



REPORT

Sandsfield Gravel Company Ltd

Milegate Eastern Extension Quarry and Landfill

Accident Risk Assessment and Management Plan

Submitted to:

Sandsfield Gravel Company Ltd

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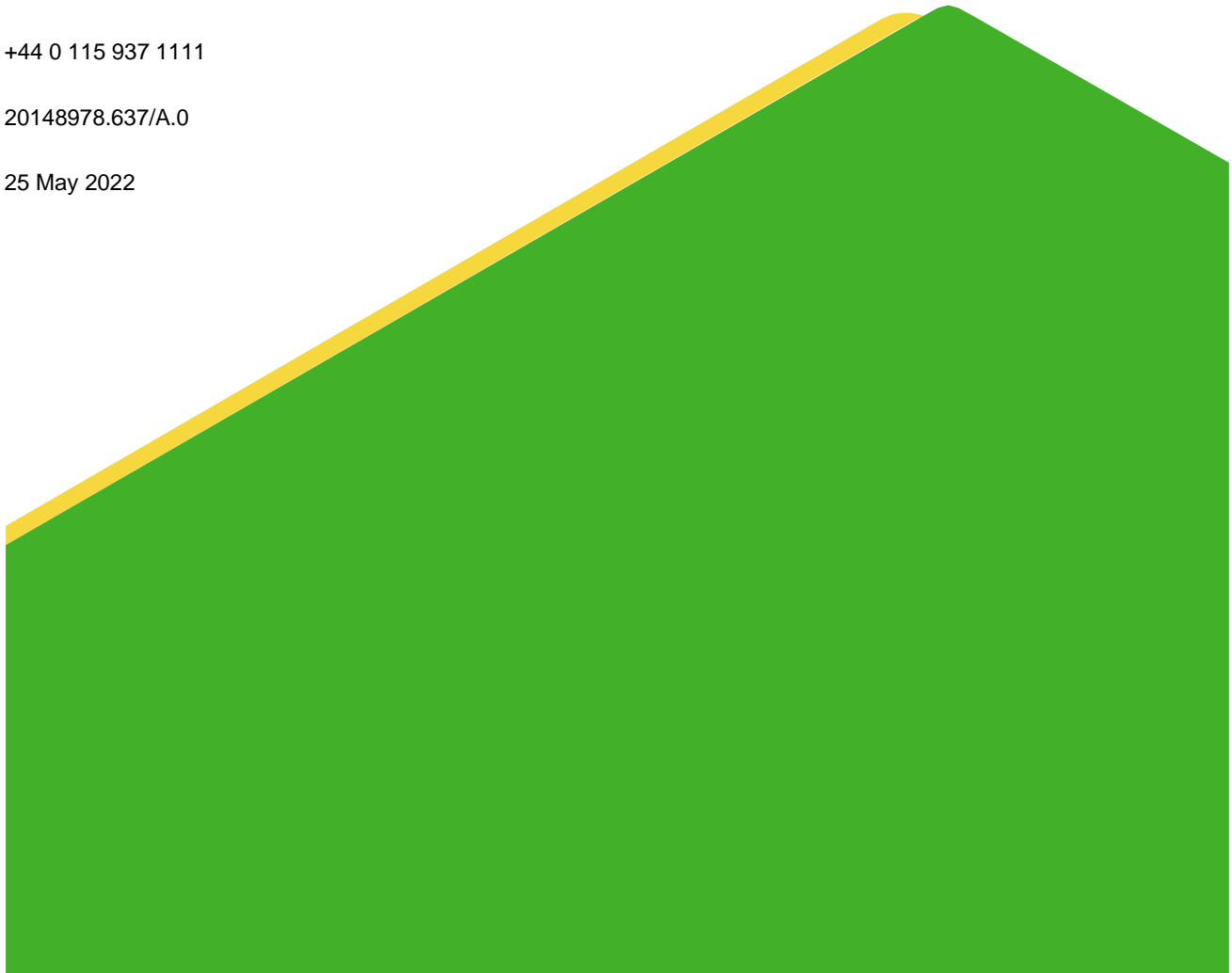
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1.0 INTRODUCTION

1.1 General

Sandsfield Gravel Company Ltd (Sandsfield) has requested that Golder, member of WSP in UK (Golder) updates the existing Accident Management Plan (AMP) for Milegate Extension Landfill. This was first prepared for submission to the Environment Agency in February 2009 in accordance with Condition 1.2.1 of Environmental Permit BX1942IX and updated in February 2013.

