



# Roydon Quarry Dust Management Plan

220 Jones Road,  
Templeton,  
Christchurch

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**REVISION TABLE**

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March 2022	R1	Initial draft for comment	S Edwards
March 2022	R2	Initial draft updated	S Edwards
March 2022	R3	Initial draft peer review from CLG	S Edwards
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Sept 2025	R7	Update for Water Take changes and Bund completion.	D Chittock

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## 1.0 INTRODUCTION

The purpose of this Dust Management Plan (DMP) is to provide a framework for managing dust emissions at Roydon Quarry, so that potential adverse effects at or beyond the site boundary are avoided or mitigated.

All dust management at the site will be undertaken in accordance with this DMP and CRC224104 which will be available on-site at all times. This DMP covers the following:

- Site and Surrounding Environment
- Roles and Responsibilities
- Site Operations
- Sources of Dust
- Mitigation and Management Practices
- Monitoring
- Reporting
- Complaint Response
- Annual Reporting
- DMP Review

The DMP should also be read in conjunction with all other Management Plans for Roydon Quarry.

### 1.1 Legal Obligation

This DMP and its contents are required by conditions 3 to 8 of discharge permit CRC224104, authorised by the Canterbury Regional Council (CRC). This consent authorises the discharge of contaminants to air from quarrying activities.

General Conditions 12-16 and Conditions 3, 6 and 8 require the DMP to be certified by both the CRC Manager and a Suitably Qualified and Experienced Practitioner (SQEP), including after each review.

Please see a copy of the original consent for the full suite of consent conditions. To ensure the conditions of consent are complied with in a timely manner, CRC224104 will be entered into CS-VUE. CS-VUE is a consent/compliance management software that Fulton Hogan uses. Tasks required by specific conditions will be assigned to an individual responsible, who will get reminders via email when these are due. For example, sending in dust monitoring data.

## 2.0 SITE AND SURROUNDING ENVIRONMENT

The quarry site is located on rural land, with site boundary approximately 700 m to the west of Templeton township. The immediate land use surrounding the proposed quarry is dominated by rural land uses. Residential dwellings are scattered throughout the surrounding areas. There is also a large block of Christchurch City Council (CCC) owned land on the other side of Dawsons Road which has no dwellings on it.

When consent was granted, there are approximately 28 residential dwellings a place of worship (Buddhist temple), and six commercial properties within 500 m of the site boundary, as shown on Figure 1.

Among them 15 properties are located within 250 m to the quarry boundary. The commercial properties include a caravan park for New Zealand Motor Caravan Association, an office building, a tree nursery, two accommodation facilities (a bed and breakfast and an accommodation unit associated with the Buddhist temple), and an implement and agricultural equipment retailer (FarmChief). The residential receptors, place of worship and accommodation facilities are considered to have a high sensitivity to dust impacts. The caravan park and office buildings are considered to have a moderate level of sensitivity, while the tree nursery is considered to have a low to moderate level of sensitivity.

No extraction is to occur within 200m of any dwelling existing as of 30 April 2020, namely 319 Maddisons Road and 153 Currags Road as shown on Figure 2, unless the prior written approval of the owners and occupiers of these dwellings is obtained.

