

**CRC192410 Discharge permit to discharge contaminants into air from an industrial or trade premise or process**

1) The discharge of contaminants to air shall only be from quarrying activities at 107 Dawsons Road and 220 Jones Road, Templeton, legally described as Rural Section 6475 and Rural Section 6324, Lot 1 Deposited Plan 4031, Rural Section 6342, Section 7 Survey Office Plan 510345, Rural Section 5381 and Section 6 Survey Office Plan 510345, at or about map reference NZTM2000 1555356mE, 5177132mN. As shown on Plan CRC192408A, attached to and forming part of this resource consent. .

The discharge of contaminants into air shall only be generated from the following quarrying activities:

- a) Site preparation, topsoil stripping, overburden removal and storage;
- b) Construction and maintenance of bunds and stockpiles;
- c) Extraction, loading and transportation of material;
- d) Processing of aggregates (including crushing and screening of aggregates);
- e) Combustion products from the operation of 1.04 megawatt of diesel fired generation (up to 4 generators));
- f) ~~Forming~~ ~~S~~stockpiling ~~ing~~es of aggregates;
- g) Deposition of cleanfill;
- h) Site rehabilitation; and
- i) Movement of vehicles associated with the above activities.

2) ~~The discharge of contaminants into air beyond the boundary of the site described in Condition 1) shall not be offensive, objectionable, noxious or dangerous. There shall be no noxious, dangerous, objectionable or offensive dust to the extent that it causes an adverse effect beyond the boundary of the site~~

**Commented [DR1]:** Is everyone happy with this wording? It does not seem to relate to effects – see GPG

**Commented [LW2R1]:** Yes

**Prior to Works**

2)3) At least one month prior to the commencement of activities authorised under this resource consent, the consent holder shall inform the Canterbury Regional Council, Attention RMA Monitoring and Compliance Manager (the Manager), in writing of the start date of the works.

**Monitoring**

3)4) Prior to the commencement of ~~quarrying site~~ activities, a meteorological station shall be installed at the site with instruments capable of continuously monitoring and providing representative metrological data for the site and surrounding area shall be installed. ~~The instruments shall be capable of continuous measurement and real time logging and reporting of the following:~~

**Commented [DR3]:** PM monitoring should be moved to under this heading

**Commented [CR4]:** changes as agreed in RSC rebuttal 1

- a) Wind speed as 1-minute scalar averages with maximum resolution of 0.1 m/s and accuracy of at least within +/-0.2 m/s.
- b) Wind direction as 1-minute scalar averages with maximum resolution of 1.0 degree and accuracy of at least within +/- 1.0 degree.

- c) Rainfall and Evaporation as hourly averages with maximum resolution of 1 mm/day and accuracy that meets the ~~ix~~ standard ~~good industry practice~~.
- d) Provide an alarm to site staff (for example via mobile phone) if the hourly rolling average wind speed trigger level is exceeded.
- e) Screened Temperature with accuracy of +/- 0.5 degree.
- f) Humidity (%RH) with accuracy of +/- 5 %.
- g) The instruments shall be installed on mast such that their height is at least four metres above pre-quarrying ground level and in accordance with AS 2923 – 1987 Ambient Air Guide for Measurement of Horizontal Wind for Air Quality Applications.
- h) All measured data shall be:
  - i. recorded using an electronic data logging system and retained for the duration of this consent; and
  - ii. provided to the Canterbury Regional Council upon request.

**Commented [CR5]:** to be clarified

**Commented [CR6]:** experts agree the met shall be reported at frequency to be determined in discussion

**Commented [LW7R6]:** For example, reporting to the local community group along with dust monitoring (and results of RCS campaign monitoring)

**4)5)** The instruments specified in condition 4) shall be installed and maintained in accordance with the manufacturer's specifications. The consent holder shall keep a record of when maintenance is undertaken, and the type of maintenance undertaken. This record shall be provided to the Canterbury Regional Council upon request.

