The Bacup Clay Company Ltd

Land Restoration at Tong Quarry

Dust Emissions Management Plan

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1.0 SCOPE OF PLAN

1.1 This dust emissions management plan (DEMP) sets out how the risk of poor air quality emissions are managed at Tong Quarry Restoration site in Bacup, Lancashire. The Operator is The Bacup Clay Company Limited, hereafter referred to as the Operator. The site is an active quarry which is being progressively restored under a waste recovery permit EPR/EB3307HK. This document has been produced in support of the environmental management systems for Environmental Permit EPR/EB3307HK.

1.2 The purpose of this plan is to:

- minimise the emissions of fibres, dust, particulates and NO_2 produced by site activities, as far as is practicable, using appropriate best practice measures; and
- mitigate the potentially adverse impacts of the residual emissions of fibres, dust, particulates and NO_2 after all appropriate control measures have been applied with due regard to the sensitivity of the local surroundings.

1.3 There is no quantitative assessment/modelling of the dust/air emissions as there are no point source emissions. This management plan incorporates industry good practice including to ensure the air quality emissions risk remains low during the site's operation. The plan has been developed following the principals set out in:

- EA dust control guidance including the Dust Emissions Management Plan template;
- Rossendale Air Quality Action Plan; and
- SPG Mayor of London Guidance and City of London Code of Practice for Deconstruction and Construction Sites.

1.4 The relevant guidance in these plans relates primarily to construction processes which are consistent with those operated at the restoration site and present good industry practice.

1.5 The site comprises open fields to the north of the site and an active quarry to the south of the site, with progressive restoration taking place. The site is accessed via an unnamed private road off of Tong Lane to the west.

1.6 The site waste operations consists of active deposition phase (deposit of inert waste only); and restoration phase. Suitable engineering material arrives on site, unloaded at the point of placement and placed by mobile plant.

1.7 The restoration operations can generate particulates. The sources of emissions and associated controls are described in Section 4 of this plan. The plan sets out the proactive and reactive measures that will be implemented to control the emissions during standard and abnormal operational circumstances. These controls are described in subsequent sections.

1.8 In the event that the implementation of controls fails, corrective actions will be identified and implemented.

1.9 This document will form part of the Operator's Environmental Management Systems (EMS). The EMS will be kept in the site office, and all operation staff will be briefed on the contents of this document. The Site Manager is responsible for the implementation of this Plan.

1.10 The scope of this management plan follows the Environment Agency's (EAs) requirements set out in the Dust and Emissions Management template. Monitoring is in line with EA Guidance M17.

2.0 SENSITIVE RECEPTORS & BASELINE CONDITIONS

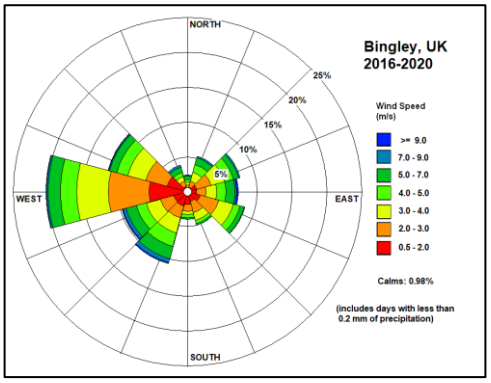
2.1 The site is in Lancashire, circa 1 km east of Bacup. The site is accessed via a private road off of Tong Lane to the west of the site. The site is bounded to the north by agricultural fields, to the east by residential dwellings and agricultural fields, to the west by residential, educational, and agricultural land uses and to the south by agricultural fields and infilled areas of former Tong Quarry excavations. The sensitive receptors are shown in drawing 213036/D/002. The site layout and access are shown by drawing 213036/D/004.

2.2 The local authority for the site Rossendale Borough Council and the district council is Lancashire County Council.

2.3 DEFRA Air Quality Management Areas (AQMAs) data indicates that the site not within an AQMA. The nearest AQMA is located circa 6.55 km west of the site in Rossendale and declares the annual average for NO_2.

Sensitive Receptors

2.4 The frequency of exposure and likelihood of any fugitive emissions on sensitive land uses is determined by the magnitude of release, proximity of receptors and prevailing meteorological conditions. Meteorological wind data from 2016-2020, has been acquired from ADM Limited. The wind data has been taken from the Met Office Station in Bingley, which is approximately 24 km north east of the site and is considered to be representative of conditions at the site. The prevailing wind direction is from the west.



2.5 With the dominant wind direction is from the west, the most sensitive receptor at risk from fugitive emissions are likely to be the residential and agricultural receptors located to the east of the site boundary.

2.6 Table 1 below lists the sensitive receptors within proximity to the site, while Table 2 details the potential local contributors of dust and emissions surrounding the site.

Table 1. Sensitive receptors

Receptor Type	Approximate distance from site
Residential	
Residential Dwelling along Access Road (Dry Corner Farm)	94 m east
Residential Dwelling off of Tong Lane (Hey Head Farm Cottage)	110 m south east
Residential Dwelling off of Tong Lane (Bent House Farm)	150 m south west
Residential Dwellings along Tong Lane	162 m south west 214 m south west 320 m west 354 m west
Residential Dwelling along Access Road (Tong Farm)	190 m west
Dwellings along Warcock Lane	285 m north west
Residential Dwelling along off of Hazel Grove (Pasture Bottom Farm)	300 m north
Residential Dwellings off Tong Lane (Slack Gate)	321 m west
Dwellings along Oakenclough Road	330 m north west
Residential Dwellings along Pennine Road	365 m west
Residential Dwelling along off of Hazel Grove (Lower Reaps Farm)	365 m north east
Dwellings along Hazel Grove	431 m north west
Industrial/Commercial	
Automotive Repair Units along Vale Street	665 m north west
Commercial/Industrial Units along A6066	804 m south
Commercial/Industrial Units along The Sidings	876 m south west
Commercial and Industrial Area along A671 and A681	930 m south west
Transport	
Access Road	Within site
Tong Lane	197 m south west 236 m south 348 m west
Pennine Road	362 m west
Warcock Lane	325 m north west
A671 (Rochdale Road) Public Highway	690 m south

Receptor Type	Approximate distance from site
	766 m south west 861 m west
Agricultural	
Various	<5 m north <5 m south <5 m east <5 m west
Schools	
St. Marys RC Primary School	309 m west
Bacup Britannia Community Primary School	567 m south
Vale Street Nursery	792 m north west
Early Years & Childcare Centre	908 m west
Bacup Thorn Primary/Nursery School	1.05 km north west
Medical	
Irwell Medical Practice	917 m west
Priority Habitat	
Grassland (Good quality semi-improved grassland)	725 m south east
Blanket Bog	434 m east 612 m north east 788 m north east
Lowland Fens	263 m south east 386 m south east
Deciduous Woodland Habitat	464 m south west 634 m west 660 m north west 726 m south west 865 m west
Protected Species Site	
European Protected Species Site- Bats off Market Street	990 m west
Statutory Designated habitat/site (SSSIs, SACs, SPAs, Ramsar, NNRs, LNRs)*	
Lee Quarry SSSI	1778 m south west
Recreation	
Bacup Pennine BMX Track	363 m south west
Playing Fields	409 m west
Playing Field	469 m south west
Bacup Cricket Club	991 m north west
New Line Picnic Site	965 m south
Statutory Historic Buildings	
38 and 40 Oakenclough Road (Listed Building)	369 m north west
36-38, Todmorden Road	678 m north west
Lane Ends Farmhouse (Listed Building)	721 m south west
16, Rochdale Road (Listed Building)	879 m west
Britannia Mill (Listed Building)	839 m south
*SSSI = Sites of Special Scientific Interest; SAC = Special Area of Conservation; SPA = Special Protection Areas; NNR = National Nature Reserve; LNR = Local Nature Reserve	

Table 2. Other potential dust and emission emitters

Name	Comments	Approximate distance to receptor
Road traffic (Pennine Road and Tong Lane)	Activities include the import of waste and plant movement. Potential for increase in NO_X, PM_{10} Total Suspended Particulates (TSP).	197 m south west 342 m west
Construction along Henrietta Street	Activities include the import material and plant movement. Potential for increase in NO_X, PM_{10} Total Suspended Particulates (TSP).	993 m west

3.0 WASTE OPERATIONS

3.1 The operations on-site involve transport, deposition and compaction of inert soils / aggregates, to construct the restoration landform. The site layout includes access / egress to the west of the site via weighbridge and weighbridge office. Lorries drive directly to the placement area.