Sandsfield proposes to develop its existing operations and is applying for planning permission 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).
- 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 AMP is updated here to reflect this proposed development and to accompany the assessment of impacts from Disasters and Accidents as part of the planning application(s). Following submission of the planning applications, the 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.

This AMP supersedes the previous version of the AMP (February 2013, 07514290324.504b/B.0).

1.2 Site Location

The Site is located approximately 1 km southeast of the village of Brandesburton, East Yorkshire and is centred on National Grid Reference (NGR) TA 131 472. The Site is bound to the north by open fields and to the west by the Milegate Landfill Site (closed). The Moor Main Drain flows along the northern side of the Eastern Extension and joins the Milldam Beck in the northeast corner which then flows around the eastern and southern margins of the Site.

Access to the Site is obtained from Catwick Lane via Sandsfield's Site reception and offices that serve the quarry and landfill operations, and the adjacent waste transfer station. The entrance has secure steel and mesh gates to prevent non-operational vehicle access, which also prevents unauthorised access to the quarry and landfill. The haul road leading from the reception to the quarry and landfill is constructed from hardcore.

1.3 Site Operations

In accordance with the Environmental Permitting (England and Wales) Regulations 2016 (EP Regulations), the stationary technical unit at the Site comprises the landfill, as listed in Schedule 1 of the EP Regulations (Chapter 5 - *Waste Management*, Section 5.2 - Disposal of Waste by Landfill, Part A(1)(a)).

1.4 Responsibility

It is the responsibility of the Site Manager, his deputy and any 'Authorised Person' to implement these procedures. An 'Authorised Person' must be suitably competent and working under authority of the Site Manager.

1.5 Training

The Site Manager will ensure that all personnel engaged in these activities are aware of these procedures and are fully trained and competent in these procedures.

2.0 ACCIDENT MANAGEMENT PLAN

2.1 Report Context

The AMP recognises that the facility deals with non-hazardous and inert waste and sets out the control measures that will be utilised at the Site to minimise the likelihood of accidents and to minimise harm to human health, the environment and infrastructure/equipment in accordance with indicative Best Available Techniques (BAT).

2.2 Methodology

The AMP has been developed in accordance with Environment Agency guidance¹ '*Risk assessments for your environmental permit, 'develop a management system: environmental permits' and 'controlling and monitor your emissions for an environmental permit'*.

For each potential hazard, the assessment addresses the following points in **Table AMP5**:

- Identifying the hazard, pathway and receptor:
 - Identifying potential sources (agents or process) with the potential to cause harm;
 - Identification of potential receptors for protection;
 - Identifying potential harmful consequences; and
 - Identifying potential pathways by which the receptor may come into contact with the source.
- Assessing the risk:
 - The likelihood of accident occurring;
 - The severity of the consequence; and
 - The overall magnitude of the risk.
- Managing the risk:
 - Risk management.

An assessment of proposed prevention and mitigation measures is also undertaken for each potential accident scenario. Mitigation measures including techniques, maintenance, training and other preventative measures to be undertaken are also noted.

The likelihood and severity categories that have been used in the assessment in **Table AMP5** of each potential hazard are explained in **Tables AMP1** and **Table AMP2** below.

¹ www.gov.uk/guidance

Table AMP1: Likelihood of Accident Occurring

	Category	Definition
1	Extremely unlikely	Incident occurs less than once in a million years.
2	Very unlikely	Incident occurs between once per million and once every 10,000 years.
3	Unlikely	Incident occurs between once per 10,000 years and once every 100 years.
4	Somewhat unlikely	Incident occurs between once per hundred years and once every 10 years.
5	Fairly probable	Incident occurs between once per 10 years and once per year.
6	Probable	Incident occurs at least once per year.

