DUST MITIGATION AND MONITORING PLAN

May 2, 2023

Project: 2315A

Coast Mountain Resources Ltd. (2020)
300 – 19923 80A Avenue
Langley, BC V2Y 0E2

ATTENTION: Kyle Dolan

REFERENCE: Bamberton Quarry – Dust Mitigation and Monitoring Plan

1 INTRODUCTION

Active Earth Engineering Ltd. (Active Earth) has been retained by Coast Mountain Resources Ltd. (2020) (CMR) to prepare a Dust Mitigation and Monitoring Plan (DMMP) for the Bamberton Quarry, Malahat, on Vancouver Island (the "Site").

This plan has been developed to control the offsite transport of fugitive dust to prevent it from becoming a nuisance visibly or physically for local residents and property owners. This inherently includes the protection of off-Site human health. All reasonable measures should be taken to minimize the generation of dust and/or air contaminants generated by equipment or project work processes into public or work areas.

This plan was prepared in general accordance with the Ministry of Environment and Climate Change Strategy guidance document 'How to Develop a Fugitive Dust management Plan".

Note this plan has not been prepared to address Occupational Health and Safety (OHS) for on-Site workers. Rather, this plan is to address fugitive dust from adversely impacting the public, which includes surrounding local residents and property owners.

2 ROLES, RESPONSIBILITIES, AND CONTACTS

2.1 Roles and Responsibilities

The three main roles required to carry out the DMMP are the:

1. **Property Owner**- the owner of the legal parcels of land on which the quarry is situated.

2. **Operator**- has overall responsibility for the project and quarry operations and leases the land from the Property Owner. The Operator is ultimately responsible for the implementation of the DMMP.
3. **Environmental Consultant** - an independent Qualified Environmental Professional (QEP) that is under contract with the Operator to provide environmental guidance to the Operator.

Other members of the project team may also be assigned specific roles as needed and would be responsible for the correct application of the DMMP. Individual specialists may also be appointed to provide expert advice.

The Environmental Consultant is responsible for assisting and representing the Operator in all matters related to the protection of the environment, and shall be available to attend all meetings where environmental protection measures are discussed. In addition, the Environmental Consultant shall be retained to inspect, evaluate and report on the performance of the quarry operations and effectiveness of dust monitoring and mitigation measures. The key responsibilities will include the following:

- Provide technical assistance on environmental matters related to dust.
- Inspect, monitor, and record quarry operations to ensure that dust levels are not affecting local residents and property owners.
- Provide recommendations for modifying and/or improving dust monitoring and mitigation measures, as necessary.

We note that the Environmental Consultant must be retained under contract by the Operator to conduct the tasks indicated above, in order for the Environmental Consultant to be considered be considered responsible for those tasks.

2.2 Contacts

The key contact list is provided below.

KEY CONTACT LIST

Company / Project Role	Name	Key Contact List
Malahat Investment Corporation – Property Owner	Josh Handysides	(250) 701-1966
CMR – Operator	Kyle Dolan	(604) 605-2592
Active Earth – Environmental Consultant	Marek Downarowicz	(778) 430-5475

3 SITE DESCRIPTION

3.1 Site location

The Site is situated on the eastern slope of the Malahat Ridge on Vancouver Island, dipping down towards the Saanich Inlet. Mount Wood is located to the west of the Site and is the highest point in the surrounding area.

The Site is located approximately 4.5 km south of the town of Mill Bay on the southern end of Bamberton Road, located directly east of Highway 1.

3.2 Facilities

The facilities on-Site consist of a weigh scale and mobile offices on the northern portion of the quarry, and a crusher system centrally located in the quarry.

3.3 Climate

Climate normal for the period of 1981 to 2010 were obtained from the Saanichton CDA Station, located approximately 8.7 km to the east from the Site. Average temperatures and precipitation are summarized in the table below.