#### Dust Management Plan

**5)6)** The consent holder shall prepare and implement a Dust Management Plan (DMP) which shall include, but not be limited to:

- i.** A description of the dust sources on site;
- ii.** A description of the receiving environment and identification of sensitive receptors within 150 m of the site boundaries.
- iii.** The methods to be used for controlling dust at each source during site construction, operation of the quarry, aggregate crushing and screening, cleanfill deposition and rehabilitation including dust reduction through design methodologies;
- iv.** A description of the site rehabilitation;
- v.** A description of the monitoring requirements;
- vi.** A system of training for employees and contractors to make them aware of the requirements of the DMP;
- vii.** Identifying staff responsible for implementing and reviewing the DMP;
- viii.** Procedures, processes and methods for managing dust when staff are not on site;
- ix.** Methods for determining the weather conditions, ie rainfall, and wind direction/s and strength, that will trigger a restriction on undertaking potentially dusty activities and procedures for responding to triggers;

**Commented [DR8]:** Keen to capture somewhere – where the dwellings that require special precautions are located –

**Commented [CR9R8]:** That can change over 30 to 40 years

~~ix-x.~~ A method for recording and responding to complaints from the public; and

xi. A maintenance and calibration schedule for meteorological monitoring instruments and particulate PM<sub>10</sub> monitoring.

~~6)7)~~ The DMP shall be:

- Developed to include separate Standard Operating Procedures (SOPs), with each of these dedicated to the management of potential dust discharges from specific sources, including but not limited to:
  - a. Central processing plant, associated product stockpiles;
  - b. Site roads – sealed and gravelled;
  - c. Excavation and cleaning -filling area;
  - d. Exposed areas of the quarry, such including as -stockpiles;
  - e. Soil and overburden stripping, and storage;
  - f. Location and calibration of ambient PM<sub>10</sub> monitoring equipment; and
  - g. Environmental information management for recording, quality assurance, archiving and reporting the quantity and types of data including all ambient environmental data for wind, rainfall-evaporation, PM<sub>10</sub> concentrations, community feedback, and all data required for dust management of the site.
- Reviewed every two years, or more frequently if required, by the consent holder in consultation with the Community Liaison Group as required under Condition 64) of Selwyn District Council resource consent RC185627.
- Retained on the site at all times; and
- Forwarded at least one month prior to the exercise of this consent to the Canterbury Regional Council Attention: RMA Monitoring and Compliance Manager. Any updated versions of the DMP shall be forwarded to this Manager within 30 days of completing a review.

The DMP and any revisions shall include all measures necessary to achieve compliance with the conditions of this consent.

~~7)8)~~ The DMP shall be reviewed by ~~a~~ a Suitably Qualified and Experienced Practitioner (SQEP) in air quality to confirm that the measures proposed in the DMP are appropriate to enable the management of discharge of contaminants into air beyond the boundary to a level that is-not offensive, objectionable, noxious or dangerous to the extent that there is an adverse effect beyond the boundary of the site.

~~8)9)~~ If the Canterbury Regional Council confirms receipt of the DMP, but ~~then fails to~~ does not provide any further response to the consent holder within a period of one month of confirmation, then the DMP shall be deemed to be certified.

~~9)10)~~ The Quarry Manager, or nominated person, shall be available at all times (including outside quarry operation hours) to respond to dust emission issues.

#### **Excavation and Rehabilitation**

~~10)11)~~ The consent holder shall establish at least 3 m high vegetated earth bunds around the site perimeter, with the exception of site accessways, which shall be constructed with a 1 m wide flat top around the site. The bunds shall have a profile with an outside slope of up to 1:3 (one vertical to three horizontal), be compacted to minimise top soil loss, shall have a top at least 1 m

wide, and shall have a minimum width of 15 m, to remain in place for the duration of extraction and rehabilitation activities.

~~11)~~~~12)~~ As soon as practicable, but within 14 days, following construction, the bunds are to be sown with grass (or another suitable vegetative cover) or hydro-seeded to achieve swift grass cover and watered regularly to ensure grass cover is established and maintained.

~~12)~~~~13)~~ To assist in achieving swift grass and vegetative cover, construction of the bunds shall take place outside of summer months and in favourable weather, to avoid significant potential dust risk (e.g. during the months of ~~May~~~~February~~ to ~~October~~~~November~~ inclusive) and enable grassing of the bunds to occur in autumn or spring, in order to align with periods of good grass strike.

