MOTT MACDONALD

Suttles

Swanworth Quarry Environmental Risk Assessment

Permit Application

October 2024

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Swanworth Quarry Environmental Risk Assessment

Permit Application

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Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
1	26 April 2024	Olivia Ellson	Lucia McDermott	David Dray	Draft for client comments
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Contents

1 Introduction

1.1 Background and scope

This document assesses the risks to the environment and human health from the proposed extension of the Swanworth Quarry site at Worth Matravers near Swanage, Dorset. This risk assessment has been produced to support a bespoke permit application for the lateral extension of the site.

In 2020, J Suttle Transport Ltd (Suttles) applied for planning permission (application reference 6/2020/0321_1) to continue the winning and working of limestone through the lateral extension of Swanworth Quarry, retention of processing plant and existing infrastructure, importation of inert waste material for restoration purposes and continued production and sale of recycled aggregates. Planning permission was granted on 15 December 2023 by Dorset Council. A copy of the planning permission can be viewed on the Dorset planning application portal[1].

To enable the restoration of the lateral extension of the site, post extraction, Mott MacDonald Limited was instructed by Suttles to produce a Waste Recovery Plan to support with the application for an additional waste recovery permit on site. The extension area will be restored to agricultural use by the importation of clean inert waste materials, as is currently the case with the restoration of the existing quarry[1]. A Waste Recovery Plan (document reference 100110814_WRP_SUT v1) has been prepared and was submitted to the Environment Agency for review in March 2024.

This document assesses risks to the environment, amenity and human health in accordance with the Environment Agency's guidance published on their website[2]. This report deals with:

- Noise and vibration
- Odour
- Particulate matter
- Litter
- Abatement of other fugitive emissions to air
- Vermin and insects (pests)
- Emissions to water and land
- Human and Environment Safety

This report identifies the impacts on the different receptors in close proximity to the site and provides an assessment of the risks to these areas from Swanworth Quarry. It does not include accidents. Procedures on managing accidents on site can be found in section 4 of the Management Plans (document reference 100110814_MP_SUT vE). Suttles also has its own Environmental Impacts and Aspects register, which has been used to inform this Environmental Risk Assessment.

[1] Dorset Council (2023). Planning Decision Notice (application number 6/2020/0321) Available at: Planning application: 6/2020/0321 - dorsetforyou.com (dorsetcouncil.gov.uk) (Last accessed April 2024)

[2] Environment Agency (2023) Risk assessment for your environmental permit Available at: Risk assessments for your environmental permit - GOV.UK (www.gov.uk) (Last accessed April 2024)

1.2 Assumptions and limitations

There are no discharges to groundwater or surface water from the site. Consequently, the risk of surface water and groundwater contamination is considered negligible due to the nature of waste processed on site, and is therefore not considered as part of this risk assessment.