Table AMP2: Severity of Consequence

	Category	Definition
1	Minor	Nuisance on-site only (no off-site effects); and No outside complaint.
2	Noticeable	Noticeable nuisance off-site, e.g. discernible odour; Minor breach of permitted emission limits but no environmental harm; and One or two complaints from public.
3	Significant	Severe and sustained nuisance, e.g. strong, offensive odours or noise disturbance; Major breach of permitted emission limits; and Numerous public complaints.
4	Severe	Hospital treatment required; Public warning and off-site emergency plan invoked; and Hazardous substance release into watercourse with 0.5 mile effect.
5	Major	Evacuation of local populace; Temporary disabling and hospitalisation; Serious toxic effect on beneficial or protected species; Widespread but not persistent damage to land; and Significant fish kill over 5 mile range.
6	Catastrophic	Major airborne release with serious off-site effects; Site shutdown; and Serious contamination of groundwater or watercourse with extensive loss of aquatic life.

Each of the potential accidents identified in **Table AMP5** have been assigned a likelihood and severity from the tables above, giving due consideration to the nature, scale and location of the accident with regard to the potential receptors and control measures that will be used at the Site. The likelihood and severity are carried forward to the matrix presented in **Table AMP3** to generate an overall risk.

Table AMP 3: Overall Risk

Likelihood	Severity of Consequence					
	Minor	Noticeable	Significant	Severe	Major	Catastrophic
Extremely unlikely	1	2	3	4	5	6
Very unlikely	2	4	6	8	10	12
Unlikely	3	6	9	12	15	18
Somewhat unlikely	4	8	12	16	20	24
Fairly probable	5	10	15	20	25	30
Probable	6	12	18	24	30	36

The score generated from **Table AMP3** is carried forward to **Table AMP4** below, which assigns a risk category to the potential accident.

Table AMP 4: Risk Categories

Magnitude of Risk	Score
Insignificant	6 or less
Acceptable	8 to 12
Unacceptable	15 or more

Table AMP5: Risk Assessment

Identifying the Hazard, Pathway and Receptor				Assessing and Managing the Risk			
Hazard	Receptor	Harm	Pathway	Probability of Exposure	Consequence	Magnitude of Risk	Risk Management
PROCEDURAL HAZARD							
Waste acceptance failure.	Local human, livestock and wildlife population and local environment.	Receipt of unauthorised or incompatible wastes. Release of particulate matter (dusts).	Water courses; Air transport.	Fairly probable.	Minor.	Insignificant.	Acceptance procedures are in place. Isolation of unacceptable waste.
Waste, litter and mud on roads.	Local human population.	Nuisance, loss of amenity, road traffic accidents.	Vehicles entering and leaving Site.	Fairly probable.	Noticeable.	Acceptable.	Operational procedures are in place for waste transfer and acceptance and to deal with any complaints.
Flooding of Site due to heavy rainfall.	Local human population and local environment.	Waste washed off-Site may contaminate buildings/natural habitats downstream and gardens.	Flood waters.	Somewhat unlikely.	Significant.	Acceptable.	EMS procedure for emergencies.
Odour.	Local human population.	Nuisance, loss of amenity.	Air transport then inhalation.	Fairly probable.	Noticeable.	Acceptable.	Operational procedures are in place. See Nuisance and Health Management Plan.
Noise.	Local human population.	Nuisance, loss of amenity, loss of sleep.	Air.	Fairly probable.	Noticeable.	Acceptable	Operational procedures are in place. See Nuisance and Health Management Plan.