~~13)~~~~14)~~ The grassed and vegetated bunds shall be watered, when required to suppress potential dust, until a grass or vegetative cover has been established.

~~14)~~~~15)~~ Each quarry sub-stage, with the exception of any active haul roads, shall be rehabilitated within six months of the completion of cleanfilling. Rehabilitation shall include but not be limited to:

- a) Reshaping the relevant areas;
- b) Spreading of topsoil;
- c) Re-vegetating; and
- d) Undertaking all reasonably practicable measures to prevent a dust nuisance from the rehabilitated area, including but not limited to watering of exposed soil to prevent production of dust.

If this work is required outside of spring or autumn, the area can be suitably mulched or covered with another form of material to suppress dust from the area until it is appropriate to re sow grass.

#### Generator Operation

~~15)~~~~16)~~ Diesel generators associated with mobile plant should only be used between 7 am and 8 pm, excluding any warm up and cool down period. The generators shall be serviced at least once every year by a person competent in the servicing of such appliances. The servicing shall include internal cleaning and replacement or repair of damaged equipment and services as necessary.

#### Dust Mitigation

~~16)~~~~17)~~ The consent holder shall take all reasonably practicable measures to minimise the discharge of dust from overburden, topsoil and aggregate stockpiles. These shall include but not be limited to:

- a) After the initial site preparation and establishment, locating stockpiles of processed aggregate below natural ground level;
- b) All processed aggregate products shall be stockpiled by grade within the quarry floor area.
- c) Stockpile volumes will have a maximum total volume of 200,000m<sup>3</sup> at any one time;

**Commented [DR10]:** isn't this summer? Should it be March/April?

**Commented [CR11R10]:** April to October ? are months outside of summer?

**Commented [LW12R10]:** Three of the (BAM-equivalent) NES exceedances in Yaldhurst occurred in April. Suggest May – Oct inclusive?

**Commented [DR13]:** Move – doesn't fit well here?

**Commented [CR14R13]:** I am happy either way. Move it if you want

- d) All stockpiles associated with the fixed plant will be setback at least 500 metres from site boundaries and stockpiles associated with the mobile plant will be setback 250 metres from site boundaries;
- e) During initial site preparation, limiting the height of stockpiles to no more than 3 m above natural ground level at any one time;
- f) Vegetating any long term over burden or soil stockpiles, including any unprocessed aggregate, up to a height of 3 m above natural ground; and
- g) Spraying stockpiles with water as required.

17)18) The consent holder shall take all reasonably practicable measures to minimise the discharge of dust from the site. These measures shall include but not be limited to:

- a) Constructing and maintaining haul roads so that they are comprised of an aggregate base, with surfaces that are graded so they are free of pot holes; and
- b) Sealing of the site access/exit ring road;
- c) Using field conveyors as the primary form of transporting aggregate for processing within the site. Note: this does not apply to stripping or overburden material;
- d) Minimising drop heights when loading trucks, conveyor hoppers and when moving material;
- e) Pre-dampening soil with a water cart or sprinklers prior to removing overburden and carrying out land stripping and land rehabilitation during favourable weather conditions (avoiding winds above 7 m/s) and at times of least vulnerability to neighbouring properties;
- f) Locating the fixed plant in the centre of the site and below ground level;
- g) Any fixed processing plant and associated stockpiling shall be set back at least 500 m from the site boundaries;
- h) Only operating mobile and the central processing plants with the use of water dust suppression (either sprays or high pressure fogging system) fixed to the plant or located beside the plant;
- i) All mobile processing plant and associated stockpiled processed aggregates will be located within the quarry floor and set back at least 500 m from the eastern boundary and 250 m from other site boundaries;
- j) Maintaining, establishing and enhancing shelter belt plants around the site boundaries;
- k) Measures will be taken to ensure trucks leaving the site are appropriately loaded, such as covering sands and fine material and any such load content, or spraying loads with water, to reduce the potential for material to be windblown from vehicles when leaving the site;
- l) Regularly applying dust suppression measures such as applying reject material or water to unsealed haul and access roads during any conditions when dust is likely to be discharged from them (ie dry and windy conditions);
- m) Undertaking routine site inspections of visible dust emissions throughout each day of operation, and logging findings and any mitigation actions electronically;

**Commented [DR15]:** Check? What is long term? Are there long term unprocessed aggregate piles and is it practical/necessary to vegetate?