Figure 1: Roydon Quarry Location Map

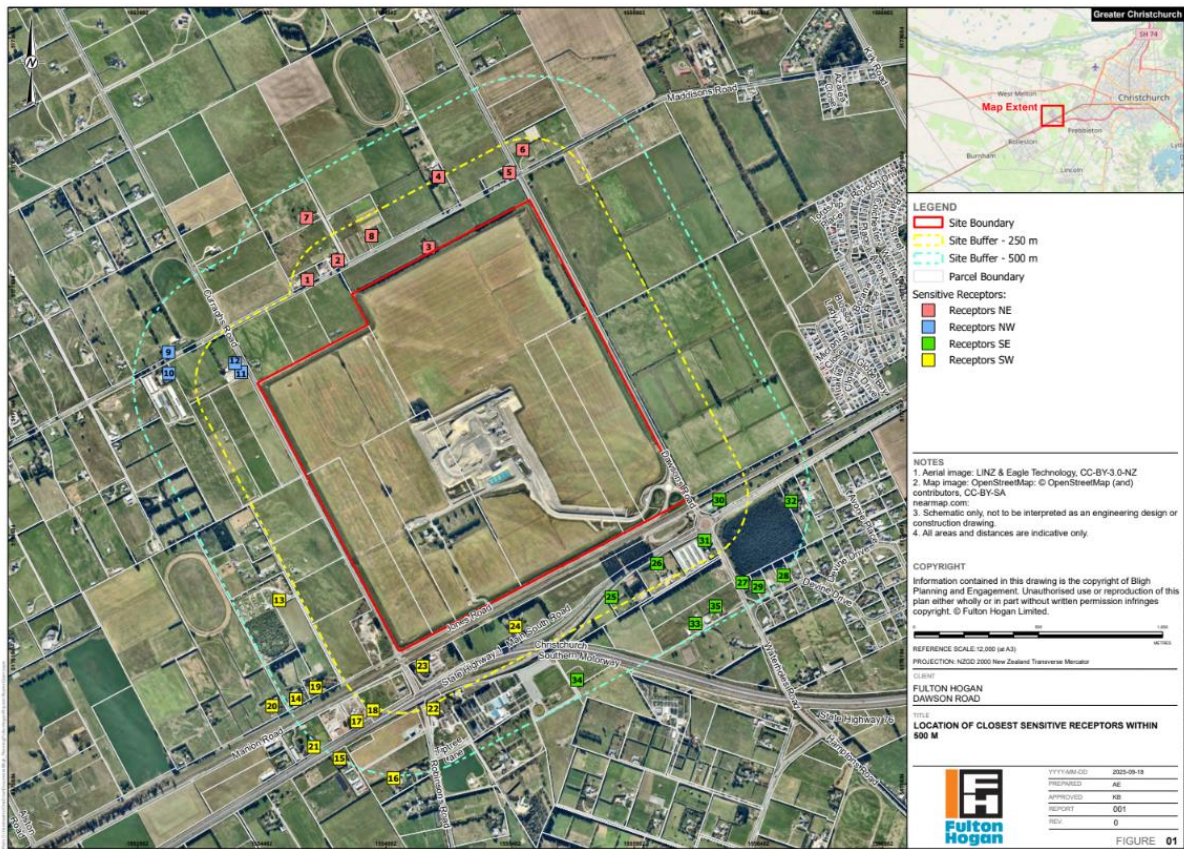
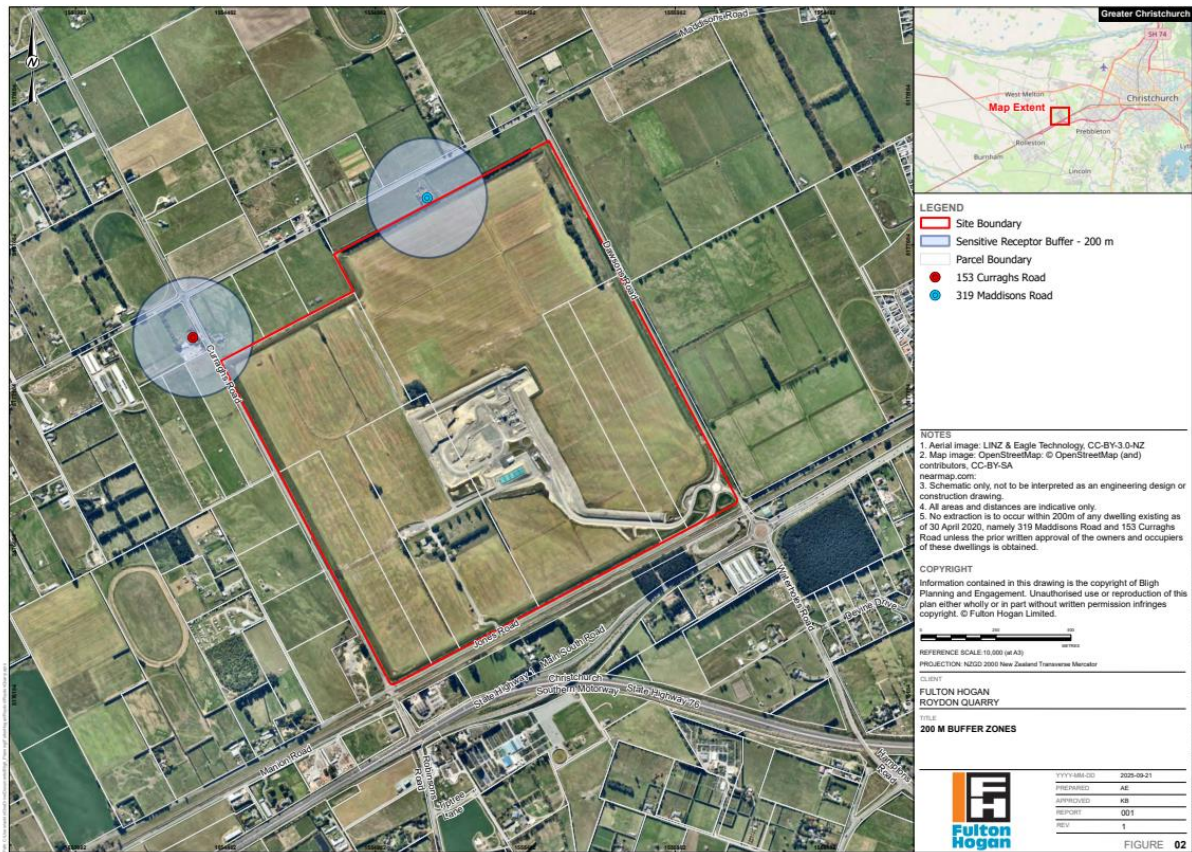
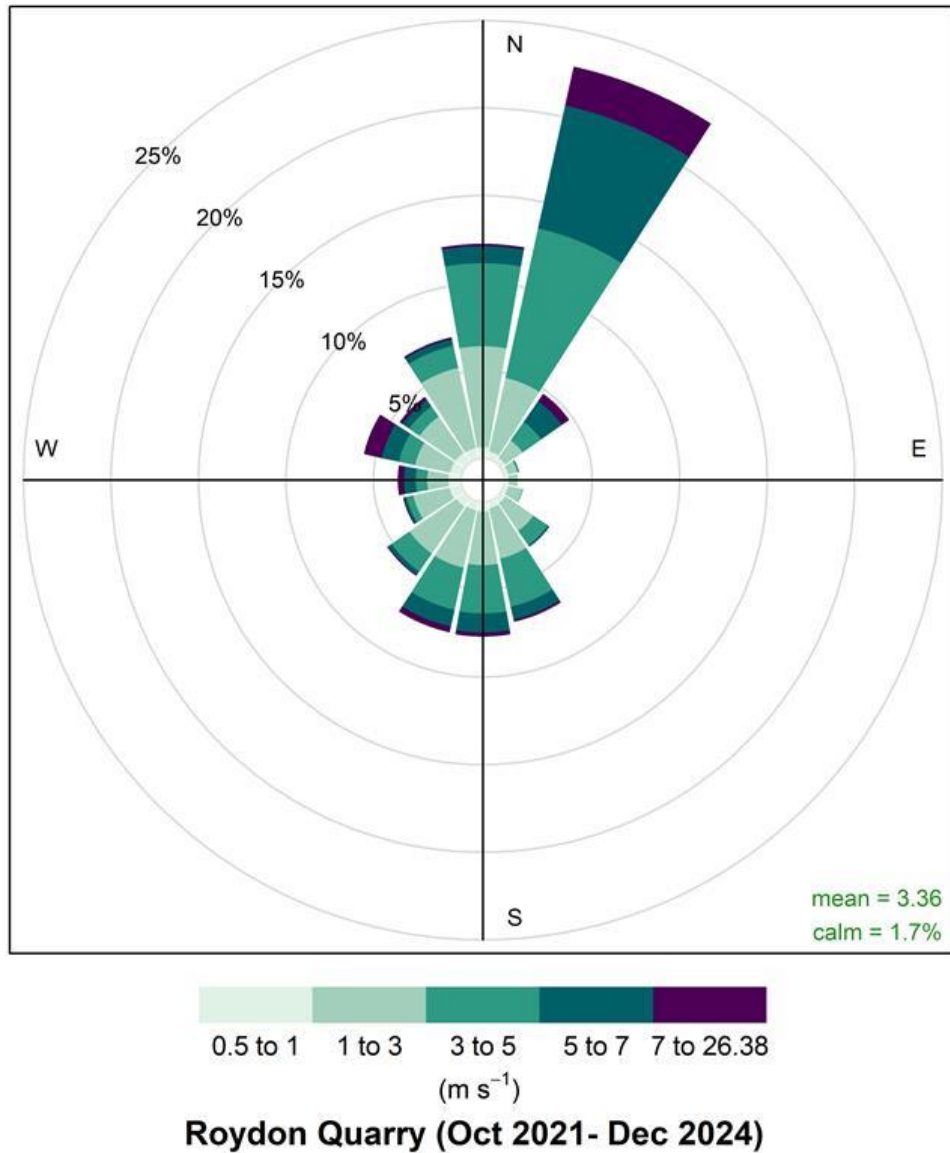