Identifying the Hazard, Pathway and Receptor				Assessing and Managing the Risk			
Hazard	Receptor	Harm	Pathway	Probability of Exposure	Consequence	Magnitude of Risk	Risk Management
Scavenging animals and scavenging birds.	Local human population.	Harm to human health – from waste carried off Site and faeces. Nuisance and loss of amenity.	Air transport and over land.	Fairly probable.	Noticeable.	Acceptable.	Operational procedure for waste management in place, and procedures to control pests.
Pests (e.g. flies/vermin).	Local human population.	Harm to human health – from waste carried off Site and faeces. Nuisance and loss of amenity.	Air transport and over land.	Fairly probable.	Noticeable.	Acceptable.	Operational procedure for waste management in place, and procedures to control pests.
Fuel and oil Storage Failure.	Local human, livestock and wildlife population.	Potential contamination of land, groundwater and surface water.	Water course; migration through unsaturated zone.	Fairly probable.	Noticeable.	Acceptable.	Secure enclosed storage area; regular visual inspection of tanks and infrastructure; maintenance procedures; and hardstanding and capping (as appropriate).
STRUCTURAL HAZARDS							
Overfilling of Cells.	Local human, livestock and wildlife populations.	Potential contamination of land, groundwater and surface water. Nuisance, loss of amenity and harm to animal health.	Water course; migration through unsaturated zone; and air transport.	Fairly probable.	Noticeable.	Acceptable.	Regular surveys to check levels and capping when complete. The operator will collect litter arising from activities from affected areas outside the Site.

Identifying the Hazard, Pathway and Receptor				Assessing and Managing the Risk			
Hazard	Receptor	Harm	Pathway	Probability of Exposure	Consequence	Magnitude of Risk	Risk Management
Structural failure of landfill engineering.	Surrounding ground and groundwater.	Potential contamination of land, groundwater and surface water. Nuisance, loss of amenity and harm to animal health.	Water course; migration through unsaturated zone; and air transport.	Unlikely.	Significant.	Acceptable.	Stability Risk Assessment and CQA of engineering.
PHYSICAL HAZARDS							
Vandalism.	Staff; local human population and local environment.	Injury to Site staff; emergency services staff; and pollution of water, air and land.	Broken glass, structural damage, theft of plant, machinery.	Fairly probable.	Noticeable.	Acceptable.	Site security measures in place and EMS procedure for emergencies.
Plant, machinery and other Site vehicles after gaining unauthorised access to the waste operation.	Local human population and/or livestock.	Bodily injury.	Direct physical contact.	Unlikely.	Severe.	Acceptable.	Site security measures in place and EMS procedure for emergencies.
Fire from arson, lightning strikes, machinery or within waste causing the release of polluting materials to air (smoke or fumes), water or land.	Local human population and local environment.	Respiratory irritation, illness and nuisance to local population. Injury to staff, fire-fighters or arsonists. Pollution of water or land. Loss of local amenity.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from Site and via surface water drains and ditches.	Unlikely.	Severe.	Acceptable.	Site security measures in place and EMS procedure for emergency preparedness.

Identifying the Hazard, Pathway and Receptor				Assessing and Managing the Risk			
Hazard	Receptor	Harm	Pathway	Probability of Exposure	Consequence	Magnitude of Risk	Risk Management
SPILL HAZARD							
Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste, e.g. containing suspended solids.	All surface waters close to and downstream of Site.	Acute effects: oxygen depletion, fish kill and algal blooms.	Direct run-off from Site across ground surface, via surface water drains, ditches.	Somewhat unlikely.	Significant.	Acceptable.	All liquids shall be provided with secondary containment (applies to wastes and non-wastes such as fuels). No point source emissions to water.
Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste, e.g. containing suspended solids.	All surface waters close to and downstream of Site.	Chronic effects: deterioration of water quality.	Direct run-off from Site across ground surface, via surface water drains, ditches etc. Indirect run-off via the soil layer.	Somewhat unlikely.	Noticeable.	Acceptable.	All liquids shall be provided with secondary containment (applies to wastes and non-wastes such as fuels). No point source emissions to water. Run-off restricted.

2.3 Accident Management Procedures

Sandsfield operates an Environmental Management System (EMS) that includes procedures that covers accidents and emergency situations at the Site including:

- Fires;
- Spills;
- Physical damage;
- Incendiary devices; and
- Flooding.

Signature Page

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