3.2 The site infrastructure is shown on drawing 213036/D/007. Further detail on the site operations are detailed in the Operational Working Plan (Ref: 213036/OP). The typical waste types are set out in Table 3 below.

Table 3. Typical waste types brought to site

EWC	Description	Tonnes per week (indicative)	On site Process	Potential Risk (with no mitigation)
17 05 04 20 02 02 19 13 02	Soil and stones	< 4,000 tonnes	Transferred directly to placement. No process as material is suitable for placement.	Medium / High
17 01 01 17 01 02 17 01 03 17 01 07 10 12 08	Concrete, brick, tiles and ceramics	0 – 750 tonnes	Larger fraction with little friable small particle size. No additional processing required.	Low
17 05 08	Ballast stone	0 – 750 tonnes	Larger fraction with little friable small particle size. No additional processing required.	Low
01 01 02 01 04 08 01 04 09	Aggregate and soils	0 – 750 tonnes	Transferred directly to placement. No process as material is suitable for placement.	Medium
19 02 06	Cohesive silt/clay	0 – 750 tonnes	Cohesive binds particles together and comes from a wet process. Transferred directly to placement. No process as material is suitable for placement.	Low

Notes:
1. EWC codes are the most likely to be imported to site. The tonnes per week and processes are considered worst case and are subject to varying factors.

3.3 Table 4 overleaf sets out the waste management activities and the potential risk for fugitive particulate emissions without mitigation.

Table 4. Waste processes, streams and description of process

Description	Processes (areas)	Potential for fugitive particulate emissions without mitigation
Haulage and site operation Placement and compaction of inert material Restoration phase	Import of inert waste / material	Possible exhaust emissions and fugitive dusts from loads from vehicles (NO_x, PM_{10} (<10 µm) and Total Suspended Particulates (TSP)).
		Possible wind entrainment of fines silts and soil on operating surface and haul route.
	Tipping of waste / material	Possible exhaust emissions and fugitive dusts from loads from vehicles (NOx, PM10 (<10 µm), fibres and Total Suspended Particulates (TSP)).
		Possible wind entrainment of light fraction in the soils.
	Placement and compaction of waste/material.	Exhaust emissions and fugitive dusts from the plants in operation (NO_X, PM_{10} (<10 µm) and Total Suspended Particulates (TSP)).
		Possible wind entrainment of light fraction in the soils.

3.4 The particulate emission risk assessment is shown in Appendix A.

Plant and Equipment

3.5 The delivery plant involved are sheeted 8-wheel delivery lorries with an emission rating of Euro 5 and above. The deliveries are with either standard, sheeted tipper lorries, at a rate per day compliant with planning permission.

3.6 The onsite plant involved in daily operations are likely to be one bulldozer with a compaction attachment. These plant are owned by the Operator and are maintained in line with manufacturer's specification. If plant must be replaced, the replacements will be of the lowest emission standard possible at the time of purchase. There are no generators on site.

4.0 DUST & PARTICULATE MANAGEMENT

Sources of Fugitive Particulates and Control Processes

4.1 The potential dusts include fine particulate matter which consist of inhalable fractions (total suspended particulates (<100 µm) and the more dangerous respirable fraction (less than PM_{10}). Such dust types are termed as friable. Friable dusts may occur in hardcore and aggregate waste.

4.2 There will be no point source emissions of air pollutants. Any release will be fugitive. There is no processing on site. All waste types will be suitable for permanent placement when transferred to the site. Given the waste operation is over a large area, a building enclosure is not considered appropriate for this activity.

4.3 Table 5 sets out the controls that will be implemented at all time the site is operational, unless specified otherwise:

Table 5. Control measures

Ref	Abatement Measure	Description/Effect	Overall Consideration and Implementation	Trigger for Implementation
Preventative Measures				
1	Impermeable concrete or tarmac surfacing internal haul route from public highway to site.	The internal route from Tong Lane to the weighbridge is circa 400 m long. No mud generated along the internal route. Any mud/ dust brought to site on HGVs is easy to clean. All vehicle running surfaces at the site are hard surfaced and all waste is delivered by road.	The access / egress dedicated manned wash down area can be used in the event there is significant tyre mud / dust on HGVs, and will be supplemented by a road sweeper to limit risk of dust from residual waste and dust picked up on the tyres. A trained operative will inspect the access / egress with the external road three times a day to determine whether there is beginning to be an accumulation of dust/mud on the internal impermeable concrete or on the junction with the external road. In the event there is, a road sweeper will be deployed. The operative will also be manned with a strong brush for manual assistance. The operative will be aware of the DEFRA's CoP grading classifications (shown in Appendix F) and the corrective action response time will be immediate if Grade C or D is identified, provided it is safe to do so. As a minimum, the junction will be swept within half a day of identification.	Excess mud/ dust will be identified in daily visual inspections. Grading classification and triggers (Grade C or D) will be in accordance with DEFRA's CoP.
2	Requirement for delivery lorries to implement dust controls.	All lorries will be 8-wheel enclosed, sheeted lorries or vehicle with equivalent dust controls. Vehicles will be sheeted upon arrival.	Vehicles will temporarily uncover for visual inspection at the weighbridge or gate, then re-cover for the transit to the designated tipping location.	Operative responsible for ticket collection will enforce compliance with sheeting/ equivalent dust controls if dust control is inadequate. If non-compliance is observed, a strike will be given, which when tallied up to 3 strikes for repeat offenders, the haulier will be contacted and driver banned from site.
4	Wheel wash during dry / muddy conditions	The wheel wash is a drive through rumble bath type system. There is no water re-circulation and is topped up. The system is 7 m^3 and (worst case) requires up to 2 m^3 top up per day. All HGVs will go through the wheel wash when leaving the site.	Operatives who drive will be briefed on the need to use the system.	Operative responsible for ticket collection will enforce compliance with wheel wash dust controls if dust control is inadequate. If non-compliance is observed, a strike will be given, which when tallied up to 3 strikes for repeat offenders, the haulier will be contacted and driver banned from site.
5	Tipping location at final placement of material.	Vehicles will finally uncover and tip at final placement location. This ensures no temporary storage. Upon compaction, the risk of wind-blown dust is considered very low.	The place of tipping will change over time however risk is significantly reduced if permanently compacted within that working day.	Site operatives are briefed on the tipping location and will ensure that tipping occurs here. All vehicular unloading will be supervised by a banksman operative to ensure tipping is not uncontrolled.