TABLE A – CLIMATE NORMALS (1981 – 2010) FOR SAANICHTON CDA STATION

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Daily Average Temperature (°C)	4.8	5.3	7.1	9.3	12.2	14.9	17.0	17.1	14.6	10.3	6.6	4.5	**10.3**
Rainfall (mm)	136.9	85.4	77.4	51.5	41.5	34.7	20.5	26.5	29.6	92.6	155.0	134.7	**886.3**
Snowfall (cm)	8.1	4.1	1.9	0	0	0	0	0	0	0.4	0.8	6.7	**22.0**
Total Precipitation (mm)	217.9	126.4	96.4	51.5	41.5	34.7	20.5	26.5	29.6	96.6	163.0	201.7	**1,106.3**

The area receives approximately 886.3 mm of rainfall and 22 cm of snowfall annually. The wettest months are January and December, with average monthly rainfall amounts ranging from 20.5 mm (July) to 217.9 mm (January). The maximum monthly precipitation is 217.9 mm in January, of which 63% falls as rain. Months that are considered to be dry and more susceptible to problematic fugitive dust are April – September. Extra diligence to prevent significant releases of fugitive dust into the environment must be had during these months.

Relatively wet months, October – March are generally humid enough and experience sufficient regular precipitation such that dust generated from quarry activities will be inhibited from easily rising and migrating off-Site. Care and monitoring are still warranted during these months.

4 SOURCES OF FUGITIVE DUST

4.1 Source of Fugitive Dust

Sources of dust during quarrying may include soil and overburden removal, extraction through blasting or excavation, material processing, and general material-handling operations.

Active Earth completed a site visit alongside CMR representatives on November 3, 2022, to observe the quarry operations and identify the potential dust producing operations and areas. The following potential dust producing operations and areas were identified:

- Overburden Removal
- Drilling in Bedrock
- Bedrock blasting
- Pushing rock down quarry walls
- Truck loading and offloading
- Traffic on roads
- Crushers
- Loading of crusher system
- Stockpiles generated via conveyor systems
- Stockpiles generated via trucks

In all cases the dust was originally sourced locally from bedrock or overburden soils. Raised wind conditions and hot/dry weather can propagate and elevate fugitive dust.

The sources identified are understood to only present a risk of dust generation when the Site is active and operational during working hours.

4.2 Source List Review

The sources of fugitive dust were compiled with input from CMR representatives during the on-Site inspection in November 2022. This list is subject to change when changes in operations occur. As such, this DMMP must be reviewed regularly (annually at minimum) by the Operator and the Environmental Consultant.

At all times, the Operator will be responsible for monitoring and identifying any new potential sources of fugitive dust. During regular inspections (discussed below) the Environmental

Consultant shall also monitor for changes in operations and dust generating activities, and shall communicate any newly identified sources to the Operator. The source list shall be revised as warranted.

5 FUGITIVE DUST MITIGATION MEASURES

All reasonable measures to minimize the generation of dust and/or air contaminants generated by equipment or project work processes shall be undertaken by the Operator. The following mitigations measures should be applied to suppress dust generated from specific areas/activities:

5.1 Overburden Removal

Overburden removal is considered to be a low dust generating activity due the existing moisture content in organic overburden soils. No active dust mitigation is currently proposed. If dust generation is observed, the contingency plan for this activity is to spray water on the overburden prior and during disturbance using water trucks and associated sprayers.

5.2 Drilling in Bedrock

Rock drilling is considered a low-moderate dust generator and this mitigation measure will likely be only needed during dry months when experiencing elevated wind conditions and dry weather. The primary dust suppressant mechanism will be a built-in dust collection system fixed to the drill.

As a contingency a water truck should be available to spray drilling equipment and lightly shower water onto the drill activities during periods of excessive dust generation. This may need to occur hourly during periods susceptible to excessive dust generation. Frequency and volume will depend on the conditions observed.

5.3 Bedrock Blasting

Water trucks and sprayers should be used to mitigate dust during rock blasting. As the location of blasting activities varies across the upper quarry, this mitigation method is considered the most suitable to address excessive dust generation. Rock blasting is considered a moderate dust producer and this mitigation measure will likely be only needed during dry months when experiencing elevated wind conditions and dry weather.

