inert waste which is defined in Article 2 of the Landfill Directive 1999/31/EC as follows: -

'Inert waste' means waste that does not undergo any significant physical, chemical, or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to human health. The total leachability and pollutant content and the ecotoxicity of its leachate are insignificant and do not endanger the quality of any surface water and/or groundwater.

3.1.2 Table 1 lists those wastes that may be accepted at the site which do not require Waste Acceptance Criteria (WAC) testing under Council Decision (2003/33/EC), provided that they are inert and from a single source only (mixed loads from more than one site cannot be accepted without testing).

Table 1: Permitted Waste Types

EWC Code	Description	Restriction
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)	
17 01	Concrete, bricks, tiles and ceramics	
17 01 01	Concrete	Selected C&D waste only
17 01 02	Bricks	Selected C&D waste only
17 01 03	Tiles and ceramics	Selected C&D waste only
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	Selected C&D waste only
17 05	Soil (including excavated soil from contaminated sites), stones and dredging spoil	
17 05 04	Soil and stones other than those mentioned in 17 05 03	Excluding topsoil, peat; excluding soils and stones from contaminated sites.
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS	
20 02	Garden and park waste (including cemetery waste)	
20 02 02	Soil and stones	Only from garden and parks waste; excluding topsoil, peat.

3.1.3 In addition to the wastes that are listed in Table 1, H.D Ricketts propose to accept the waste code listed in Table 2 below and will be subject to WAC testing as detailed in the Operating Techniques (Appendix B of the Environmental Permit Application).

Table 2: Proposed Waste Types that Will Require WAC Testing

EWC Code	Description	Restriction
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTEWATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE	
19 12	Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified	
19 12 09	Minerals only	Wastes from the treatment of waste aggregates that are otherwise naturally occurring minerals. Does not include fines from treatment of any non-hazardous waste or gypsum from recovered plasterboard.
19 12 12	Other wastes from mechanical treatment of wastes other than those mentioned in 19 12 12	Restricted to crushed bricks, tiles, concrete and ceramics only. Metal from reinforced concrete must be removed. Does not include fines from treatment of any non-hazardous waste or gypsum from recovered plasterboard.

3.1.4 These waste codes will solely derive from the aggregate recycling facility that's located to the north of Berkswell Quarry at NGR SP 22920 80890. The aggregate recycling facility is regulated under a separate environmental permit (reference EPR/WE3588AA and EAWML 120088) which allows the treatment of waste to produce soil, soil substitutes and aggregates in accordance with the standard rules set SR2010 No12. This permit is currently in the name of CEMEX UK Materials Limited; however, a permit transfer application was submitted to the EA in October 2021 to transfer this permit to H.D Ricketts Limited.

3.1.5 Although the aggregate recycling facility is permitted to accept a variety of waste types (as specified under standard rules SR2010 No12), Ricketts will only accept specific wastes that are classed as inert in accordance with the Landfill Directive (1999/31/EC) and Council Decision (2003/33/EC) of 19 December 2002 'establishing criteria and procedures for the acceptance of waste landfills'. This will include waste concrete, tiles and ceramics that are characterised under the following waste codes: -

- 17 01 01 – Concrete;
- 17 01 02 – Bricks;
- 17 01 03 – Tiles and Ceramics; and,

- 17 01 07 – Mixtures of concrete, bricks, tiles and ceramics and other than those mentioned in 17 01 06.

3.1.6 In addition to the above, Ricketts will also accept soil and stones that are characterised under the following waste codes: -

- 17 05 04 – Soil and stones other than those mentioned in 17 05 03; and,
- 20 02 02 – Soil and stones.

3.1.7 In accordance with the Council Decision 2003/33/EC, no topsoil or peat will be accepted under the above waste codes and no soil and stones will be accepted from contaminated sites.

3.1.8 Based on the nature of the wastes that will be accepted and treated at the aggregate recycling facility, it's considered that the resultant 19 12 wastes will meet the descriptions detailed in Table 2.