**Commented [DR16]:** Check sense? So only vegetating if up to a height of 3m, what if more than 3?

**Commented [CR17R16]:** My understanding is the unprocessed aggregate is for the internal bund formation. This will have a layer of soil added to it and vegetated.

**Commented [CR18R16]:**

**Commented [CR19]:** LW prefers USEPA recommended 5m/s as this is when dust pickup starts to occur

- m) ~~Overburden stockpiles and bunds are to be re-vegetated or planted;~~
- n) The site will be rehabilitated as soon as reasonably practicable to limit potential for dust generation by minimising exposed surfaces;
- o) The use of pea gravel, reject gravel, or pit run gravel and dust suppressants on exposed surfaces, ~~including xxxxxxxinternal unsealed roads and loader working areas,~~ and additional use of suppressants (water or chemical dust suppressants as necessary to comply with ambient dust monitoring triggers and avoid visible dust plumes extending beyond the site boundary);
- p) Taking wind direction and speed into account in planning and carrying out work so as to minimise the risk of dust dispersion towards any residential dwellings that are within 250 m of the area where works are planned (e.g. stripping of overburden);
- q) Using water and/or dust suppressants on all exposed surfaces including extraction areas, roads and stockpiles when required to avoid visible dust plumes extending beyond the site boundary;
- r) Regularly maintaining unsealed internal roads and yard areas by grading and laying fresh gravel as necessary to avoid visible dust plumes extending beyond the site boundary;
- s) Maintaining an adequate supply of water and equipment on the Roydon Quarry site for the purposes of dust suppression at all times;
- t) Using chemical stabilisers or other equivalent measures on unsealed road surfaces, if water application is insufficient or unavailable and as necessary to avoid visible dust plumes extending beyond the site boundary;
- u) Applying a speed restriction on all internal unsealed roads of 15 kilometres per hour at all times and clearly signpost this limit on all internal roads;
- v) Keeping paved sealed roads and yard areas free of dust by either washing or use of sweepers vacuuming;
- w) Sections of the internal site access road will be sealed and used in conjunction with Us of a rumble strip to assist in removing muddy material from vehicle wheels before entering and exiting the site.

**Commented [DR20]:** Covered by conditions above – see stockpiles and excavation

**Commented [DR21]:** Needed? Already covered by 15

**Commented [DR22]:** Should we specify specific areas not addressed elsewhere eg. cleanfill access/working area etc

**Commented [CR23R22]:** I have added the words : internal unsealed roads and loader working areas

**Commented [DR24]:** Repeat?

**Commented [CR25R24]:** I think it helps to have dust suppressant condition that relates to stockpiles I think o) deals with exposed open areas ok but not stock piles

**Commented [DR26]:** Repeat?

**Commented [CR27R26]:** yes I think it repeats o)

**Commented [DR28]:** Repeat?

~~19)19)~~ No extraction shall occur within 100 m of any dwelling existing at [the date of consent being granted], without the prior written consent of the owners and occupiers of these dwellings.

~~19)20)~~ A permanent real-time PM<sub>10</sub> monitor (US EPA or National Environmental Standards for Air Quality 2004 (NES)) compliance equipment shall be installed and operated at or near the eastern site boundary directly downwind of the active quarry area for southwest wind conditions. This monitor is to record hourly and 24-hourly average PM<sub>10</sub> concentrations.

21) At least two A real-time Total Suspended Particles (TSP) and PM<sub>10</sub> monitors (referred to as the "mobile monitors") shall be operated ~~en-around~~ the quarry's site boundary and shall be located between the active quarrying/clean filling area and off-site sensitive locations that are less than 500 m away from the active quarrying/clean filling area. This mobile monitor can be of a type that is suitable for dust management but does not need to meet the standard for NES compliance monitoring. ~~These monitors will-shall~~ be calibrated against the reference method monitor in Condition 20.