2 Site setting

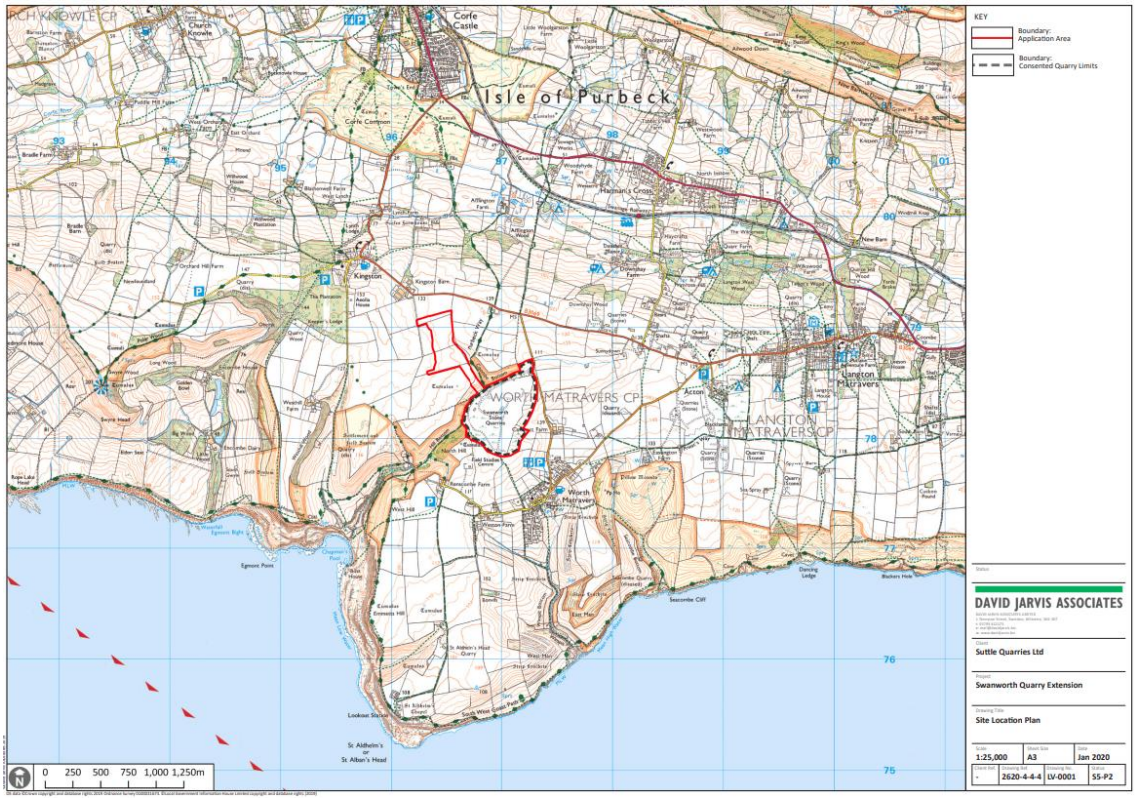
2.1 Location

Activity address: Swanworth Quarry, Worth Matravers, Swanage BH19 3LE.

The 100m NGR for the existing quarry is SY 969 781 and it is marked as Swanworth Quarries on the Ordnance Survey 1:25,000 Purbeck and South Dorset map. The 100m NGR for the extension area to the quarry is SY 964 788.

Figure 1 shows the location of the Quarry and the extent of the proposed extension.

Figure 1: Site location and boundary



Source: Quarry Design and Minerals Consulting Limited (2019)[3]

2.2 Protected areas: European sites and Site of Special Scientific Interest (SSSI)

Statutory protected sites located within 2km of the extension area:

- Dorset Heaths Special Area of Protection (SAP), to the north of the site
- Dorset Heathlands Ramsar, to the north of the site
- Corfe Common SSSI, to the north of the site
- Blashenwell Farm SSSI, to the north west of the site

[3] Quarry Design Land and Minerals Consulting Limited (2019) Stanworth Quarry (00144) Available at: Planning application: 6/2020/0321 - dorsetforyou.com (dorsetcouncil.gov.uk) (Last accessed April 2024)

- Isle of Portland to Studland Cliffs Special Area of Conservation (SAC), to the south west of the site
- St. Albans Head to Durlston Head SAC, to the south east of the site
- South Dorset Coast SSSI, to the south west of the site

Non-statutory protected sites located within 2km of the extension area:

- The site is located within the Jurassic heritage coast line
- The northern area of the site is located within a catchment area for a Zone III Source Protection Zone

3 Risk Assessment

3.1 Identifying the hazards

The following list identifies the foreseeable environmental incidents at the site for which Environmental Risk Assessments have been carried out to identify the necessary controls to prevent and mitigate incidents, including:

- Fire and firewater containment
- Oil spills
- Transfer of substances
- Waste materials

3.1.1 Assessing the risks

The risk assessment procedure uses subjective risk ratings as listed below.

Table 3.1: Subjective risk ratings used in the risk assessment

Risk rating	Hazard degree	Estimated frequency
High	Significant environmental damage or non-compliance resulting in enforcement action	Very likely/almost certain (Monthly/More often)
Medium	Spillage, emission or non-compliance likely to result in complaint or regulator correspondence	Quite Possible/likely (Annually)
Low	Spillage, emission or minor non-compliance contained within site	Unlikely/rare (1 in 10 Years)
Negligible	Minor Spillage or emission contained on site and easily cleaned up	Very unlikely to impossible (1 in >10 years)

3.1.2 Assessment of the Environmental Risks

The following tables provides the assessment of the environmental risks, the subjective risk ratings and the mitigation in place to prevent risk occurring or manage it should it occur.