Ref	Abatement Measure	Description/Effect	Overall Consideration and Implementation	Trigger for Implementation
Preventative Measures				
6	External: dust suppression systems – mobile water bowser with spray attachment.	Mobile manual water bowser with spray attachment to dampen down haul routes and surfaces to prevent further mobilization. This will occur when dry conditions are encountered at the beg inning of each working day. An example of the bowser is shown in Appendix B.	There is no exception to this abatement measure and in the event that the dust suppression system fails, all operations will cease until the control can recommence. Critical spares for the dust suppression system (sprays) will be maintained on site. There will be one replacement handheld high pressure misting system kept on site.	There is no exception to this abatement measure and suppression will be implemented whenever these activities are taking place.
7	Drop heights and double handling minimised.	Drop heights will be minimised and double handling minimised at all times.	Operatives who drive will be briefed on the need to minimize drop heights.	Site operatives are briefed on the tipping location and will ensure that tipping occurs here. All vehicular unloading will be supervised by a banksman operative to ensure tipping is not uncontrolled.
8	Site wide speed limit set at 5 mph for all HGVs	Minimisation of fugitive emissions from site surfacing/ vehicle wheels/ loads by keeping vehicle speed low.	All drivers delivering waste will be subject to signage reminders of speed limit, dust controls and by the operator at the ticket office. Driver's under the Operator's primary control will be subject to a site induction and toolbox talks.	If non-compliance is observed, a strike will be given, which when tallied up to 3 strikes for repeat offenders, the haulier will be contacted and driver banned from site.
9	Anti-idling policy	Limit the fugitive emissions from vehicles by implementing a no idling policy.	All drivers delivering waste will be subject to reminders of no idling policy by the Operator at the ticket office. Driver's under the Operator's primary control will be subject to a site induction and toolbox talks.	If non-compliance is observed, a strike will be given, which when tallied up to 3 strikes for repeat offenders, the haulier will be contacted and driver banned from site.
10	Visual monitoring inspection & checklist	The visual monitoring checklist (VMC) (attached Appendix C) will be completed daily by nominated site operative, where wind direction, airborne dust, dust soiling and weather conditions will be monitored. The checklist will be kept on site in the Site Office. These conditions will be monitored using the Met Office website and real-time observations on site. Notes of weather conditions off site may also be noted if different from on site notes. This will inform the need to use additional preventative measures.	The number of visual inspections will be increased in accordance with the weather conditions and following an emissions incident or complaint. The inspections will be undertaken during normal operating hours, not during breaks. The inspection will include check of concrete surfacing, acceptance of loads and tipping/loading activities.	A minimum of 2 visual monitoring inspections will be undertaken per day. During dry / windy conditions, 3 inspections will be undertaken per day. One VMC will be filled out each day and/or recorded in the Daily Site Diary, and kept in the Site Office. In the event of dust identification, the procedure and actions set out in Section 5 of this DEMP will be implemented.
11	Air emissions awareness training	All staff receive internal air emissions awareness training at site induction and through regular toolbox talks to engender awareness on emissions reduction.	All staff receive internal air emissions awareness training at site induction and through regular toolbox talks	All staff receive internal air emissions awareness training at site induction and through regular toolbox talks.
12	Routine servicing of plant and equipment.	All plant and equipment will be routinely serviced in line with manufacturers' guidance.	All plant and equipment will be routinely serviced in line with manufacturers' guidance.	Frequency of servicing will take be undertaken in line with manufacturer's guidance, or as faults or excessive emissions are identified.

Ref	Abatement Measure	Description/Effect	Overall Consideration and Implementation	Trigger for Implementation
Preventative Measures				
13	Plant and equipment will be switched off when not in use	Plant and equipment will be switched off when not in use to reduce excessive emissions.	The importance of this measure will be reinforced during the daily briefing, site induction and during site walkovers (as part of the daily site inspection) by the Site Manager and the site operative nominated for visual dust monitoring.	During site walkovers (as part of the daily site inspection) by the Site Manager and the site operative nominated for visual dust monitoring, operatives will be reminded to switch off their engines if idling is identified. Incidences will be recorded in the visual monitoring checklist and appropriate action taken upon repeat offences.
14	Higher Tier generators used where possible (currently no generators used on site – this measure is only in the event generators are required and not fed by mains electricity supply).	There are currently no generators on site. For permanent infrastructure requiring constant power, in the very unlikely event it is not fed by main electric power, Tier 4 compliant generators will be used. For short term operations, as a minimum, Tier 2 or 3 will be used (where electricity cannot be provided).	Any procurement of generators will be aware of the classification and the need for the more suitable Tier 4 standard, where practically possible.	Any procurement of generators will be aware of the classification and the need for the more suitable Tier 4 standard, where practically possible.
15	Dusty load response procedure	Upon entering the site, loads are inspected on the weighbridge by staff member responsible for waste ticket collection/examination. Waste composition information is relayed onto machine driver and yard manager via two-way radio. A second inspection is undertaken during tipping. If an unacceptably dusty load is identified at either of these stages, the load will be returned to the waste producer. If the load has been tipped, it will be re-loaded internally under suppression from handheld hoses as well as the fixed dust suppression systems, adsorbing any dust generated. To note, it is the overall responsibility of the Site Manager to implement the dusty load response procedure.	The waste producer will be notified, and an investigation initiated to prevent recurrence.	Inspection and identification of dusty loads undertaken at ticket office and during tipping.
16	Daily litter pick	A daily litter pick will be undertaken by a nominated site operative who has been briefed internally on housekeeping requirements (shown in Appendix D). This will prevent build up of debris and airborne emissions of waste.	If litter has migrated offsite as identified, litter pick will also cover external highway. In the event that there is an escape of litter from the confines of the site and into the local environment, it will be the responsibility of the site staff to arrange for litter picking of the affected areas within the working day. The operation or delivery generating the escape of litter will be stopped and thereafter controlled to minimise further releases and any container releasing fugitive material will be covered or removed from site immediately. An excessive spillage of materials anywhere within the site or on the adjacent highway will be dealt with immediately by sweeping of the surface and litter picking if required. Such a spillage and the action taken will be recorded in the site diary. The EA can inspect the daily site diaries during inspections.	Visual Inspections will identify unacceptable conditions and trigger the litter pick in addition to the daily scheduled litter pick. Records of inspections or remedial actions will be made in the site diary.

Ref	Abatement Measure	Description/Effect	Overall Consideration and Implementation	Trigger for Implementation
Preventative Measures				
17	Records of visual site inspections recorded	Records of visual site inspections recorded in Site Diary and on visual monitoring checklist.	Records allow for easy review and identification of dust sources in the event of complaints/ emission incident etc.	Results and checklist of visual inspections are to be filled out and recorded each time.

4.4 Water for suppression will be primarily sourced from onsite clean storage lagoon (south side of existing quarry) supply source. This fills through natural surface water seepage. The lagoon storage capacity is conservatively assessed as 150 m^3. Alternative sources of water may include mains supply (conservatively assessed as 50 m^3 per day).

4.5 To note, this is an existing waste operation. There have never been any issues with water supply. The total potential water capacity is estimated to 200 m^3. The Operator would have access to the onsite sources.

4.6 The estimated worst-case water consumption of on-site operations is calculated below:

Table 6. Onsite worst-case water consumption

Dust suppression Activity	Worst Case Water Consumption (per day)
Water Bowser	10 m^3 x 4 site loops = 40 m^3 The bowser will need filling up 4 times per day.
Wheel wash	Daily top up of 2 m^3
Maintenance (cleaning, washing down)	Estimated at 0.5 m^3
Total	**42.5 m^3**

4.7 Based on the worst-case scenario in Table 6, the water capacity at the site can accommodate site operations.

4.8 In the event water supply fails, the Operator will cease all external loading operations. This would occur in liaison with the Local Authority and Environment Agency.

4.9 During drought / dry conditions, in the event water use is rationed, the waste operations would be stream lined and only certain operations would take place. This may include

5.0 PARTICULATE MATTER MONITORING

5.1 A daily site inspection will be undertaken by the Operator including potential sources that day, the control of dusts and the provision of controls. This information will be recorded in the Site Diary and visual monitoring checklist (attached in Appendix C). To note, any site operative can report incidents to their line manager and appropriate actions will be taken immediately. The inspection will be undertaken by the Site Manager and/or a nominated site operative who has been given appropriate internal training by Site Manager and/or Technically Competent Person (TCP), and/or environmental consultant. In the event the Site Manager is not at the site, the On-Duty Manager and/or nominated site operative will be expected to undertake the site inspection. The Site Diary is kept in the site office / welfare unit. Corrective actions are outlined in Section 6 and will be recorded in the Site Diary and effectiveness monitored.