A water truck should be available to spray dust the area being blasted. This should occur prior to each blast during conditions noted above. The contingency plan for this dust generating activity is to increase watering volume and frequency.

5.4 Pushing Rock Down Quarry Walls

Temporary high volume and large radius sprinkler stations should be erected on the top of quarry walls where blasted rock is being pushed over the ledge, to supress dust particulate. Sprinklers should target the ledge and the area below where blasted rock accumulates and must have sufficient range to cover the entire rock-fall area. This activity is considered a high dust generator. The sprinklers should be connected to existing site water supply lines and should operate non-stop during working hours during dry months when experiencing elevated wind conditions and dry weather. However, it's possible that these sprinklers may need to be turned on periodically outside of the aforementioned conditions if elevated dust generation is observed.

The contingency plan for this dust generating activity is to augment the spraying capacity through the use of water trucks and associated sprayers.

5.5 Truck Loading

The loading of materials into trucks from loaders is considered to be a low dust generating activity. Material being handled by trucks and loaders will typically contain moisture from other prior dust mitigation activities. No active dust mitigation is currently proposed. The contingency plan for this low dust generating activity is to suppress any generated dust through the use of water trucks. Further details on off-loading are discussed in *Section 5.9 Stockpiles Generated via Trucks*.

5.6 Traffic on Roads

Water trucks and sprayers will be used to mitigate dust being generated from road use. As roads are present throughout the Site, this mitigation method is considered the most suitable to address excessive dust generation. Road use is considered a moderate dust generator and this mitigation measure with likely be only needed during high wind conditions and dry weather during dry months. However, it's possible that road watering may need to occur periodically outside of the aforementioned conditions if elevated dust generation is observed.

A water truck should be available to spray water on roads. This may need to occur hourly especially on roads with high traffic. The contingency plan for this moderate dust generating activity is to increase watering volume and frequency.

Note that in addition to the above, hard surface roads (concrete or asphalt) are to be swept regularly to remove accumulated dust. This should occur daily during the dry months.

5.7 Crusher Loading System

A low volume and small radius sprinkler/mister system should be installed on the crusher hopper to mitigate dust generated from loading the hopper, as/when needed. This can be installed on the system itself and spray should be directed just above the hopper to lightly wet material being offloaded into the hopper. This activity is considered a moderate dust generator. The sprinklers

should be hooked up to existing site water supplies and should operate non-stop during high wind conditions and dry weather during dry months. However, it's possible that these sprinklers may need to be turned on periodically outside of the aforementioned conditions if elevated dust generation is observed.

The contingency plan for this moderate dust generating activity is to augment the spraying capacity through the installation of additional low volume sprinklers/misters.

5.8 Crusher

A low volume and small radius sprinkler/mister system should be installed on the crusher to mitigate dust generated from the crusher activity, as/when needed. This can be installed on the system itself and spray should be directed just above the crusher to lightly wet the air and dust being generated from the crusher. This activity is considered a high dust generator. The sprinklers should be hooked up to existing site water supplies and should operate non-stop during high wind conditions and dry weather during dry months. However, it's possible that these sprinklers may need to be turned on periodically outside of the aforementioned conditions if elevated dust generation is observed.

The contingency plan for this moderate dust generating activity is to augment the spraying capacity through the installation of additional low volume sprinklers/misters.

5.9 Stockpiles Generated via Conveyor Systems

A low volume and small radius sprinkler/mister system should be installed on the upper ends of the conveyor systems to mitigate dust generated from the dropping of material into stockpiles, as/when needed. This can be installed on the system itself and spray should be directed down to the stockpile to lightly wet the air, the stockpile material, and dust being generated from the falling material. This activity is considered a moderate-high dust generator. The sprinklers should be hooked up to existing site water supplies and should operate non-stop during high wind conditions and dry weather during dry months. However, it's possible that these sprinklers may need to be turned on periodically outside of the aforementioned conditions if elevated dust generation is observed.

Minimizing drop heights and/or using overed chutes may reduce the amount of water required for dust suppression at conveyor drop-points (and reduce noise).

The contingency plan for this moderate dust generating activity is to augment the spraying capacity through the use of water trucks.