Figure 2: 200m Buffers off dwellings



**2.1 Wind**

Figure 3 shows a wind rose of the distribution of wind speed and direction from wind data recorded on the Roydon site.



**Figure 3:** Site Windrose for Roydon Quarry Site. From 21 October 2021 to 31 December 2024 (generated using onsite measured data).

### 3.0 ROLES AND RESPONSIBILITIES

Fulton Hogan own the land and will operate the quarry. The overall management of the site will be the responsibility of the Quarry Manager or delegate. The DMP will be implemented through a responsibility structure as outlined in Table 1 below.

**Table 1: Management Structure**

Responsibilities	Job Title			
	Quarry Manager	Quarry Supervisor	Quarry Foreman	Environmental Advisor
Development of the Dust Management Plan (DMP)				x
Endorsing the DMP	x	x	x	x
Reviewing the DMP	x			x
Managing the site to comply with the DMP and legal requirements	x	x	x	
Daily hazard management	x	x	x	
Ensuring legal compliance monitoring and testing is completed	x			x
Ensuring Site inspections are completed	x	x	x	
Auditing against the requirements of the DMP				x
Communicating the DMP to staff, contractors and other parties	x			x
Site Inductions	x	x	x	

### 3.1 Training

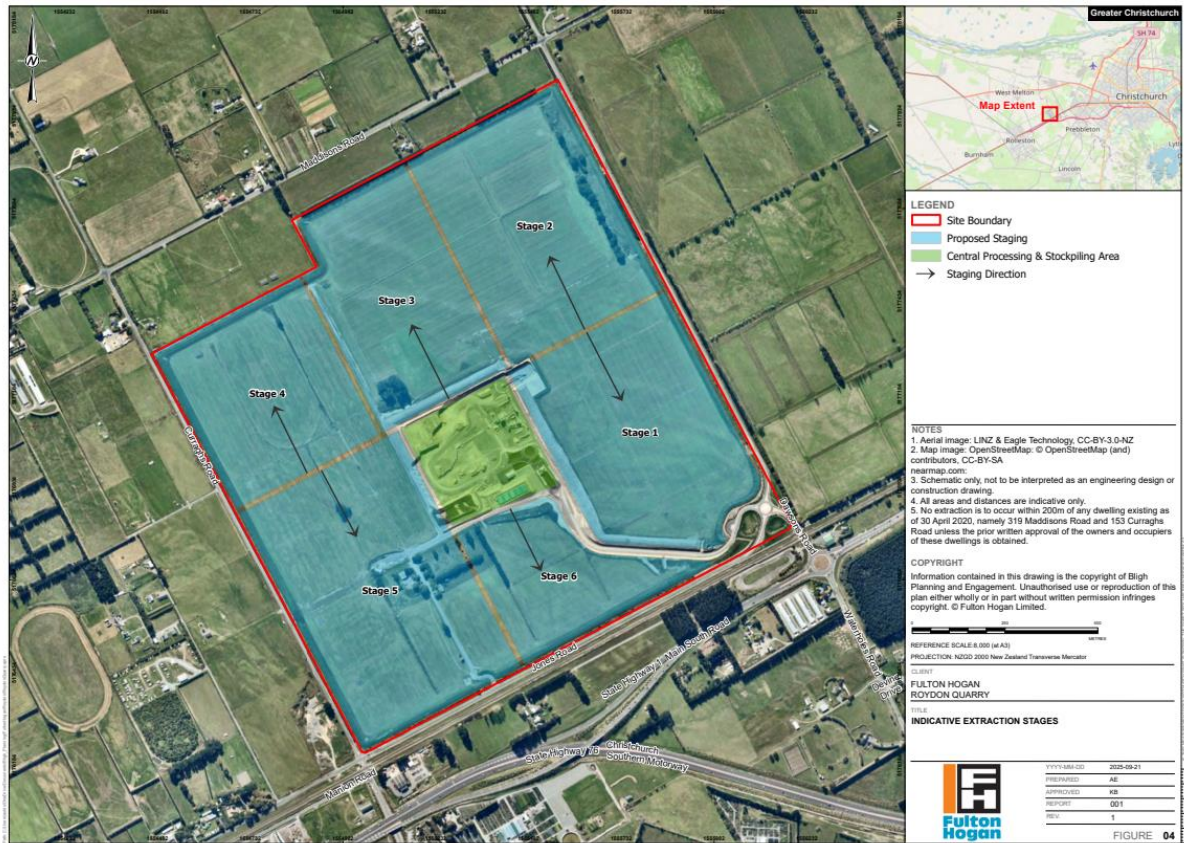
Fulton Hogan staff and contractors are provided with specific training through the following:

- Induction to the site - This includes site specific training of the relevant requirements and obligations of the resource consents and the Dust Management Plan.
- Daily prestart/monthly tailgates – Where management can train and update staff on any changes to legislation or procedures carried out on site.
- Envirowise - this training module includes dust mitigation and the effects of dust discharges beyond the site boundary (only Fulton Hogan Staff)

### 4.0 SITE OPERATIONS AND DUST SOURCES

This section briefly describes the nature of operations to be undertaken at the site and how they may generate dust. Extraction will occur in stages. Starting in the southeastern corner and working in an anti-clockwise direction, as per Figure 4, below. The operating hours are set out by the consent conditions.

Figure 4: Indicative extraction stages



#### 4.1 Site Preparation

Prior to extraction commencing, overburden material will be removed in accordance with the timing of each stage of the quarry. Overburden will be earth worked using excavators, loaders and either dump trucks and/or road trucks.

Earthworks for stripping the site can create dust emissions during dry weather and strong winds. The use of large machinery moving across dried exposed area, especially at high speeds can increase the dust generation.

#### 4.2 Extraction

Once a stage has been prepared for quarrying, extraction of aggregate will commence. This will typically involve the use of a loader/s placing raw aggregate into a hopper, which is then transported via a conveyor belt to the Central Processing and Storage Area (CPSA). The extraction face will generally be within 50m of the tracked mobile field feed bin, to reduce vehicle movements for both dust generation and fuel efficiency. Occasionally, additional machinery may be required to efficiently extract raw aggregate from the working gravel face.

Aggregate extraction is not a significant source of dust as the in-situ aggregate is typically damp. Especially given all excavation will occur from below natural ground level. Dust emissions can occur from aggregate extraction if the surface of the working face has dried significantly. However, this is usually limited to the initial disturbance of the dry outer surface, and short lived.

#### 4.3 Transport of Aggregate

Material will be transported from the working face via a conveyor belt. This will be extended as the extraction face progresses. The field feed bin/end of the conveyor belt will be in a location adjacent to the working face, reducing the area of disturbance from tyre/traffic movements. Once the loader places aggregate into the bin, the conveyor belt transports aggregate to the CPSA. Here it will be processed, then distributed via a conveyor and radial stacker to stockpiles. Stockpiled material is then loaded into road trucks and transported off site.

Dust can be discharged through wind erosion during transport of material. However, this is not generally a substantial source as freshly excavated material is relatively damp. The close proximity of the conveyor belt to the working face, and the use of the conveyor avoids the requirement for heavy vehicles to transport the aggregates to the CPSA reducing the generation of potential dust significantly.

Stockpile surfaces can cause dust to be discharged from the wind erosion, however, the extracted aggregate stockpiled on site must not exceed 625,000 tonnes in any 12-month period and must not be processed to

produce a product type smaller than AP20. Loading trucks with aggregate from stockpiles can also be a source of dust.

#### 4.4 Processing of Aggregate

Processing of aggregate involves the crushing, screening and conveyance of material around the main processing plant, and then stockpiled awaiting sale. The processing of aggregate can be a significant source of dust if not carefully controlled. Typically, aggregate goes through a series of screens that sorts the raw aggregate into varying sizes. Some aggregate will be sent directly to stockpiles, while the material that is not of optimal size is then conveyed to be crushed, and then stockpiled. Sprayers or high-pressure fogging systems can be fixed or be located beside the processing plant. The sprayers or high-pressure fogging systems will always be in operation while the main plant is producing aggregate.

#### 4.5 Vehicle Movements

There will be maintenance lanes/haul roads alongside the conveyor belts to provide access to machinery at the working face and/or conveyor. These will generally be used by service machinery and the occasional haulage vehicle if the conveyor is under maintenance, or for dust suppression by a water cart. Similar to the mobile conveyor belt, the location of the maintenance lane/haul road will change subject to the development of the extraction area. Vehicle movements along unsealed haul roads are likely to cause the most significant source of dust emissions, this will be controlled with regular application of pea gravel.

#### 4.6 Cleanfilling

Quarried areas will be progressively cleanfilled as suitably sized spaces become available on the quarry floor. A maximum of 5 ha is able to be open for cleanfilling at any one time to accommodate cleanfilling, which will form a key component of site rehabilitation. The clean filling area that is not remediated or covered with pea gravel will be up to 1 ha. All material to be used in backfilling and rehabilitation will be managed in accordance with the Roydon Quarry Cleanfill Management Plan.