5.2 The visual inspection will be performed on foot, allowing adequate opportunity to identify emission sources at the locations across the site and the external location (locations seen in drawing 213036/D/006), where the operative will stop to observe from each monitoring point for a minimum of 2 minutes. The visual monitoring will be undertaken prior to ceasing operations each day. Inspection of static objects (cars, street furniture, storage containers) will be used to gauge the extent of dust soiling and will be wiped clean so an accurate judgement can be performed on the subsequent inspection. To note, no out of hour visual monitoring provision is deemed necessary given control measures applied.

5.3 Weather conditions (temperature, precipitation and wind speed/direction) will be recorded on the visual monitoring checklist using a value obtained from the Met Office online resource. After completion of the inspection, the inspected wind directions will be compared against the desktop inspection. The comparison will be for information only. If the local weather conditions do not match the Met office conditions, the local conditions will take precedence.

5.4 A minimum of 2 visual inspections will be undertaken per day. During dry / windy conditions, 3 inspections will be undertaken per day. One of the checks will be before cessation of works each day. The inspections will be undertaken during normal operating hours, not during breaks. The inspections will include check of surfacing, acceptance of loads and tipping/loading activities. To ensure this system is operating effectively, it will be reviewed monthly by the Site Manager. If found to be ineffective (e.g. recurring identification of dust sources on site, poorly filled out forms), the methodology and frequency of the monitoring will be reviewed, revised and briefings will be implemented. This is the responsibility of the Site Manager.

5.5 The daily inspections will have a trigger threshold of visual dust in the form of a visible dust (this may be in plume form or separated, this may also just be felt on your skin rather than visible) within the site, as a result of vehicle movements, wind whipping or material handling. This trigger threshold is an internal site action threshold only and not a compliance threshold. There is no severity to visual dust: if it is seen, the response procedure must be implemented.

5.6 In the unlikely event this threshold is breached, the Site Manager or nominated site operative will notify the Site Team and the response procedure will be initiated. The Site Manager is responsible for the implementation of the incident response procedure. The response procedure actions are set out below. When triggered, the Site Manager and/or nominated site operative will assess the operations, waste type being handled and deliveries immediately prior to the alarm being activated;

- If the source cannot be ascertained with certainty, the Site Team will temporarily cease the most likely operation;
- If the source is within the site's control, the Site Team will take appropriate action in terms of dust/particulate abatement to ensure further observations do not encounter the same emissions for a similar activity. Actions will include:

- Review of the activity's dust control measures;
- Increased frequency of the existing control measures; and
- Temporarily suspending likely works until suitable abatement can be introduced.

- If an effective control measure cannot be identified and the internal trigger level is identified again within 30 minutes of the first identification raised; and the wind direction indicates it could be from the site; the source activity will be temporarily suspended. The activity will not resume until sufficient controls have been achieved (i.e. no visible identification). Visual inspection frequency will be every half an hour during the response procedure, until incident is closed out.

- If there are more than three incidents within a month, further targeted quantitative dust monitoring will be undertaken to establish source and effective control measures. Details of the quantitative monitoring is set out in section 5.7.

5.7 Quantitative monitoring will be undertaken within 10 working days (this covers consultant lead in times and procurement) of when the final of three incidents is identified. The quantitative monitoring will be one of the following and will be in accordance with the standard set out in M8 EA guidance:

- Pumped (active) sampling of PM10 onto filter paper; Gravimetric analysis; or
- Light-scattering optical particle counter

5.8 The monitor will be set up in accordance with supplier recommendations and environmental consultant's procedures. The focus of the monitoring will be on determining the source activities and measurements will be collated within 10 m, within 30 m and at boundary in upwind and downwind locations. This will only be undertaken in dry conditions (to recreate similar conditions to the breaches and to preserve integrity of the equipment). Monitoring will also be undertaken at specific receptors to account for any complaints/concerns.

5.9 The monitoring equipment and consultant will be carried out under MCERTS accreditation. The quantitative dust monitoring PM10 threshold will be 75 µg/m^3 over a 5-minute period average. If the quantitative action threshold is exceeded; and the wind direction indicates it could be from the site; the site will identify and cease the likely source operation until measured PM10 concentrations drop below the action threshold for a 30-minute period.

5.10 The internal action observation exceedance will be logged in the Site Diary and a report of the exceedance and corrective action response to the local EA officer via email within 1 week. To note, these are internal identifications of dust on site. Any exceedance which is not from the site but from an adjacent third-party activity, will be noted in the Site Diary.

5.11 All complaints will be logged and dealt with appropriately in accordance with the Operator's complaint procedure (shown in Appendix E).

5.12 All monitoring data will be made available to the Local Authority and Environment Agency, upon request or as specified within the Environmental Permit. This will include any reporting or notification response or contextual information regarding the monitoring data. This will be undertaken within 10 working days of when the monitoring data is issued.

Controls in the Event of Abnormal Fugitive Emissions

5.13 In the event that abnormal fugitive particulate emissions are identified during site inspections the following controls should be applied:

- take immediate action to cease operations;
- investigate the incident;
- record the incident and the remedial site action in the Site Diary; and

- the DEMP will be updated accordingly and issued to the EA for review.

5.14 Remedial actions are dependent on the source but may include, but not limited to:

- Increase the frequency of road sweeping along the operational hardstanding and public roads;
- Deploy more misting systems, including manual hosing down, specifically targeting certain locations;
- Limit activities to fewer hours each day (in addition to the standard controls being implemented);
- Stop accepting certain mixed waste types which are likely to have more friable dust potential; and
- Remove the dusty waste from site under dampened conditions immediately (under suppression systems).

5.15 In periods of drought (defined as > 35 °C over 3 days consecutively or no rainfall in 14 days) and high winds (defined as > 25mph on any day), operations will be limited in the following ways:

- Limit activities to fewer hours each day;
- Limit activities externally and focus on operating within building only;
- Wet down loads in main enclosure before transferring to external loading area;
- Limit the number of loads accepted proportional to the reduction in activities;
- Deploy more misting systems, specifically targeting tipping and loading activities, including manual hosing down of stockpiles; or
- If no limited or no water is available, the Operator will operate in accordance with section 4.9 and 4.10 of this DEMP.

5.16 In the event that these controls do not resolve fugitive particulate emissions at the site, key source activities will be suspended until suitable arrestment systems are implemented. These systems will be implemented in agreement with the Local Authority and the EA. The systems may include permanent use of remedial actions or alternative measures, as agreed. In the event that the implemented systems change, the DEMP will be reviewed and amended accordingly.

6.0 DEMP MANAGEMENT, TRAINING & RESPONSIBILITIES

Management Responsibilities

6.1 The staff member responsible for implementation, updating and review of this document is the site manager. The site manager is given appropriate training regarding this document upon induction. Upon each document revision and review by site manager, a final review of the document and evaluation of training will be undertaken by senior management.

6.2 All site operatives will receive internal dust and emissions training. Training is included within the site induction (upon the start of employment), during daily site briefings, and through toolbox talks.

6.3 As a minimum, this plan will be reviewed by the site manager on an annual basis to ensure that it is up to date, addressing the dust risks of the operations at any time. The plan will be reviewed by Senior Management either following an emissions incident quantified by a substantiated complaint, a monitoring threshold exceedance or observed emissions over the boundary or change to the processing plant. The review procedure will be undertaken within 1 month of the incident to allow any further data to be interpreted. The review will ensure mistakes are learnt from and new/improved methods will be integrated.

6.4 The main site telephone number, including site emergency number is displayed on the exterior of the site boundary on signage and the site telephone number and email are found on the website.

Complainants are readily able to contact site management through different avenues, allowing their concerns to be addressed in a timely manner.

6.5 In the event there is a change in the process or dust profile on site, the Operator will notify residents within 100 m of the site of any changes. This will be undertaken on an individual basis either by email, letter or door to door meeting.