3.1.9 Gas is produced by the biological degradation of organic components. Microbial processes degrade organic matter in the absence of oxygen and produce methane and carbon dioxide. In terms of gas generation at the site, no organic matter will be present, and it is therefore considered that the inert waste materials deposited at the site will not give rise to significant quantities of gas. The potential for the generation of gas is therefore considered to be negligible.

3.1.10 The site will have strict waste acceptance procedures in place to ensure that only inert wastes are accepted at the site. This will minimise the risk of acceptance of non-conforming wastes, such as biodegradable wastes, which would have the potential to cause the generation of gas.

3.1.11 Taking into account the above, it is considered unlikely that there will be any source of significant gas generation at the proposed extension area.

3.2 PATHWAYS

3.2.1 A number of potential pathways exist which would provide a link between the sensitive receptors and gas generated within the deposit for recovery site. The EA's guidance document LFTGN03 entitled 'Guidance on the Management of Landfill Gas' (September 2004) identifies the following generic potential pathways:

-

- Direct release to atmosphere;
- Sub-surface migration, through the ground or along service ducts or pipelines;
- Indirect release to atmosphere e.g. from sub-surface gas migration; and,

- Direct release of combustion products to atmosphere e.g. from flares/engines.

3.2.2 The primary pathway for gas generated within the site would be vertically to atmosphere through unrestored areas of waste. Pathways that are considered to be less preferential would be vertically through the restored areas of the site or laterally through the boundary engineering.

3.2.3 The EA's Report 'Investigation and Quantification of Gas Produced from Landfilling of Inorganic Wastes' (August 2007) considers the potential for gas to migrate from an inorganic or low carbon site. The report acknowledges that inorganic waste does not generate substantial quantities of gas, and that there will generally be an insufficient pressure differential to drive the gas through low permeability waste. Thus, as there will be only inert wastes accepted and deposited, it is considered that there will be an insufficient driving pressure for the gas to create a viable pathway.

3.3 RECEPTORS

3.3.1 LFTGN 03 'Guidance on the Management of Landfill Gas' details the process of prioritising receptors which is a qualitative process based on consideration of the estimated impact, the sensitivity of the receptor and the likelihood of exposure.

3.3.2 The details of all receptors within 1km of the site are summarised in Table 3 below and are shown on Drawing Number BER/B031730/REC/02.

Table 3: Location of Potential Receptors within 1km of the Site

ID	Receptor	Direction from Operational Area	Minimum Distance from permit boundary (m)
Designated ecological habitats e.g. Ramsars, SAC, SPA, SSSI			
1	Berkswell Marsh	SW	85
2	River Blythe	W	775
3	Marsh Lane Nature Reserve	W	635
Local Wildlife Sites (LWS)			
4	Berkswell Marsh Meadow	SW	Adjacent
5	Merciole Mill Pool	S/W	Adjacent
6	Patrick Farm Meadow	W	695
Migratory route for protected species (as identified in the nature and heritage screen EPR/ EPR/KB3203MT)			
7	Brown Trout	W	420
8	European eel	W	420
9	European eel migratory route	W	420
10	Bullhead	W	420
11	'Code 2' species	W	420
Commercial and Industrial Premises			
12	Freeland Horticulture	-	On Site
13	L Lynch Plant Hire and Haulage	N	Adjacent
14	G R Mowing and Farm & Industrial Cladding	N	175