Cleanfill material will be transported from the weighbridge and unloaded at a designated 'tip area'. When there is a sufficient volume of material accumulated at the 'tip area', a loader and/or bulldozer will spread and compact it across the working cleanfill site. Having a designated 'tip area' will reduce the area disturbed, minimising the dust generated. Additionally, waiting for cleanfill to accumulate in sufficient volumes before pushing it over will decrease the frequency of disturbance, and therefore, the generation of dust. The compaction of spread material and revegetation of cleanfilled site once it's at rehabilitation levels will further mitigate the risk of dust generation.

#### 4.7 Rehabilitation

For full detail on the rehabilitation, refer to the Roydon Quarry Rehabilitation Management Plan. Like cleanfilling, rehabilitation will occur progressively once areas of extraction and cleanfilling have been completed. Cleanfill will be contoured and grassed as the site progresses. Until exposed areas are grassed these surfaces can be a source of dust.

#### 4.8 Exposed/Open Areas

In summary a maximum of 26 ha across the site will be exposed at any one time. The specific areas are described as follows:

**Table 2:** Open area limits for quarrying operations (but not active dust suppression areas)

Purpose	Area (ha)
Central processing area, its fixed and mobile processing plant and stockpiles.	7
Excavation in process	5
Fill and rehabilitation in process	5
Site roads – unsealed	5
Field conveyor, service lanes	4
Total active area	26
The above areas exclude the sealed access road(s) and any site buildings.	

Most areas remain static, but excavation and fill/rehabilitation are surveyed every 3 months.

### 5.0 STANDARD OPERATING PROCEDURES (SOP's) AND MANAGEMENT PRACTICES

Table 3, below, summarises the standard operating procedures (SOP's) and management practices to be implemented across the site.

**Table 3:** Summary of SOP's and management practices

Dust source	Control and management practice
General measures	<ul style="list-style-type: none"> <li>• Assess weather and ground conditions (dryness and wind speed) each day and ensure that applicable mitigation measures and methods are ready for use.</li> <li>• Take wind direction and speed into account in planning quarry activities to minimise potential discharge effects.</li> <li>• <i>Quarrying activities</i> within 250 metres of any sensitive receptor must not be undertaken when wind direction is towards the sensitive receptor <b>and</b> wind speed is &gt;7m/s.  <i>Quarrying activities</i> means:             <ol style="list-style-type: none"> <li>a. Site preparation, topsoil stripping, overburden removal and storage;</li> <li>b. Construction and maintenance of bunds and stockpiles;</li> <li>c. Extraction, loading and transportation of material;</li> <li>d. Processing of aggregates (including crushing and screening of aggregates);</li> <li>e. Combustion products from the operation of 1.04 megawatt of diesel fired generation (up to 4 generators);</li> <li>f. Stockpiling of aggregates;</li> <li>g. Deposition of cleanfill;</li> <li>h. Site rehabilitation; and</li> <li>i. Movement of vehicles associated with the above activities.</li> </ol> </li> <li>• Existing tree shelter belts are to be maintained. Where these are not present, new shelter belts and screen planting will be established and maintained. Any dead, diseased, or damaged plants must be replaced with plants of a similar fast-growing species, as soon as practicable, having regard to planting seasons</li> <li>• Ensure that sufficient water and distribution equipment is available and ready to use for dust control. Water storage bags are available 24-7. This includes monitoring the water supply bore for daily volume take.</li> <li>• Water carts will used as a back-up measure for dust suppression during dry weather.</li> <li>• Stabilise all inactive exposed surfaces (i.e., bare land that is not vegetated) if these are to remain unused for one month or more (if natural crusting is insufficient). This will minimise the potential for dust emissions due to wind erosion as well as the need for water application over these inactive</li> </ul>

	<p>areas during dry, windy conditions.</p> <ul style="list-style-type: none"> <li>• Ensure that this Dust Management Plan is available at all times and accessible to all persons operating or carrying out the activities.</li> <li>• At any time, including outside normal operating hours, if visible dust is blowing beyond the site boundary or if triggers levels are reached (as per the monitoring programmes described in Sections 6.1, 6.2.1 and 6.3.1, respectively):             <ul style="list-style-type: none"> <li>➤ Cease all quarry activities outside of the CPSA (except for vehicles movement on access roads);</li> <li>➤ Continue all dust suppression activities; Note, this may include immediate watering of both active and inactive exposed surfaces, even if dust generating activities have been ceased;</li> <li>➤ Investigate possible sources of dust immediately and respond with appropriate corrective and preventive actions.</li> <li>➤ Only resume quarrying activities once there is no visible dust blowing beyond the site boundary and the trigger levels are not being exceeded.</li> </ul> </li> <li>• Monitor rainfall, wind meteorological conditions and particulate matter concentrations as discussed in Sections 6.2 and 6.3, and respond accordingly if the applicable trigger conditions are exceeded.</li> <li>• If any dust suppression systems are installed, they can be activated automatically based off MET station and/or dust monitors real time data, should the operational staff deem it applicable to better manage dust. They will also have the ability to be turned on manually.</li> <li>• Ensure a 24-hour contact is available, (the Quarry Manager, or delegated person), to respond to dust emission complaints and issues.</li> </ul>
Vehicle movements	<ul style="list-style-type: none"> <li>• Sealing the site heavy vehicle access road from the site access to the CPSA, sealing the ring road around the CPSA and sealing the light vehicle access road for its entirety</li> <li>• Placing a rumble strip on the site heavy vehicle access road to assist in removing muddy material from vehicle wheels before they exit the site</li> <li>• Regularly vacuum sweeping sealed roads and yard areas.</li> <li>• Construct and maintain unsealed internal access routes/haul roads so that they are comprised of an aggregate base i.e. millings, reject material etc., reducing the generation of dust when used.</li> <li>• Limit vehicle speeds on site to 15 kilometres per hour and clearly signpost this limit on all internal roads.</li> </ul>