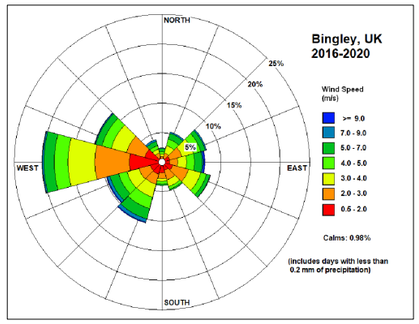
Report by:		**AA Environmental Limited** Registered office:
Author:	John McCusker Ba (Hons)	Units 4 to 8 Cholswell Court
Reviewer:	Matthew Lawman BSc (Hons) MSc	Abingdon Oxfordshire
Date:	August 2021	OX13 6HX T: 01235 536042 E: info@aae-ltd.co.uk

DRAWINGS

Key:

- Site Boundary
- 1 Access Road
- 2 Hey Head Cottage
- 3 Tong Farm
- 4 Slack Gate
- 5 Residential Dwelling along Pennine Road
- 6 Pennine Road
- 7 Dwellings along Tong Lane
- 8 St. Marys RC Primary School
- 9 Recreational Fields
- 10 Hey Head Farm
- 11 Lowland Fens Priority Habitat
- 12 Dry Corner Farm
- 13 Blanket Bog Priority Habitat
- 14 Tong Lane
- 15 Communications Tower
- 16 Agricultural Fields
- 17 Warcock Lane
- 18 Dwellings along Warcock Lane
- 19 Lower Reaps Farm
- 20 Pasture Bottom Farm
- 21 Commercial/Industrial Land Uses
- 22 Vale Street Nursery
- 23 Priority Deciduous Woodland Habitat
- 24 Bacup Britannia Community Primary School
- 25 Early Years & Childcare Centre
- 26 Irwell Medical Practice
- 27 European Protected Species- Bats
- 28 Priority Grassland Habitat
- 29 Rochdale Road (A671)
- 30 New Line Picnic Site
- Surface Water Course
- 500 m and 1 km radius
- Public Right of Way

Bingley Wind Rose:



Rev.	Details	Drawn / Chkd.	Date

Project

213036
Tong Quarry

Title

Sensitive Receptors Plan

AA Environmental Ltd
Units 4-8
Cholswell Court
Shippon Abingdon
Oxon OX13 6HX

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F:(01235) 523849
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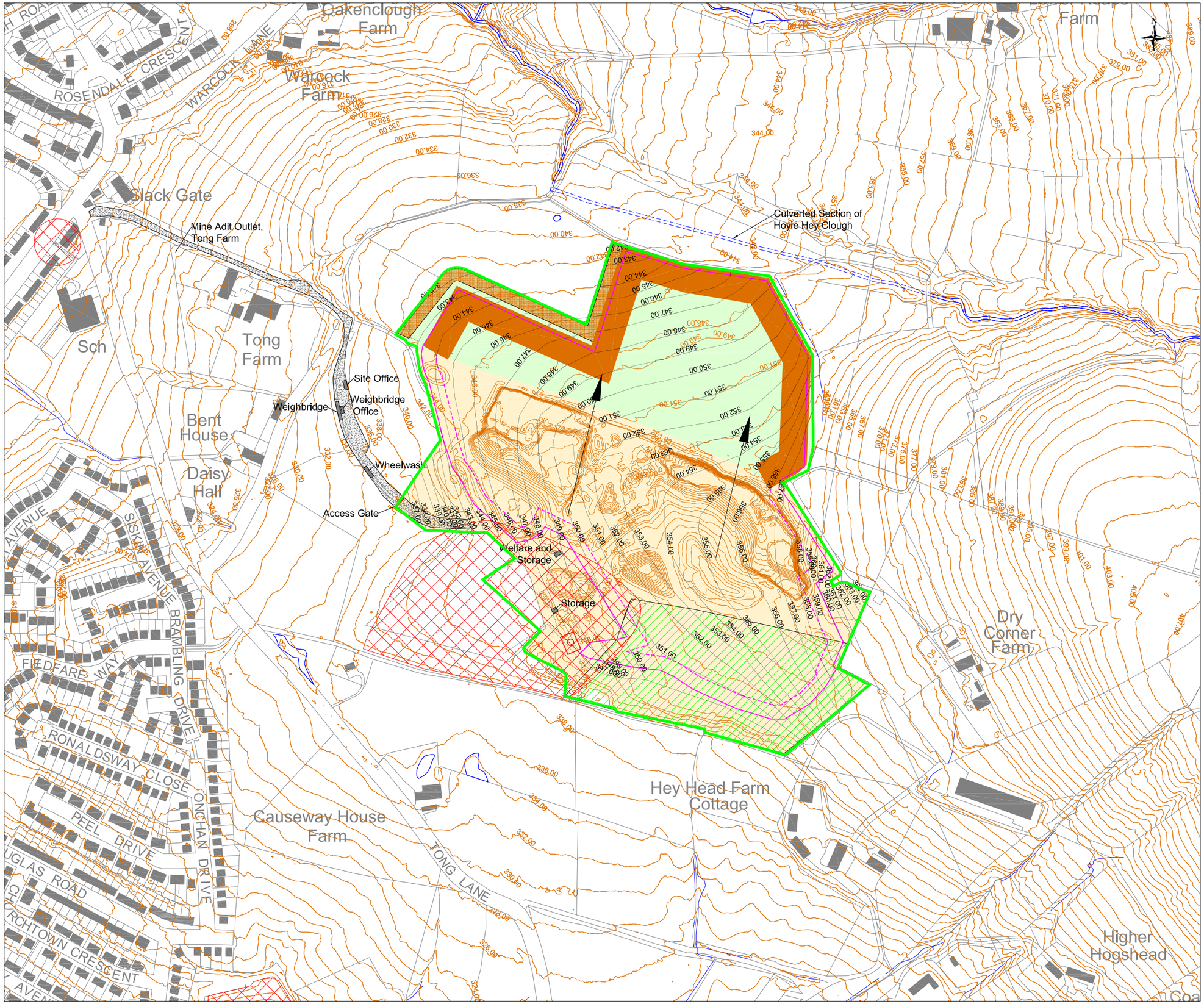
www.aae-ltd.co.uk

Environmental Consultants

Scale	Date	Drg. No.	Rev.
1:10,000@A3	Sep '21	213036/D/002	
	Drawn: JM / Chkd.: ML		



Key:

- Site Boundary
- Existing Contours (346.00)
- Proposed Contours (346.00)
- Quarry Extension Area
- Quarry Area
- Restored Area
- Historic Waste Deposit
- Engineered Sidewall Geological Separation Layer
- Proposed / Existing Top of Quarry Face
- Proposed / Existing Base of Quarry Face
- Sequence of Mineral Extraction and Restoration Works

Note:

1. Existing contours taken from Digital Terrain Model supplied by National LiDAR Program from 2019.
2. Proposed Contours taken from Restoration Scheme by Minerals and Waste Planning (drawing reference 9865A/05, January 2020).