Data and Information				**Judgement**				**Action (by permitting)**	
Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of risk after management?
Noise and vibration									
Local human population, domestic properties, site offices.	Noise and vibration.	Nuisance, loss of amenity, loss of sleep.	Noise through the air and vibration through the ground.	Low	Low	Low	Local residents and site staff often sensitive to noise and vibration.	Implementation of a noise and vibration management plan, noise kept to a minimum during operating hours. In the event of exceptional noisy operations e.g. construction – inform residents. The creation of 3m bunds across the extension area boundary (northern, eastern and southern boundaries).	Low
Local human population, domestic properties, site offices.	Vehicles delivering/removing wastes and materials.	Nuisance, loss of amenity.	Noise through the air and vibration through the ground.	Low	Low	Low	Local residents, site staff and other workers in close proximity to the site often sensitive to noise and vibration.	Limitation of operating hours. The operating hours for the proposed extension to Swanworth Quarry are: • For stone extraction, aggregate recycling and infilling operations: 07.00am to 18:00pm from Monday to Friday; and 07:00am to 16:00pm on Saturdays. • For processing and HGVs entering or leaving the quarry: 06.30am to 18:00pm from Monday to Friday; and 06:30am to 16:00pm on Saturdays. • For maintenance work: 06.00am to 19:00pm from Monday to Friday; and 06:00am to 12:00pm on Saturdays. • Blasting operations will only be undertaken between 12:00 to 16:00 from Monday to Friday. There will be no processing of stone in the extension area. In addition, it is not proposed to undertake soil or overburden removal, or any drilling and blasting operations in the extension area on Saturdays, which are potentially noisier activities. Limit vehicle speeds to 10mph on site. Daily HGV movements are limited by planning permission to 96 (48 in and 48 out) per day.	Low
Local human population, domestic properties, site offices.	Vehicles arriving/ leaving the site.	Nuisance, loss of amenity.	Noise through the air and vibration through the ground.	Low	Low	Low	Local residents often sensitive to noise and vibration.	Limitation of operating hours. Limit vehicle speed. Daily HGV movements are limited by planning permission to 96 (48 in and 48 out) per day.	Low
Local population, domestic properties, site offices.	Waste treatment, processing (including wash plant) and use.	Nuisance, loss of amenity.	Noise through the air and vibration through the ground.	Low	Low	Low	Local residents often sensitive to noise and vibration.	Choose quiet plant and the provision of silencing equipment. Proper maintenance of plant and equipment. Limitation of operating hours under the planning permission.	Low

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What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of risk after management?
								Turn equipment off when not in use.	
Odour									
Local human population.	Odour	Nuisance, loss of amenity.	Air transport then inhalation.	Low	Low	Low	Local residents and staff often sensitive to odour.	Implementation of an odour management plan, odorous waste unlikely to be deposited, due to the nature of the materials required.	Very Low
Local population, domestic properties, site offices.	Spillage of odorous materials including oils, fuels, chemicals. Spillages. Failure to clean up spillages. Contaminated spill equipment not disposed of appropriately.	Nuisance, loss of amenity.	Air transport then inhalation.	Low	Low	Low	Local residents and staff often sensitive to odour.	The site operator shall adopt a procedure for dealing with spillages. The Site Manager shall ensure all spillages are cleaned up immediately. The Site Manager shall ensure all relevant staff are appropriately trained to use the spill kits on site. All areas of site to be cleaned regularly; Site Manager to oversee regular cleaning schedule, all staff trained on importance of good housekeeping and site cleanliness.	Low
Particulate Matter									
Haul roads, public highways. Domestic properties, local human population, local amenity, and site offices.	Vehicle movements on access and haul roads.	Nuisance, loss of amenity.	Air/ windblown.	Medium	Medium	Medium	Local residents often sensitive to dust.	Haul roads will be dampened down as required using a bowser. Sprinkler systems will be used to dampen down the site access road. Road sweeper to be used on site access road. Internal roads will be swept regularly as required to reduce the likelihood of dust becoming airborne. Haul routes to be regularly maintained by grading to minimise dust generation. Site vehicle movements will be limited to 10mph.	Low
Domestic properties, local human population, local amenity, site staff and offices.	Releases of particulate matter (dusts) and micro-organisms (bioaerosols).	Harm to human health, respiratory irritation and illness.	Air transport then inhalation.	Low	Medium	Low	Local residents, site staff and Site of Significant Scientific Interest (SSSI) often sensitive to dust.	Permitted waste types are inert, non-hazardous construction, demolition and excavation wastes and may include dusty materials. These wastes have a low potential to produce bio-aerosols. The permitted level of throughput and potential size of the facility means there is potential for exposure if anyone is living or working close to the site (additionally to the operator and employees). There is potential for increased dust generation from permitted activities during prolonged dry periods e.g. summer months. Dust may be produced from dirt deposits from vehicles or other users of the haul road. Ensure there is the equipment to enable the vehicles, where applicable, to be washed down.	Low