	<ul style="list-style-type: none"> <li>• Apply water to haul and access roads during any conditions when dust is likely to be discharged from them (dry and windy).</li> <li>• If water application is insufficient, use chemical stabilisers or other equivalent measures on unsealed road surfaces.</li> </ul>
Site preparation and rehabilitation	<ul style="list-style-type: none"> <li>• The storage bladders and ring main will be established prior to quarrying activity to ensure access to water for dust control.</li> <li>• Carrying out land stripping and land rehabilitation during favourable seasonal and weather conditions. Favourable weather conditions are generally when wind speed is low, or soil has a good level of moisture content, or when weather conditions are not hot and dry.</li> <li>• During the rehabilitation of site, water shall be regularly used to suppress wind-blown dust, and to aid the growth of vegetation.</li> <li>• An 80% grass cover shall be maintained on the bunds at all times.</li> <li>• Pre-dampen land to be stripped if the moisture content is not sufficient to minimise dust.</li> <li>• Stabilise exposed areas with compaction, pea gravel or other necessary methods to reduce wind erosion.</li> <li>• Apply water as necessary to ensure that any exposed earth remains damp, unless a crust is formed to minimise dust emissions, until grass cover is established.</li> </ul>
Exposed/Open Areas	<ul style="list-style-type: none"> <li>• Open areas that are to be undisturbed shall be stabilised using but not limited to pea gravel, water, chemical stabilisers or other appropriate solutions with equivalent effectiveness.</li> <li>• Water shall be used if the above is not adequate.</li> <li>• A field mist curtain is installed between the CPSA and the eastern boundary to assist with dust mitigation.</li> </ul>
Cleanfill deposition	<ul style="list-style-type: none"> <li>• Use water and pea gravel, or any other practical measure to suppress dust in the working area during dry, windy conditions.</li> <li>• The clean filling area that is not remediated or covered with pea gravel shall be 1 ha.</li> <li>• For heavy vehicles bringing cleanfill or topsoil loads to the site:             <ol style="list-style-type: none"> <li>i. Consent holder controlled heavy vehicles must have the incoming loads covered;</li> <li>ii. The consent holder shall, having regard to the Dust Management Plan, take all practicable steps to ensure non-consent holder controlled heavy</li> </ol> </li> </ul>

	<p>vehicles avoid the shedding of loads due to wind or movement by either limiting the quantity of the load, or covering, or netting or sheeting – if necessary and as appropriate having regard to the nature or type of load and/or prevailing wind conditions</p>
<p>Aggregate extraction and transport and processing</p>	<ul style="list-style-type: none"> <li>• Any fixed or mobile processing plant shall operate in conjunction with either sprayers or a high-pressure water fogging system. Misters or fogging system will automatically turn on with the processing plant is turned on.</li> <li>• Locate fixed and mobile processing plant in the CPSA, below natural ground level, and at least 500 metres from site boundaries, with sealed areas, use of pea gravel and millings.</li> <li>• A tracked mobile feed bin will be used and ensures that the feed bin can be close to the exaction face to reduce traffic movements.</li> <li>• Stockpiles within the CPSA are created using a tele-stacker, reducing loader movements required for this and reducing dust generation.</li> <li>• Heavy vehicles with aggregate or other quarry material leaving the site must either cover their load or have the load dampened with water spray before leaving the site</li> <li>• Minimising drop heights when loading trucks, conveyor hoppers and when moving materials. Ensure dust suppressants are available during very dry weather.</li> <li>• A conveyor shall be used as the primary means for transporting aggregate to the processing plant, with tracked field feed bin generally within 50 mtrs of the extraction face. Conveyors that carry finer aggregate are covered.</li> </ul>
<p>Stockpiles</p>	<ul style="list-style-type: none"> <li>• During site preparation, limiting the height of topsoil, overburden and aggregate stockpiles to no more than three metres above natural ground level</li> <li>• During quarrying operations, locating stockpiles of processed aggregate within the quarry floor area below natural ground level</li> <li>• Not exceeding a maximum aggregate stockpile volume of 200,000 cubic metres at any one time.</li> <li>• Setting back all stockpiles associated with fixed and mobile processing plant in the CPSA at least 500 metres from site boundaries</li> </ul>

- |  |  |
|--|--|
|  | <ul style="list-style-type: none"><li>• Vegetating, or otherwise stabilising, any long-term stockpiles of topsoil, overburden</li><li>• Spraying stockpiles with water</li><li>• Cover stockpiles using pea gravel, reject gravel, pit run gravel, water or dust suppressants if generating dust</li></ul> |
|--|--|

## 5.1 Contingencies Mitigation Measure

The below situations can arise from time to time and following further measures may be required:

- Importation of water  
Should the site volume used exceed the water able to be taken from the site bore, supplementary water can be brought to site for dust suppression of quarrying activities. 2,500m<sup>3</sup> of water storage is available on site.
- Breakdown/Failure of water suppression methods  
As this is a key control measure, ceasing of dust generating activities shall happen until the systems can be restored, unless the use of a watercart or other method can temporarily suppress dust.
- Failure or poor performance of meteorological and particulate matter monitoring equipment  
The supplier contracts should account for this with the ability to have replacement equipment on site, or the existing equipment repaired or replaced within a specified time frame of not more than 48 hours.
- Stabilisation materials  
Adequate supplies of pea gravel, chemical stabilisers, solid covers etc., must be available on site or easily and quickly obtainable in order to provide suppression to open areas at short notice. Backup suppliers should be arranged before site activities commence.
- Dust impacts occurring out of hours  
A 24-hour contact must be available to respond to complaints, meteorological and PM<sub>10</sub> monitoring trigger alarms to initiate response measures as necessary.