15	Kingswood Homes (Property Developer)	NW	575
16	Touchwood Building Contractors & Regional Driving Assessment Centre	NW	740
17	Commercial and Industrial Properties North of Cornets End Ln	N	50
18	Farm & Industrial Cladding Ltd	N	140
19	Industrial and Commercial premises on Marsh Lane	W	565
20	Industrial and Commercial premises on the A452	S	635
21	Meriden Road Industrial and Commercial premises	E	825
22	Keeper Cottage Business Park	SE	525
Listed Buildings			
23	Hornbrook Farmhouse (Grade II)	N	200
24	Barn at Hornbrook Farm (Grade II)	N	190
25	Mercote Mill Farmhouse (Grade II)	S	80
26	Holloway Farmhouse (Grade II)	E	720
27	Packhorse Bridge over River Blythe (Grade II*)	SW	950
Domestic Dwellings			
28	Park Farm House	E	Adjacent
29	Marcote Cottage	S	250
30	Marsh Cottage	SW	270
31	Keepers Cottage Property	E	515
32	Bibury House	SW	590
33	Properties on Bradnocks Marsh Lane	SW	700
34	Properties Southeast of site (off Home Farm)	SE	790
35	Properties South of A452	S	760
36	Properties off Marsh Lane	W	745
37	Property off Cornets End Ln	E	305
Highway or Major Roads			
38	Cornets End Lane	N	Adjacent
39	Kenilworth Road (A452)	W	310
Railways Infrastructure			
40	Railway Line	SW	745
Priority Habitats			
41	Priority Habitat Inventory – Deciduous Woodland Cornets End Ln	W	Within site boundary
42	Priority Habitat Inventory – Deciduous Woodland (Coronation Spinney)	S	Within site boundary
43	Priority Habitat Inventory – Deciduous Woodland (Mill Covert)	W	Adjacent
44	Priority Habitat Inventory – Deciduous Woodland	W	Adjacent
45	Priority Habitat Inventory – Deciduous Woodland (Sixteen Acre Wood)	S	Adjacent
46	Priority Habitat Inventory – Deciduous Woodland	E	30
47	Priority Habitat Inventory – Deciduous Woodland (Cornets End Ln)	N	60
48	Priority Habitat Inventory – Deciduous Woodland (The Bogs)	SE	2240
49	Priority Habitat Inventory – Deciduous Woodland (N of Hornbrook Farm)	N	398
50	Priority Habitat Inventory – Deciduous Woodland (N Warwickshire Golf Course)	N	595
51	Priority Habitat Inventory – Deciduous Woodland (Kenilworth Rd))	S	640
52	Priority Habitat Inventory – Deciduous Woodland (Meriden Rd W)	NW	736
53	Priority Habitat Inventory – Deciduous Woodland	E	350
54	Priority Habitat Inventory – Deciduous Woodland (Garden Wood)	SE	790
55	Priority Habitat Inventory – Deciduous Woodland (Corry Farm)	W	535
56	Priority Habitat Inventory – Deciduous Woodland (Marsh Ln)	W	911
57	Priority Habitat Inventory – Deciduous Woodland (NW)	NW	700
Ancient Woodland			
58	Ancient Replanted Woodland	S	Adjacent
59	Ancient Replanted Woodland	E	385
60	Ancient and Semi-Natural Woodland (Garden Wood)	SE	730

61	Ancient and Semi-Natural Woodland	W	995
62	Ancient and Semi-Natural Woodland (The Somers)	N	950
Sensitive Land Uses e.g. Farmland, allotments, commercial fish farms			
63	Park Farm	E	Adjacent
64	Mercote Mill Farm	S	70
65	Hornbrook Farm	N	155
66	Cornets End Farm	NE	165
67	Marsh Farm	W	320
68	Corry Farm	W	550
69	Patrick Farm	NW	755
70	Holloway Farm	E	735
Nearest Surface Water Features e.g. Rivers and Streams			
71	Ponds on existing quarry site	-	Within boundary
72	Stream	S	Adjacent
73	Stream	NW	Adjacent
74	Stream	SW	95
75	Ponds to the east of the River Blythe	W	650
76	River Blythe	W	920
77	Ponds	N	370
78	A452 Roundabout Ponds	N	605
79	Hampton Lane Ponds	N	785
80	Stream	NE	380
81	Cornets End Ln Stream	N	100
82	Ponds	E	110
83	Ponds off Marsh Lane	W	615
Groundwater (sensitivity)			
According to the Multi Agency Geographic Information for the Countryside (MAGIC) website, the site is not located within a groundwater sources protection zone. However, the site is located over a Secondary A (bedrock) and Secondary B (superficial) aquifer. The superficial deposits comprise sand and gravel which will be removed as part of the mineral extraction activities that's authorised under planning permission.			