Rev.	Details	Drawn / Chkd.	Date

Project

213036
Tong Quarry

Title

Site Layout and Waste

AA Environmental Ltd
Units 4-8
Cholswell Court
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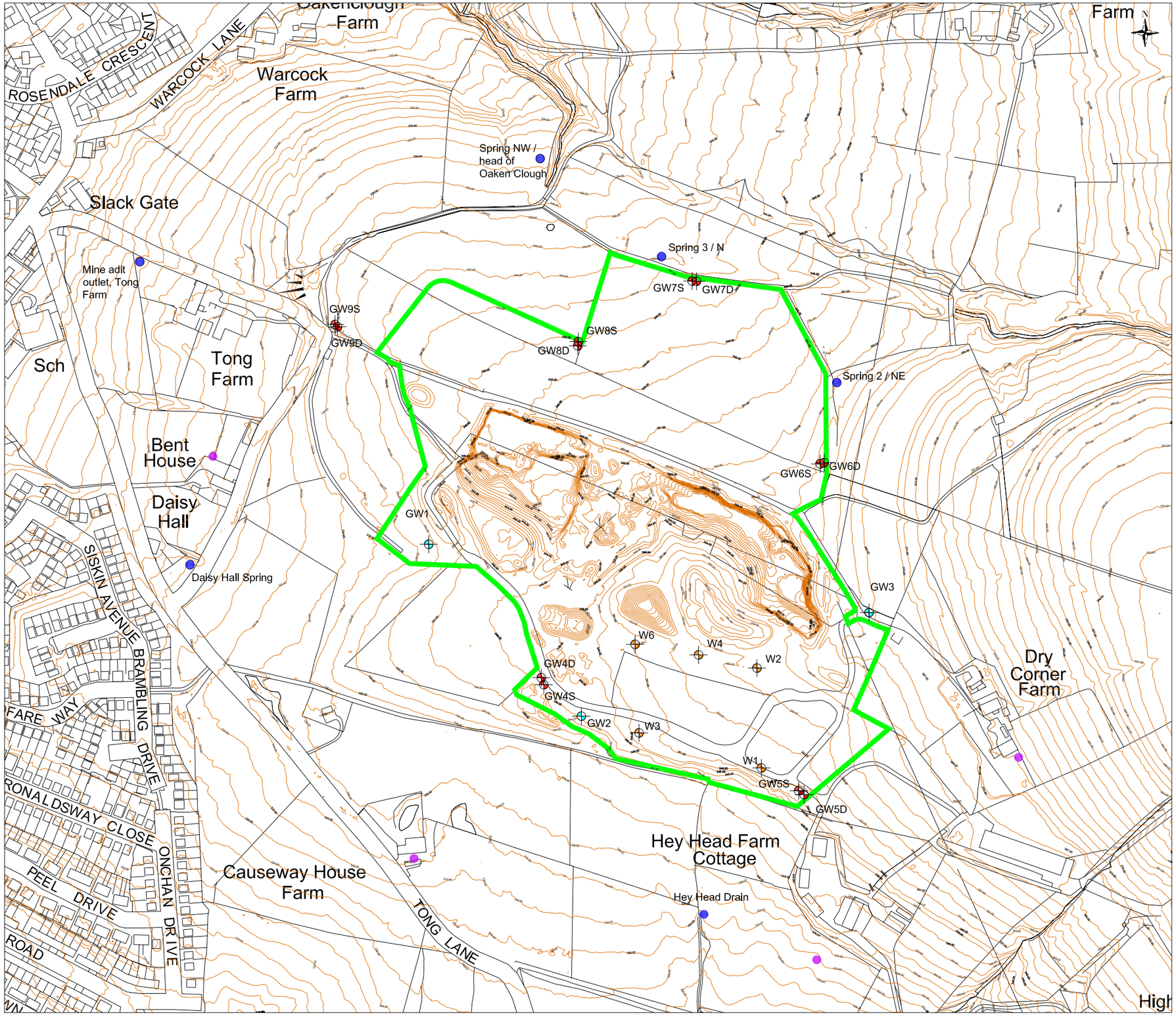
Environmental Consultants

Scale	Date	Drg. No.	Rev.
1:4,000@A3	July '21	213036/D/004	
	Drawn: JM / Chkd.: ML		



Key:

- Site Boundary
- Perimeter Borehole (2021)
- Existing Perimeter Borehole
- Existing In-waste Borehole
- Noise Monitoring Points
- Surface Water Monitoring Points
- 346 Existing Ground Level Contour (m AOD)

Notes:

1. Existing ground levels were taken from the National LiDAR Survey Data undertaken in 2019.

Surface Water Monitoring Point Coordinates		
ID	X	Y
Oaken Clough	388025	422994
Spring 3 / N	388146	422897
Spring 2 / NE	388320	422772
Hey Head Drain	388187	422245
Daisy Hall Spring	387678	422591
Mine adit outlet	387628	422892

Rev.	Details	Drawn / Chkd.	Date

Project
213036
Tong Quarry

Title
Monitoring Plan

AA Environmental Ltd
Units 4-8
Cholswell Court
Shippon Abingdon
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Environmental Consultants

Scale	Date	Drg. No.	Rev.
1:4,000@A3	Sep '21	213036/D/006	
	Drawn: JM / Chkd.: ML		

Key:

- Site Boundary
- 346.00 Proposed Contours
- Quarry Extension Area
- Quarry Area
- Restored Area
- Proposed / Existing Top of Quarry Face
- Proposed / Existing Base of Quarry Face
- Side Wall Geological Separation Layer
- Surface Water Drain
- Surface Water Attenuation Pond
- Surface Water Flow Direction
- Surface Water Course
- Q Quarantine Area
- Soil Management Area
- 3 m High Topsoil Bund
- Impermeable Concrete Surfacing
- Site Buildings / Infrastructure
- Access Gate

Note:

1. Proposed Contours taken from Restoration Scheme by Minerals and Waste Planning (drawing reference 9865A/05, January 2020).

Rev.	Details	Drawn / Chkd.	Date

Project

213036
Tong Quarry

Title

Site Infrastructure and Drainage Plan

AA Environmental Ltd
Units 4-8
Cholswell Court
Shippon Abingdon
Oxon OX13 6HX

T:(01235) 536042
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www.aae-ltd.co.uk

AAe
Environmental Consultants

Scale	Date	Drg. No.	Rev.
1:4,000@A3	Aug '21	213036/D/007	
	Drawn: JM / Chkd.: ML		

Appendix A
Emissions Risk Assessment

Assessment of fugitive emissions

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
To Air									
Dust from vehicle operations from external haul roads. Dust from operations and handling of wastes. Dust from importation of wastes. Particulate emissions from vehicle exhausts and exhausts from generators. Debris falling off vehicles and dusts caused by re-suspension of mud on the highway/haul road. Dust from waste recovery activities.	Surrounding receptors shown on drawing 213036/D/002.	Harm to human health, respiratory irritation and illness.	Air then inhalation.	Moderate	Possible	Medium	Permitted wastes include wastes with small particle sizes and potential to generate dust, especially during re-grading. Haulage, importation, and placement of waste have the potential to generate dusts from off-site movements during prolonged dry periods. The Operator will implement this dust emissions management plan.	Site wide speed limit set at 5 mph for all HGVs. All works will be undertaken in accordance with the Dust Emissions Management Plan. Haul route to be compacted and maintained, with repairs made within 24 hours. Road sweeping and surface maintenance will be implemented, with access point swept and maintained daily. Weather will be monitored and site operations limited accordingly./ higher frequency of water suppression.	Low
		Nuisance – Visual soiling/damage, deposit on cars, homes, clothing etc.	Air then deposition.	Mild	Possible	Low			
		Potential irritant, loss of habitat and damage to species.	Air then deposition in terrestrial habitats.	Mild	Unlikely	Very Low			

Appendix B
Water Bowser Example

You may now start the engine. NOTE: The engine MUST NOT be run without a water supply connected, as the pump uses the water to keep it cool and will quickly overheat if dry.

It is therefore important to flush out the air in the system by squeezing the lance's trigger as soon as the engine is running, until water flows freely from the nozzle.

Set the engines ON/OFF switch to ON, open the fuel tap and set the choke- fully closed if starting from cold, half closed if the engine is warm.

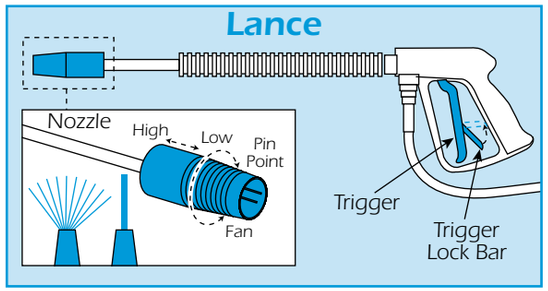
With the throttle control set to 'fast', two or three brisk pulls on the starter cord, should now start the engine.

Once the engine has warmed up, fully open the choke, and reset the throttle to idling speed.