5.10 Stockpiles Generated via Trucks

A high volume and large radius sprinkler system or use of a truck and sprayer should be used to wet stockpiles and mitigate dust generation from moving/falling material resulting from end

dumping. This activity is considered a moderate dust generator. The sprinklers should be hooked up to existing site water supply lines and should operate non-stop during high wind conditions and dry weather during dry months. Alternatively, a truck and sprayer should be used to wet stockpiles; the frequency will depend on conditions but may be as frequent as every hour.

The contingency plan for this moderate dust generating activity is to augment the spraying frequency and volume with water trucks.

5.11 Summary Table

The following table has been provided to summarizes the identified fugitive dust sources on-Site.

FUGITIVE DUST SOURCE SUMMARY TABLES

	Risk	Mitigation Measure	Contingency Plan
Overburden Removal	Low	None	Water Trucks
Drilling in Bedrock	Low-Moderate	Built-In	Additional Water Trucks
Bedrock Blasting	Moderate	Water Trucks	Additional Water Trucks
Pushing Rock Down Quarry Walls	High	HV Sprinklers	Additional Water Trucks or HV Sprinklers
Truck Loading	Low	None	Water Trucks
Traffic on Roads	Moderate	Water Trucks	Additional Water Trucks
Crushers	High	LV Sprinklers	Additional LV Sprinkler
Loading of Crusher System	Moderate	LV Sprinklers	Additional LV Sprinkler
Stockpiles Generated via Conveyor Systems	Moderate	HV Sprinklers	Additional Water Trucks
Stockpiles Generated via Trucks	Moderate	Water Trucks or HV Sprinklers	Additional Water Trucks

HV Sprinkler – High-volume sprinkler LV Sprinkler – Low-volume sprinkler

6 MITIGATION OBJECTIVES

The purpose of the monitoring is to verify whether fugitive dust is being generated which may adversely affect the public either aesthetically or physically, and to verify whether mitigation measures are being appropriately implemented.

6.1 Aesthetic Objectives

To eliminate and/or mitigate visual impacts to the public, **fugitive dust plumes are not to exceed 10m in height measured from the surface elevation at the source, to the top of the visible plume.**

Laterally fugitive dust plumes are not to exceed 10m from the outside perimeter of the source. No visible dust plumes are to extent off-Site toward neighbouring lands.

6.2 Physical Objectives

To eliminate any physical impacts to neighbouring properties through the settlement of fugitive outside of the quarry, **fugitive dust must be suppressed to the point that it does not propagate outside the quarry area.** Maintaining the aesthetic objectives will ensure that the physical objectives are met.

7 PLAN IMPLEMENTATION

7.1 Training

The Environmental Consultant should present the DMMP and provide training to the Operator and their staff to ensure that the plan is fully understood. Staff sign-off on this training/orientation should be documented. All CMR quarry staff are to be familiar with the DMMP and partake in the mitigation and monitoring of fugitive dust. As part of the training, all CMR quarry staff will become familiar with:

- The DMMP
- Their individual roles and responsibilities
- Contact information of the Operator and Environmental Consultant and the chain of communication.

Training must be provided to new staff working in the quarry within the first two weeks of starting. It is the Operator's responsibility to ensure that this training is conducted, and records of such training are maintained.

Mitigation measures discussed above should be implemented immediately and must be in place and operational ahead of the upcoming dry months.

8 FUGITIVE DUST MONITORING

The fugitive dust monitoring activities should be tailored to the needs of the Site and shall generally include visual inspection and monitoring of facilities by Site personnel and the Environmental Consultant, and record keeping including public complaints (if any).

8.1 Monitoring and Records

Monitoring of fugitive dust will be primarily visual. The responsibility to complete regular monitoring will be held by a designated representative of the Operator, however all quarry staff

have a responsibility to notify the Operator or designate if fugitive dust appears to exceed the thresholds as specified above.