3.4 CURRENT MONITORING

- 3.4.1 Gas is currently monitored on a monthly basis at 12 boreholes (as shown on Drawing Number BER/B031730/BH/01).
- 3.4.2 A copy of the gas monitoring data for these boreholes is provided in Appendix A of this report.
- 3.4.3 The monitoring data in Appendix A indicates that the background concentrations of methane are negligible in all of the boreholes. The highest level being 0.2% v/v which was recorded across all of the boreholes.
- 3.4.4 The levels of carbon dioxide range between 0.0% v/v to 3.6% v/v (recorded at borehole GW03 in July 2018), with an overall average of 0.55% v/v.
- 3.4.5 Concentrations of oxygen recorded during the monitoring period were at or close to normal atmospheric levels.

3.5 ENVIRONMENTAL ASSESSMENT LEVELS (EALS)

3.5.1 For the sub-surface migration of gas, Technical Guidance Note LFTGN03 'Guidance on the Management of Landfill Gas' considers that an appropriate environmental benchmark for methane and carbon dioxide is 1% and 1.5% by volume above background respectively.

3.5.2 In terms of compliance levels for carbon dioxide, industry guidance document 'Perimeter soil gas emissions criteria and associated management' (January 2011) states: -

'Carbon dioxide is a poor choice of gas to regulate emissions from landfills because there are alternative sources in the sub-surface. Because emission-based regulation of a gas generated naturally in the environment at concentrations 0 -20% is not logical, carbon dioxide should not be used for regulating the sub-surface strata outside a landfill unless there is a site-specific high-risk receptor nearby, such as an underground confined space....'

'An alternative to regulating on compliance limits is to regulate on the reaction to exceeding a carbon dioxide action level'.

3.5.3 This is also addressed in the EA's Position Statement 'Industry code of practice on perimeter soil gas' (August 2011) which states: -

'We will require operators to set action levels as part of their gas management plan and to monitor perimeter boreholes and assess carbon dioxide concentrations against the action level to prompt investigatory action and inform regular reviews of the conceptual model'.

3.5.4 The above document considers that for background Carbon Dioxide concentrations between 0 to 20% by volume, it is appropriate in this circumstance to set limits in accordance with the ICoP and therefore Carbon Dioxide action levels have been proposed based on monitoring data obtained to date. The site specific EALs for methane and carbon dioxide are shown in Table 4 below.

3.5.5 The industry guidance document 'Perimeter soil gas emissions criteria and associated management' (January 2011) states for:-

- For every well the action level will be 1% carbon dioxide above the highest carbon dioxide concentration if the highest carbon dioxide concentration is less than 5%;
- For every well the action level will be 2% carbon dioxide above the highest carbon dioxide concentration if the highest carbon dioxide concentration is between 5 - 10%; and,

- For every well the action level will be 3% carbon dioxide above the highest carbon dioxide concentration if the highest carbon dioxide concentration is between 10 - 20%.

3.5.6 This means that for each borehole an action level should be calculated separately as follows: -

Table 4: Site Specific EALs for Methane and Carbon Dioxide

Monitoring Location	Parameter	Proposed Compliance Level (v/v%)	Monitoring Frequency	Proposed Action Level (v/v%)
GW01, GW02, GW03, GW04, GW05, GW06, GW08, GW09Z1, GW09Z2, GW10, GW11 and GW16	Methane	1.0	Monthly	0.5
GW01	Carbon Dioxide	None	Monthly	2.4
GW02				3.7
GW03				4.6
GW04				2.7
GW05				1.2
GW06				1.5
GW08				1.8
GW09Z1				1.6
GW09Z2				1.5
GW10				3.2
GW11				4.0
GW16				1.7