BASIC TECHNIQUES

Set the engines throttle control to 'fast', release the trigger lock then squeeze the trigger to flush any air from the system.

The unit is now ready to begin work.



The spray pressure can be adjusted at the spray lance. For low pressure slide the nozzle forward and for high pressure slide the nozzle back.

The pressure can also be adjusted at the pump, to increase pressure turn the pressure control clockwise, to decrease, turn anti-clockwise.

The spray pattern can be adjusted to either a fan or pinpoint. To set to fan, turn the nozzle anti-clockwise to set pinpoint, turn clockwise.

If a detergent is to be sprayed, reduce the spray pressure at the nozzle. Triggering the lance will now draw the chemical into the system automatically. You can alter the percentage mix of detergent and water by turning the red chemical inlet valve anti-clockwise to increase and clockwise to decrease.

If you then wish to spray without detergent, push the nozzle back to high pressure. The chemicals will continue for a short while as the residue is cleared.

EQUIPMENT CARE

Never push the equipment beyond its design limits. If it will not do what you want with reasonable ease and speed, assume you have the wrong tool for the job. Contact your local HSS Hire Shop for advice.

Keep the equipment clean – you will find this less of a chore if you clean it regularly, rather than wait until the end of the hire period.

Handle hoses with care. Never run them over sharp edges or anywhere else that exposes them to the risk of damage.

Regularly check the fuel level and top up as required using the correct fuel: lead-free petrol.

Check the engine oil level daily. Let the engine cool, stand it on level ground, withdraw the dipstick and wipe clean. Now, replace the dipstick, withdraw it a second time and verify that the oil level is between min and max. Top up as necessary.

When not in use, **store the equipment somewhere clean, dry and safe** from thieves. And **where it will be protected from frost at all times.**

FINISHING OFF

To switch the engine OFF, set the throttle to idle, switch the ON/OFF switch into the OFF position and wait for the engine to stop, then turn off the fuel tap.

Shut off the water supply and disconnect the supply hose fitting at the pump, simply turn anti-clockwise (see illustration) **trigger the lance to drain any remaining water then refit the supply hose to the pump. During cold weather any remaining water may freeze and failure to drain the system may damage the pump.**

Disconnect the pressure hose, drain out any water it may contain and **coil it neatly.**

You should now empty the bowser of any remaining water (if being collected by an HSS vehicle, the driver will refuse to collect unless it has been emptied).

Clean the unit as thoroughly as possible, ready for return to you local HSS Hire Shop.

...any comments?

If you have any suggestions to enable us to improve the information within this guide please fax your comments or write to the Product Manager at the address below

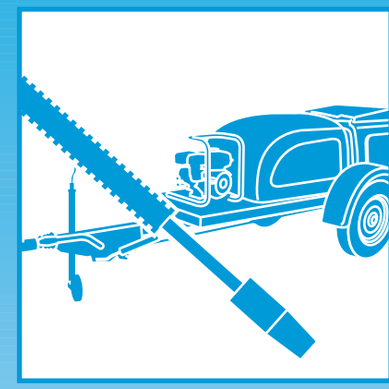
Fax: 020 8687 5001

Group Office: 25 Willow Lane, Mitcham, Surrey CR4 4TS

Web Site: http://www.hss.co.uk

Operating & Safety Guide 986 10/986

HSS Hire Shops



Pressure Washer Bowser

A combination of a road towable water bowser and a petrol driven pressure washer. Ideal for use where there is neither a water supply nor electrical power.

Code 60116

GENERAL SAFETY

For advice on the safety and suitability of this equipment **contact your local HSS Hire Shop.**

There is a serious risk of personal injury if you do not follow all instructions laid down in this guide.

The hirer has a responsibility to ensure that all necessary risk assessments have been completed prior to the use of this equipment.

This equipment should only be used by an operator who has been deemed competent to do so by his/her employer.

This equipment should be used by an able bodied, competent adult who has read and understood these instructions. Anyone with either a temporary or permanent disability, should seek expert advice before using it.

Keep children, animals and bystanders away from the work area. Cordon off a NO GO area using cones and either barriers or tape, available for hire from your local HSS Hire Shop.

Never use this equipment if you are ill, feeling tired, or under the influence of alcohol or drugs.

Safety goggles MUST be worn by everyone in the work area.

This equipment generates potentially harmful noise levels. To comply with health and safety at work regulations, **ear defenders must be worn** by everyone in the vicinity.

Wear practical, protective waterproof clothing, gloves and footwear. Avoid loose garments and jewellery that could catch in moving parts, tie back long hair.

Take all necessary precautions to protect yourself and others against the possibility of contracting infectious diseases in your work environment.

Ensure the work area is well lit and ventilated, if in doubt, ask about lighting and ventilation equipment at your local HSS Hire Shop.

When full, the bowser weighs 750kG, only tow the bowser with a suitable vehicle.

Exhaust Danger

NEVER operate petrol engines indoors or in a confined space.

The exhaust contains gases that can Kill.

Pressure washing equipment can cause serious injury, so take care. Never point the spray lance at anyone and always engage the trigger safety lock when not actually washing.

Never direct the spray at or near anything electrical.

Take care where you lay hoses. Avoid running them where there is a risk of someone tripping over them.

Fuel Safety

NEVER refuel while the engine is hot or running. Never smoke or allow naked lights into the area while refuelling. Never inhale fuel vapour.

ALWAYS mop up spillages as quickly as possible, and change your clothes if you get fuel on yourself.

ALWAYS store fuel in a purpose-made sealed container, in a cool, safe place well away from the work area.

Always switch OFF the equipment when not in use.

Engines, especially the exhausts, get very hot so switch OFF and allow to cool before touching them.

Keep flammable materials well away from engine and exhaust.

Do not run the pump, with the lance trigger in the closed position, for more than 5 minutes. The pump needs a good flow of water to keep it cool. Without water movement, the pump will overheat and expensive damage will be caused.

If working above ground level, work from a suitable, stable platform, an access tower for example. Never work from ladders or steps.

Watch your footing. Take special care if working other than on firm, level ground.

Check the condition of the equipment before use paying special attention to tap connections, filler caps/lids and tyres. If it shows signs of damage or excessive wear, return it to your local HSS Hire Shop.

Ensure the tyres are in a road worthy condition and inflated to 35psi (2.4 bar)**.**

NEVER drink the water from a water bowser.

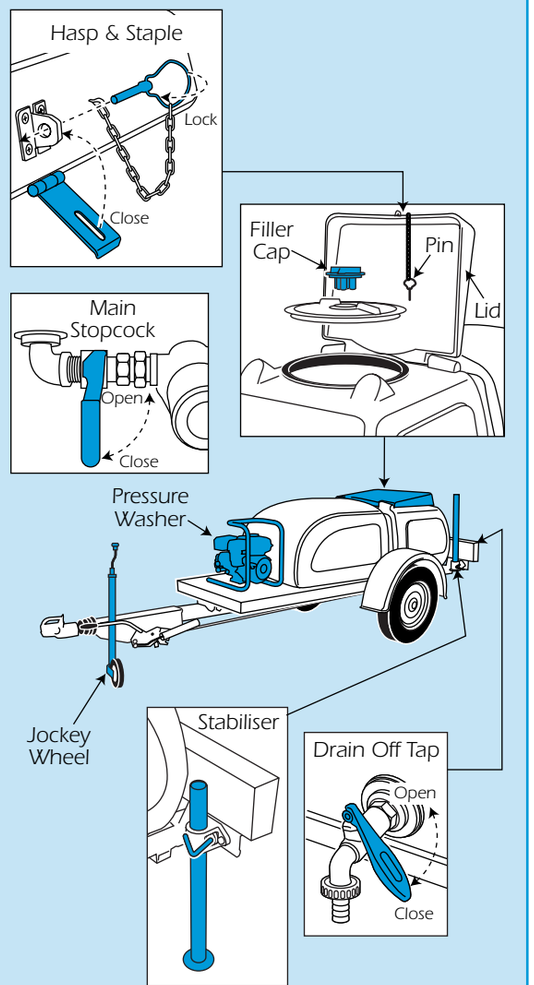
GETTING STARTED

You may only fill the pressure washer bowser with clean fresh drinking water, if the water becomes contaminated, contact your local HSS Hire Shop for advise.