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What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of risk after management?
								Ensure there is equipment available for damping down dusty wastes and haul roads where required e.g. sprinkler system and bowsers. Drop heights to be minimised when handling waste to minimise dust. Mobile plant exhausts and cooling fans to point away from ground to prevent dust mobilisation. All plant to be regularly maintained. Bunds and overburden stores to be seeded and watered as soon as is practicable to minimise the effects of wind blow.	
Domestic properties, local human population, local amenity, site staff, visitors and offices.	Releases of particulate matter (dust).	Nuisance – dust on cars, clothing etc.	Air transport then deposition	Low	Low	Low	Local residents often sensitive to dust. Sensitivity of local area (SSSI). Site office and staff more directly affected.	No wastes comprising solely of dusts is accepted, however Construction & Demolition (C&D) wastes are accepted, therefore dusty materials likely. Dust may be produced from dirt deposits from vehicles or other users of the haul road and treatment and storage of aggregates and soils. Ensure vehicles are able to be washed down when necessary. Ensure that there is equipment available for damping down dusty wastes and haul roads where required e.g. sprinkler system and bowsers. Drop heights to be minimised when handling waste to minimise dust. Mobile plant exhausts and cooling fans to point away from ground to prevent dust mobilisation. Bunds and overburden stores to be seeded and watered as soon as is practicable to minimise the effects of wind blow.	Low
Litter									
Local human population, livestock and wildlife, domestic properties and local amenity.	Waste and litter on local and internal roads. Vehicles entering and leaving site.	Nuisance, loss of amenity and road traffic accidents.	Air transport then deposition.	Low	Low	Low	Local residents and animals sensitive to litter. Sensitivity of local area (SSSI).	All vehicles entering/leaving the site will be transported in an enclosed or sheeted vehicle to prevent waste/materials being blown from them. Vehicles will be loaded evenly to avoid any spillages. C & D wastes will be kept covered when not being processed. Regular inspections for litter and debris are undertaken. Any litter on site or at site boundaries to be collected as soon as possible.	Low