## 6.0 MONITORING

### 6.1 Visual Inspections

All staff onsite are responsible for continuously checking for and reporting for dust throughout the day. If at any time, there is **significant dust emissions** visible from their operations this shall be reported to the Quarry Manager or delegate for further action. The Quarry Manager or delegate is responsible for ensuring mitigation is implemented as necessary for dust generating activities.

When notified of **visible dust at the boundary**, the Quarry Manager or delegate must:

- Cease all quarry activities outside of the CPSA (except for vehicles movement on access roads);
- Continue all dust suppression activities; Note, this may include immediate watering of both active and inactive exposed surfaces, even if dust generating activities have been ceased;
- Investigate possible sources of dust immediately and respond with appropriate corrective

and preventive actions.

- Only resume quarrying activities once there is no visible dust blowing beyond the site boundary and the trigger levels are not being exceeded.

Daily visually inspect access routes and haul roads around the wider site for tracking.

Any significant reports of dust, tracking and actions taken to mitigate dust shall be recorded in the site diary.

## 6.2 Wind Monitoring SOP

As per the consent requirements a meteorological monitoring station (MET station) has been installed within the site. This shall always be located 4 metres above natural ground level, prior to quarrying. It continuously measures and records the following:

- Wind speed
- Wind direction
- Rainfall
- Temperature
- Humidity

The sites MET station talks to an online dashboard that is fitted with an alarm system capable of informing delegated site staff if the 10-minute average wind speed trigger level has exceeded (trigger levels are discussed further below). These alerts can be sent via text message and email. If any dust suppression systems are installed, they can be activated automatically based off MET station and/or dust monitors real time data, should the operational staff deem it applicable to better manage dust.

The recorded information can be accessed and downloaded as required. The 10-minute averaged meteorological data shall be retained in the form of an electronic record and copies shall be provided to Christchurch Regional Council (CRC) on request.

All meteorological monitoring equipment should be checked and maintained to ensure it is functioning properly and calibrated annually, as specified by the manufacturer's specifications. A record of when maintenance is undertaken, the type of maintenance and who undertook it must be kept. This record must be provided to CRC on request. This requirement is also tasked within CSVUE and all maintenance/calibration certificates etc shall be stored within CSVUE.

All monitoring equipment is also detailed and listed within the Canterbury Environmental Equipment Register. Please see this document for full details of the type of device, supplier, serial number etc.

### 6.2.1 Wind Trigger Levels

*Wind direction and speed:*

Quarry activities (except dust suppression measures) within 250 metres of a sensitive receptor location must not be undertaken when the wind direction (10-minute average) places *quarry activities* directly **upwind** of the sensitive receptor location **and** the wind speed **reaches or exceeds 7 m/s**. This does not apply to vehicle movements along the site access roads

NOTE: if only one of the two wind factors occur quarrying activities can continue.

### 6.3 Dust Monitoring SOP

One Permanent PM<sub>10</sub> Monitor:

A real-time Teledyne T640 dust monitor, compliant with the US EPA or Resource Management (National Environmental Standards for Air Quality) Regulations 2004 (NESAQ) has been installed on the eastern boundary, as required by consent. Additionally, the:

- a. The PM<sub>10</sub> monitor must be located directly adjacent to the centre of the proposed Stage 1 *quarrying operations* area;
- b. The PM<sub>10</sub> monitor must record hourly and 24-hourly average PM<sub>10</sub> concentrations; and
- c. The consent holder must consult with the CRC Manager regarding the location of the PM<sub>10</sub> monitor.

Five PM<sub>10</sub> and PM<sub>2.5</sub> Dust Monitors:

There are five real time dust monitors located in and around the site. Only four are required by consent.

These monitors must be suitable for dust management but not need to meet the standard for NESAQ compliance monitoring and have GPS tracking.

- Three real-time dust monitors shall be installed near to three separate quarry boundary locations being:
  - i. The southeast corner (Dust Monitoring Site #1)
  - ii. The southwest corner (Dust Monitoring Site #2)
  - iii. The northwest corner (Dust Monitoring Site #3)
- On each day that *quarry operations* are undertaken and in circumstances when a residential dwelling is less than **500 metres downwind** of *quarry operations*, the consent holder shall locate a real-time dust monitor at a site boundary location, such that the monitor is situated between the active quarrying areas and the nearest downwind off-site residential dwelling.

If the above is not required, the monitor shall be placed at an alternative location that is informative for managing dust in relation to the prevailing winds and off-site residential dwellings.
- The 5<sup>th</sup> monitor will be used for the Respirable Crystalline Silica (RCS) monitoring programme. However, when not required the monitor can be as a back- up device or put at an alternative location that is informative for managing dust in relation to the prevailing winds and off-site residential dwellings.

Dust monitoring equipment talks to a dashboard fitted with an alarm system that sends the Quarry Manager or delegate an alert when PM<sub>10</sub> concentrations exceed the specified trigger levels. (Discussed further below).

All dust monitoring equipment should be checked 6 monthly to ensure it is functioning properly in accordance with the manufacturer's specifications. All portable dust monitors shall be calibrated annually, against the permanent T640x on the eastern boundary. The T640x is also calibrated annually

A record of when maintenance is undertaken, the type of maintenance and who undertook it must be kept. This record must be provided to CRC on request. This requirement is also tasked within CSVUE and all maintenance/calibration certificates etc shall be stored within CSVUE.