4.0 GAS ASSESSMENT

- 4.0.1 LFTGN03 provides guidance on the level of risk assessment that is considered appropriate for different types of sites and states that Tier 1 Hazard Identification and Risk Screening should be sufficient to deal with most of the risks from inert sites. However, this is also dependent on the level of risk and uncertainty specific to the site.
- 4.0.2 The infilling at the site is predicted to generate negligible quantities of gas due to the inert nature of the waste accepted and deposited at the site. Furthermore, the site's detailed waste acceptance procedures will ensure that only inert waste is deposited at the site, thus removing any uncertainty with respect to the potential for the deposition of non-inert wastes.
- 4.0.3 Taking these factors into consideration, it is concluded that the overall level of risk associated with the site is low. A qualitative risk assessment is therefore considered appropriate in order to determine the level of risk from gas at the site.

4.1 ACCIDENTS AND THEIR CONSEQUENCES

4.1.1 The EA's guidance (LFTGN03) requires a number of accident and failure scenarios to be assessed in order to quantify the impact of given events. The reliability of gas control measures and site engineering should be assessed in the risk assessment and the main hazards that could lead to accidental emissions should be identified. LFTGN03 provides examples of general categories of accidents that may potentially affect gas control: -

- Loss of containment e.g. leakage, liner failure, spillage;
- Loss of collection and/or treatment capability e.g. failure of pipework, control system, etc;
- Explosions and fires e.g. deep seated landfill fire; and,
- Failure of leachate extraction system and the effect on gas extraction.

4.1.2 These scenarios have been assessed as part of the gas risk screening process.

4.2 QUALITATIVE GAS RISK ASSESSMENT

4.2.1 The potential hazards that exist from gas are: -

- Toxicity (acute and chronic);
- Ecotoxicity;

- Fire and explosion;
- Asphyxiation; and,
- Odour.

4.2.2 The trace components of gas pose an odour and toxicity risk whilst the bulk gases pose a risk of explosion and asphyxiation, although carbon dioxide is also toxic and should be considered in the assessment of toxicity. Explosion and asphyxiation risk is generally related to sub-surface migration and accumulations in enclosed spaces, such as residential or commercial properties, or underground services. EA document LFTGN03 states that whilst this is more difficult to quantify, for the risk screening stage, the impact assessment should be based on: -

- The presence of potential pathways and site specific receptors; and,
- A qualitative assessment of the severity of the consequences.

4.2.3 The qualitative assessment for each receptor is provided in Table 5.

Table 5: Qualitative Risk Assessment

Receptor	Hazard	Sensitivity of Receptor	Likelihood of Exposure
Occupiers of domestic dwellings and farmhouses listed in Table 3.	Odour, toxicity, asphyxiation	High	Very Unlikely
Workforce and customers in commercial and industrial properties listed in Table 3.	Odour, toxicity, asphyxiation	High	Very Unlikely
Priority Habitats, Designated Ecological Sites and agricultural land listed in Table 3.	Eco-toxicity	Low	Very Unlikely

4.2.4 Table 6 details the qualitative risk assessment which has been undertaken for the accident and failure scenarios using the risk assessment process and scoring system set out within EA document LFTGN03. Table 7 provides a justification of the 'likelihood' scores for each of the accident or failure scenarios set out in Table 6.