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What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of risk after management?
Mud and Debris									
Local human population.	Vehicles depositing mud and debris arriving/ leaving the site.	Nuisance, loss of amenity, road traffic accidents.	Vehicles entering/ leaving the site.	Low	Medium	Low	Road safety, local residents often sensitive to mud on the road.	Ensure any mud arising from activities on site is cleared up. Ensure vehicles are washed regularly. Ensure any soiled vehicles are washed down before leaving the site. Inspect vehicle routes regularly. Sweep area when required.	Low
Abatement of other Fugitive Emissions to Air									
Local population and local environment.	Arson/ vandalism causing the release of polluting materials to air (smoke and fumes), land or water.	Harm to human health – respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/ vandals. Pollution of air, land and water.	Air transport of smoke. Spillages and contaminated firewater by soakaway from site and ditches.	Medium	Low	Low	Permitted waste types are predominantly inert. Local residents often sensitive to smoke and fumes. Sensitivity of local area (SSSI). Site office and staff more directly affected.	Management system includes security, fires and spillage management plans. Waste tonnages to be restricted by the permit. Only inert Construction, Demolition & Excavation (C,D&E) waste is accepted. Access to site and waste restricted by a fenced permitmeter.	Low
Local population and local environment.	Accidental fire causing the release of polluting materials to air (smoke or fumes), land and water.	Harm to human health – respiratory irritation, illness and nuisance to local population. Injury to staff or firefighters. Pollution of air, land and water.	Air transport of smoke. Spillages and contaminated firewater by direct runoff from site and via surface water drains and ditches.	Low	Low	Low	Permitted waste types are predominantly inert. Local residents often sensitive to smoke and fumes. Sensitivity of local area (SSSI). Site office and staff more directly affected.	Permitted activities do not include the burning of waste. Management system includes security, fires and spillage management plans. Waste tonnages restricted by the permit. Only inert C, D & E waste is accepted for processing. Site Manager shall ensure the programme of Planned Preventative Maintenance (PPM) is implemented effectively to minimise the probability of fire through faulty plant and equipment. Ensure adequate firefighting measures are implemented on site. Smoking only permitted in designated areas.	Low
Birds, Vermin and Insects									
Local human population.	Scavenging animals/ birds, pests.	Harm to human health from wastes carried off-site and faeces. Nuisance and loss of amenity.	Air transport and over land.	Low	Low	Low	Permitted wastes unlikely to attract scavenging animals and birds but may become nesting / breeding sites.	Pest control management plan implemented. Use rat boxes around the site, where appropriate. Ensure waste cannot be accessed by scavengers.	Very Low

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What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of risk after management?
								Regular maintenance of boundary fencing and buildings to prevent access to site. Management plan includes management of pests, vermin etc. Well established and proven operational controls and procedures in place, including regular inspection and monitoring. The waste should not be attractive to scavenging animals.	
Emissions to Water and Land									
Local human population and local environment.	Flooding of site.	If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream.	Flood waters	Low	Low	Low	Permitted waste types are inert /soils so any waste washed off site will add to the volume of the local post-flood clean up.	Activities to be managed and operated in accordance with a management system and management plans and procedures implemented. Area not known to flood (the Application area is in fluvial Flood Risk Zone 1, the lowest zone of flood risk). Site acts as a natural soakaway, so flooding and waste washed from the site is unlikely.	Very Low
Groundwater	Spillage of liquids, contaminated rainwater run-off from waste e.g. containing suspended solids.	Acute or chronic effects to aquatic life, contamination of groundwater, requiring treatment of water or closure of borehole.	Transport through soil/ groundwater then abstraction.	Low	Low	Low	Wastes unlikely to contaminate groundwater. Waste types are inert so long term harm is unlikely. No point source emissions to water, site drains to soakaway, but there is potential for rainwater run-off from stored wastes especially during heavy rain. Sensitivity of local area (SSSI). Harm to animals and recreational use of area. Liquids are stored in bunded area	Suttles have a set of written policies and procedures designed to protect groundwater quality from spillage and leakages by minimising the likelihood of occurrence in the first instance and by specification of measures to deal with spillages and/or leakage should these occur. All liquids shall be provided with secondary containment. Excavated wastes from potentially contaminated sites require analysis. Regular inspection and monitoring of water quality. Site Manager shall ensure the programme of PPM is implemented effectively to minimise the probability of any leakes being generated fromplant failure. Activities shall be managed and operated in accordance with a management system (will include inspection and maintenance).	Low
Human and Environment Safety									
Protected sites - European sites and SSSIs.	Any	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc.	Any	Low	Low	Low	Waste operations may cause harm to and deterioration of nature conservation sites.	The operator shall not be taken to have breached this rule if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions. The potential hazards from the permitted activities pose a low risk to the broad sensitivity of	Low

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								species and habitat groups, when located >500 meters away from the site's boundary.	
Local human population and / or livestock after gaining unauthorised access to the waste operation.	All on-site hazards: wastes; machinery and vehicles.	Bodily injury	Direct physical contact	Medium	High	Low	Permitted waste types are inert/soils, C, D & E wastes.	Activities managed and operated in accordance with the management system including site security measures to prevent unauthorised access. Operator has other associated risk assessments relating to this type of potential incident.	Low