Take the bowser to the source of water, check that the drain off tap and main stop cock are closed, then unscrew and open the filler cap.

Insert the supply hose (ensuring it is held securely) **and begin filling.**

Water Bowser



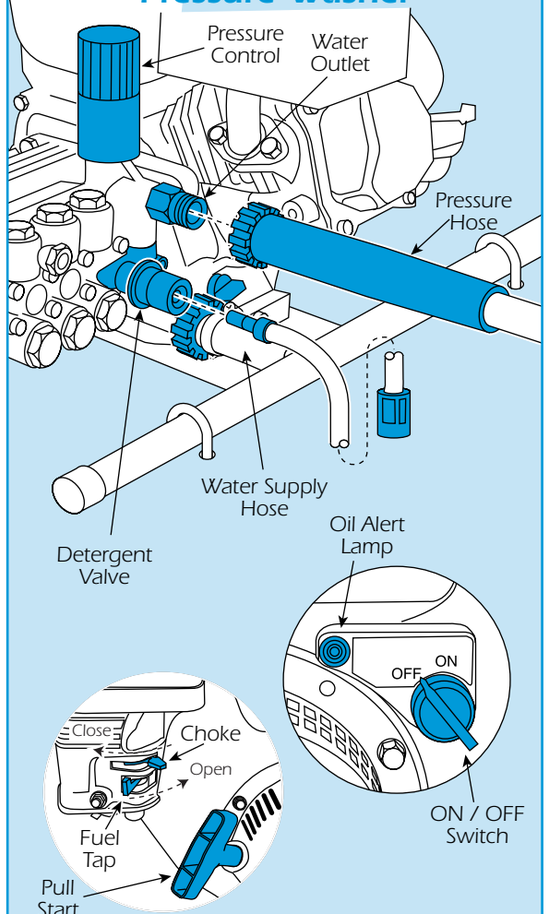
Fill the bowser until the water is no more than 300mm from the top, then turn off the supply and close and lock the filler cap.

Stand the bowser on a firm, level surface strong enough to bear its weight as far from the work area as the pressure hose will allow.

DO NOT park on slopes, soft ground or where there is a risk of subsidence.

Apply the handbrake and unhook from any towing vehicle, then set the jockey wheel to the correct height. For additional safety, deploy the rear stabiliser.

Pressure Washer



Check the engine oil and fuel levels, (see EQUIPMENT CARE').

Screw the pressure hose finger tight onto the unit's water outlet (see illustration).

The unit's water inlet is permanently connected to the bowser via a stopcock positioned under the front of the trailer unit. To open turn anti-clockwise 1/4 turn so that the lever is in line with the supply pipe.

This unit can be used to spray a mixture of water and detergent. Simply push the chemical suction hose into the red chemical inlet valve (push fit), then place the filter end of the hose into the detergent's container.

Lock the lances' trigger OFF using the trigger lock bar (see illustration).

Appendix C
Visual Monitoring Checklist

Visual Monitoring Checklist

Date		Completed by		Site Manager	

	Inspection Point 1	Inspection Point 2	Inspection Point 3	Inspection Point 4	Inspection Point 5
Start Time					
Wind Direction					
Wind Speed (m/s)					
Visible Dust Soiling?					
Notes					
Action Required ?					

Appendix D
Housekeeping Requirements

Housekeeping activity	Area of the site	Frequency	Personnel	Record
Litter inspection and pick	Whole site	Daily – typically beginning of each working day	Nominated operative	Daily Site Diary
Manual brush	Access / egress to the site	Daily - if mud on road is identified	Nominated operative	Daily Site Diary / visual monitoring form
Road sweeper brush	Access / egress to the site	Daily - if mud on road is identified	Nominated operative / third party contractor	Daily Site Diary / visual monitoring form
Concrete hardstanding HGV route inspection – cleared of debris using front loader	Internal haul route	Daily – beginning and end of each day	Plant operator	Daily Site Diary
Welfare unit clean	Welfare unit	Weekly	Third party contractor	Daily Site Diary

Appendix E
Complaints Form & Procedure

Complaints Procedure

INTRODUCTION

This Complaints Procedure outlines how the Operator will respond in the event of a complaint. A complaint may arise relating to the site permitted activities involving a nuisance (dust, noise, odour, pests). This procedure contains information on how any complaint will be investigated and any actions taken as a result of the complaint.

KEY CONTACTS

The key contacts will be shown on the site notice board at the site entrance. Alternatively, any complaints can be made at the site to any site operative and/or the Site Manager. The contacts are shown below.

Contact	Role	Contact Number
On site Site Manager	Responsible for operation at the site under the Environmental Permit and their staff at the site	TBC
Supervisor / Engineer	Responsible for implementing and inspection of controls at the site under the Environmental Permit and their staff at the site	TBC

PROCEDURE

1. Any complaints made will be immediately logged by the Site Manager and/or Site Operative. In the event a complaint is made to a Site Operative, the Site Operative will refer the complaint to the Site Manager. If able to do so, the complainant details will be taken on initial contact either by phone or in person.

2. The Site Manager (or nominated operative) will discuss any concerns with the complainant directly within 1 working day of the complaint being made; and request contact details to notify the complainant of any updates/corrective measures. The complain will be logged using the Complaint Form (attached) and given a unique reference number.

3. The Site Manager will review the site activities and ensure control measures are in accordance with the Site's Management Systems.

4. The Site Manager will investigate the location of concern raised in relation to the site i.e. at a local receptor location and/or public highway to inspect the impact on the receptor.

5. The Site Manager will notify the complainant of any updates to the control measures / site operations. Control measures may be corrective and/or preventative and include additional control measures and/or increase the frequency of an existing control measure. Alternatively, the design of the site operations may change to decrease nuisance to that receptor.

6. In the event the same issue persists, the Site Manager will further review site operations and control measures. This may require a temporary cessation of certain operations whilst additional measure is implemented. The works will not recommence until further control measures have been incorporated and a review of effectiveness has been agreed / witnessed by the Site Manager. The complainant will be kept abreast of further measures.

The target close out of any complaint is within 1 week of point 1 however this is dependent on the complaint, effectiveness of control and any third-party testing required to quantify complaint and/or control.

Complaints Procedure

RECORDS

On site Records
A copy of this procedure is kept on site and briefed to all site operatives upon site induction. Any identified complaints, incidents or accidents, as well as corrective measures, are recorded in the Complaint Form. Copies of the complaint forms are kept on site.

Review
This procedure is reviewed on a yearly basis or post-incident to ensure it remains up-to-date with the site operations.

Complaint Form

Complaint Form Reference No.	

Date of Complaint	

Details of Complainant			
Name			
Address			
Contact Number		**Email Address**	
Nature of Complaint			
Reported To		**Date of Incident (if different to date of complaint)**	
Corrective Measure Taken			
Follow up Communication with Complainant			
Preventative Measure Taken (if any)			
Sign off		**Close out Date**	

Appendix F

Extract on Grading Classification in DEFRA Code of Practice

DEFRA Code of Practice – Principles of litter, refuse and detritus in highway and hard surface setting

Set A: litter and refuse in both relevant highway and hard surface setting

Grade A
No litter or refuse

Grade C
Widespread distribution of litter and/or refuse with minor accumulations

Grade B
Predominately free of litter and refuse apart from some small items

Grade D
Heavily affected by litter and/or refuse with significant accumulations

Set C: principles of detritus grading in a relevant highway setting

Grade A
No detritus

Grade C
Widespread distribution of detritus with minor accumulations

Grade B
Predominantly free of detritus except for some light scattering

Grade D
Heavily affected by detritus with significant accumulations