Table 6: Qualitative Risk Assessment for Accident and Failure Scenarios

Accident/Failure Scenario	Likelihood	Severity of Consequence	Score	Magnitude of Risk
Loss of containment (e.g. leakage, spillage)	Extremely unlikely (1)	Minor (1)	1	Insignificant
Explosions and fires	Very unlikely (2)	Significant (3)	6	Insignificant

Biodegradable Waste Input	Unlikely (3)	Significant (3)	9	Acceptable
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Table 7: Justification for Assigned ‘Likelihood’ Scores

Accident/Failure Scenario	Justification for ‘likelihood’ score
Loss of containment (e.g. leakage, liner failure, spillage)	The site will be engineered to a high standard and the containment system will be subject to Construction Quality Assurance (CQA) supervision and testing. It is therefore extremely unlikely that the containment system will fail or leak.
Explosions and fires	The proposed waste types are inert in nature and therefore will not be combustible or explosive. Waste acceptance procedures will ensure that potentially flammable or explosive materials are not accepted at the site.
Biodegradable Waste Input	<p>The proposed waste types are inert in nature. However, all wastes entering the site will be subject to detailed waste acceptance procedures. Wastes will only be accepted onto the site if they comply with the list of wastes included in the permit. Basic characterisation will ensure that the waste is suitable for acceptance at the regulated facility however if there is uncertainty regarding the acceptance of wastes at the site, testing may be required.</p> <p>No wastes will be accepted onto the site if there is uncertainty as to its source, conformance with the conditions in the permit and/or its suitability for the intended use. Consequently, it is considered unlikely that biodegradable waste will be accepted at the site.</p>

- 4.2.5 The results of the qualitative risk assessment show that the most significant accident /failure scenario is the acceptance of biodegradable waste into the site which would arise from a failure in the operator’s waste acceptance procedures.
- 4.2.6 As set out in the Operating Techniques (Appendix B of the Environmental Permit Application), there will be strict waste acceptance procedures in place to minimise the risk of non-compliant wastes being accepted. All site staff will be made aware of the procedures and the requirements of the company Environmental Management System. Furthermore, the Operating Techniques details the measures to be taken in the event that unauthorised waste is identified within a load.
- 4.2.7 As such, it is considered unlikely that biodegradable waste will be deposited within the deposit for recovery site.

5.0 GAS MANAGEMENT AND MONITORING

5.1 GAS MANAGEMENT

5.1.1 The risk assessment in Section 4 concludes that negligible quantities of gas are predicted to be generated from the proposed extension at the site. As such, it's considered that active gas management is not required for the site.

5.2 GAS MONITORING

5.2.1 Gas monitoring would be carried out in accordance with the procedures set out in the EA's Guidance document LFTGN03 'Guidance on the Management of Landfill Gas'. The proposed monitoring programme is detailed in the Environmental Management & Monitoring Plan that's provided as Appendix G of the Environmental Permit Application.

6.0 CONCLUSION

- 6.0.1 The proposed waste types will be inert in nature and will not give rise to significant quantities of gas. The negligible quantities of gas generated are unlikely to be under significant pressure which will minimise the likelihood of gas migration. Furthermore, the site will be engineered with a low permeability clay side slope and basal liner, which will further reduce the risk of lateral gas migration. The risk to nearby sensitive receptors associated with the generation and migration of gas is therefore considered to be low.
- 6.0.2 Background gas monitoring has been undertaken at the site since January 2018 and a copy of the monitoring data is provided as Appendix A. The results of the monitoring show that negligible concentrations of methane and low to slightly elevated background concentrations of carbon dioxide in one location are recorded within the perimeter monitoring boreholes. These results have been used to set both Action Levels and Compliance Levels for the site.
- 6.0.3 Detailed waste acceptance criteria will be used to ensure that only inert wastes are accepted at the site. This will prevent unauthorised wastes being accepted. The absence of biodegradable material within the deposit for recovery site shall ensure that significant quantities of gas are not produced within the site from waste and the risk to receptors remains low. Furthermore, this shall ensure that odour nuisance, vegetation stress and global atmospheric damage are also avoided.
- 6.0.4 This Gas Screening Report has determined that the site will not give rise to significant quantities of gas due to the inert nature of the proposed waste types. The site will be engineered in accordance with the requirements of the Landfill Directive 1999/31/EC. although this is not a requirement for waste recovery sites. It is considered that, with respect to gas, the site will be compliant with the requirements of the Landfill Directive.

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