### 6.3.1 Dust Trigger Levels

If at any time, including outside normal operating hours, **visible dust** is blowing beyond the site boundary or if *quarry activities* cause real time particulate concentrations at the site boundaries to reach or exceed a PM<sub>10</sub> concentration of **150 micrograms per cubic metre**, as a 1-hour average updated every ten minutes the consent holder must:

- a. **Cease** all *quarry activities* outside of the CPSA, aside from vehicle movements along the site access roads;
- b. Continue all dust suppression activities including but not limited to the immediate watering of both active and inactive exposed surfaces;
- c. Investigate possible sources of the dust;
- d. Only resume the *quarry activities* ceased under condition 23(a) above, once there is no longer visible dust blowing beyond the site boundaries and when the monitoring trigger in this condition is no longer being exceeded; and
- e. Notify the CRC Manager within one working day of the dust event, including its cause and the dust suppression actions undertaken.

### 6.4 Council Compliance Inspections

Council may visit the site on an 'ad hoc' basis, to undertake site inspections and assess compliance with consent conditions. Site staff will be available to assist Council staff during these inspections and provide any information required to be provided as per consent conditions.

A full internal audit of the site operations is to be carried out by management to assess compliance with the DMP and the air discharge permit on a yearly basis.

## 7.0 RECORDING AND REPORTING

### 7.1 Dust Trigger Level Breaches

A record is to be kept of all trigger breach events. The record should include:

- the date of the event,
- a summary of the wind speeds recorded (maximum and average),
- details of any visual or measured dust
- cause of the event, and
- the response to the event
- any improvements/corrective actions

Council is required to be notified only for visible dust or when the PM<sub>10</sub> trigger level is exceeded. This shall be done within one working day of a dust event, including its cause and the dust suppression actions undertaken.

### 7.2 Meteorological Data

Meteorological data shall be retained in the form of an electronic record and copies. This data is available and can be downloaded and provided to CRC on request.

### 7.3 Equipment Maintenance

A record of when maintenance is undertaken for the dust monitors and MET station, the type of maintenance and who undertook it must be kept.

### 7.4 Community Liaison Group (CLG)

Meetings occur six monthly with the CLG to discuss and report compliance with all consents, specifically CRC2224104 under this plan. The meeting frequency can change if the CLG group decide.

A report will be generated for each CLG meeting that outlines environmental compliance for since the previous CLG meeting, including a summary of complaints.

Members of the CLG must be provided with copies of any draft management plan and be invited to provide written comments on the contents of the plan within 10 working days. In conjunction with submitting a management plan for certification to SDC or CRC, the consent holder must report on how any feedback provided by CLG members has been incorporated or not into each management plan.

### 7.5 Complaint Response

It is important to ensure that any complaints are recorded and promptly investigated to identify and resolve the cause of the complaint. Whenever possible, the following guide should be followed when a complaint is received:

- Be courteous. Immediately suspend contact with the complainant if there is risk of injury or abuse.
- Advise that an investigation process will be carried out to determine the likely cause of their concern and ensure appropriate mitigation has or will be undertaken promptly.
- Record the details provided by the complainant about the incident i.e., date, time, location etc.
- Investigate the likely cause of the complaint – including immediate visual inspections of dust emissions, as well as consideration of the process (e.g., if there are any abnormalities) and meteorological conditions.
- Where possible take corrective actions as soon as practicable.
- Follow up with the complainant following the investigation to check whether their concerns have been addressed.
- Report the incident through ‘See it Report it’ with the below details:
  - a. The location of the complaint;
  - b. The date and time of the complaint;
  - c. A description of the wind speed and wind direction at the time of the complaint;
  - d. The most likely cause of the complaint; and
  - e. Any corrective actions undertaken to avoid, remedy, or mitigate the effects of the contaminants detected by the complainant.

All complaints shall be kept in a register and supplied to CRC in August each year, via the annual report.

## 8.0 DMP REVIEW

This DMP will be reviewed and updated if required at least once every two years. Any amendments will be:

- a. For the purpose of improving efficacy of the mitigation and shall not result in reduced discharge quality;
- b. Consistent with the conditions of this resource consent;
- c. Reviewed by a SQEP to ensure it remains fit for purpose; and
- d. Submitted in writing to Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, for certification in accordance with Condition (8) of CRC2224104 prior to any amendment being implemented.

The review will take into consideration:

- Site personnel comments.
- Audit findings and recommendations.
- Environmental monitoring records.
- Environmental complaints, incidents and emergencies.
- Details of corrective and preventative actions.
- Changes to organisational structure.
- Ongoing compliance with objectives, conditions and targets.
- Possible changes in legislation and standards.

- Improvements to site and any developments of industry codes of practices
- The review process will include looking at the environmental controls and procedures to make sure they are still applicable to the activities being carried out. Reasons for making changes to the DMP will be documented.

## **9.0 Document Control**

A copy of the original DMP document and subsequent versions will be kept for records and marked as superseded. Each new/updated version of the DMP will be issued with a version number and date to eliminate obsolete DMP documentation being used.

**APPENDIX 1: Site Contacts**

<b>Name</b>	<b>Role</b>	<b>Phone</b>	<b>Email</b>
Troy Adamson	Quarry Manager	027 318 1373	<a href="mailto:Troy.adamson@fultonhogan.com">Troy.adamson@fultonhogan.com</a>
Laura Aitken	Senior Environmental Advisor	027 263 5869	<a href="mailto:Laura.aitken@fultonhogan.com">Laura.aitken@fultonhogan.com</a>