Visual dust monitoring should be undertaken on (at least) a daily basis during the wet months and twice daily during the dry months by the designated responsible member of the site personnel. Visual assessments should be undertaken at all fugitive dust sources detailed in Section 4. In the event of increasing wind speeds and changes in wind direction, the frequency of monitoring should be increased. A daily logbook should be maintained of the visual assessments which should include at a minimum the following:

- Date and time
- Weather conditions (temp, winds, humidity)
- Dust conditions at each source:
    - Fugitive dust plume dimensions in metres
    - Whether conditions at each source meet the objectives (aesthetic and physical) described above
        - If it doesn't meet the objectives, the corrective actions taken and their effectiveness should be recorded along with the time it took to revert into compliance with the objectives.
- Name and signature of designate completing the monitoring

In addition, the Environmental Consultant should undertake visual inspections bi-weekly (every two weeks) during the wet months and weekly during the dry months and will record their observations in a separate but similar logbook as described above.

All records should be stored for at least 2 years.

Note that during the first year of monitoring the EC shall take occasional handheld measurements during the dry months within and immediately outside the visible plume areas comparing the results to human health exposure guidelines, to determine the effectiveness of visual monitoring.

8.2 Corrective Action

Should the aesthetic objectives be exceeded, the Operator or designate must be informed immediately. Corrective action through the contingency plans describe in Section 5 must be implemented as soon as reasonably possible. The Operator is ultimately responsible for reacting and implementing corrective actions.

Should the physical objectives be exceeded, the Operator and Environmental Consultant, must be notified immediately. Operations should be halted until fugitive dust can be suppressed such that it does not exceed the physical objectives. In addition, the implementation of corrective actions

through the contingency plan must show that fugitive dust is being suppressed such that it is decreasing and will meet the physical and aesthetic objectives within a reasonable timeframe (e.g., 1 hour). Should the physical objectives be exceeded, the Operator and Environmental Consultant are required to review the DMMP and the project processes to mitigate any future physical objective exceedances.

Public complaints should be reviewed by both the Operator and the Environmental Consultant. Where possible and reasonable, all efforts should be made to address the complaint mitigating the possibility of similar future events.

Any exceedances, whether aesthetic or physical, or public complaints, must be recorded by the Operator in the logbook.

9 LIMITATIONS

The use of this report by anyone is subject to the following conditions and limitations:

1. This report has been prepared for Coast Mountain Resources Ltd., for the specific use referred to herein. The client and appropriate authorities, including the BC Ministry of Energy, Mines, and Low Carbon Innovation, may rely on this report. It is not reasonable for any other party to rely on the contents of this report without first obtaining written authorization from the client and Active Earth Engineering Ltd.
2. Liability is expressly denied to any person other than the parties indicated above and those who obtain written consent. Accordingly, Active Earth Engineering Ltd. does not accept responsibility for any damage suffered by any such person as a result of decisions made or actions based on this report. Diligence by all intended users is assumed.
3. This report is believed to provide a reasonable representation of the general environmental condition at the Site. The conclusions made in this report reflect Active Earth's best judgment in light of the information available at the time of reporting. Should additional information become available, or Site conditions change, the conclusions and recommendations of this report may be subject to change.
4. Active Earth Engineering Ltd. has agreed to conduct this assessment and prepare this report as requested by the client named in the report for the use specified by the client, which is stated in the report. The client has agreed that the performance of this work and the report format are appropriate for the intended use.
5. Written consent from Active Earth Engineering Ltd. must be obtained before any part of the report can be used for any purpose by anyone other than the client and other intended users identified in the report. Liability to any other party or for any other use is expressly denied regardless of who pays Active Earth Engineering Ltd.'s fee. Written consent and approval of Active Earth Engineering Ltd. must also be obtained before the report (or any part of it)

can be altered or conveyed to other parties or the public through prospectus, offering memoranda, advertising, public relations, news, sales or other media.

10 CLOSURE

We trust this provides the information required at this time. If you have any questions, or require additional clarification, please contact the undersigned.

Yours truly,

ACTIVE EARTH ENGINEERING LTD.

Prepared By:

Marek Downarowicz, P.Geo.
Associate, Environmental Professional

Reviewed By:

Steve Boyce, B.A. (Env)
Principal, Senior Scientist