**Commented [CR29]:** LW and DR would like to see this (TSP) removed. RC is also happy with this.

20)22) Design and operate a RCS monitoring campaign in consultation with CDHB and CRC.

**Commented [CR30]:** Experts agree . Wording to be refined.

24)23) When quarrying and/or clean filling operations cause continuously recorded PM<sub>10</sub> concentrations at the site boundary, to reach or exceed the trigger levels listed below, then additional dust control measures shall be implemented:

- a) Ten-minute rolling PM10 concentration of 150 micrograms per cubic metre (1-hour average);
- ~~b) Ten-minute rolling TSP concentration of 200 micrograms per cubic metre (1-hour average);~~
- ~~c) One hour rolling TSP concentration of 60 micrograms per cubic metre (24-hour average).~~

**Commented [CR31]:** The experts have not agreed on trigger limits.

**Commented [CR32R31]:** But we all agree that 65 ug/m3 (1 hour) PM10 is too low ?

22)24) All dust-generating activities ~~(except dust mitigation measures)~~ being undertaken within 250 m of sensitive receptor locations, shall cease when either of the following criteria are exceeded:

**Commented [LW33R31]:** Yes – The background data shows this would be exceeded even without the proposal

- a) Trigger concentrations listed in Condition 23) are exceeded at the boundary location ~~that is directly upwind from the sensitive locations and~~ downwind of site activities?e quarrying/clean-filling areas;
- b) The wind direction (10-minute average) places active quarrying/clean filling areas directly upwind of these sensitive locations when the wind speed exceeds 7 m/s and following a period of 12 hours or more of there being no rain at the quarry site.

**Commented [LW34]:** This is silly - dust mitigation measures do not generate dust

**Commented [LW35]:** I don't think this needs to be in here as an "and" condition. The whole point is to control emissions such that you don't get problems at the boundary monitor (which will be located to protect sensitive receptors).

b)c) How do we provide for activities being allowed to recommence?

What happens if the site activities causing the problems are not the active/clean-filling areas? Have suggested wording to address this but interested in your thoughts.

23)25) Condition 24)23) does not apply when detailed investigations by site personnel, or council enforcement officers, clearly confirms that there are no visible dust impacts or related dust nuisance effects occurring at the downwind sensitive receptor locations. This can include confirmation from occupants that they are not concerned with any nuisance dust effects occurring at the time of investigation and/or else when the criteria listed in Condition 23) are breached.

**Commented [CR36]:** Same query as above – shouldn't this be related to all site activities that could cause problems offsite (i.e. not just the location of the active face and clean fill)? It is after all triggered by "all dust generating activities" so I think that was the intent?

24)26) Water carts as a back-up will be used, as required, for dust suppression during dry weather, so that dust emissions from working areas, haul roads and stockpiles do not cause breaches of the trigger level listed in Condition 24) or any visible dusty plumes more than 30 m beyond the site boundary. Water will be available for dust suppression from an existing bore (M36/0257) on the site, in association with stored water (i.e. water tanks or similar vessels) in accordance with the conditions of CRCXXXXXX.

Further, wasn't there supposed to be an interim approach in the conditions so that you don't go to DEFCON 1 (stop works) straight away? i.e. a trigger threshold at which point you undertake additional mitigation, and then another threshold beyond which all works cease?

**Commented [DR37R36]:** Yes that was the original intent of proposed in the AQA, I would support developing a two tiered trigger.

25)27) Where the take of groundwater from the existing bore (M36/0257) is reduced in accordance with Condition 2(a) or (b) of CRC182422, the consent holder shall undertake dust suppression measures using the reduced bore take, water storage capacity on site (i.e. water tanks or similar vessels). and if necessary, chemical dust ~~suppressants~~ suppressants.

**Commented [CR38R36]:** active quarrying should cover all activities except for dust suppression. But any activity beyond 250 m from a house would be excluded.

Re two the triggers we currently with a PM10 or a wind speed trigger requires actions and shut down

26)28) Should the ability to take water authorised under CRC182422 cease at any time in accordance with Condition 2(c) of CRC182422, the consent holder shall assess the need to temporarily cease some or all parts of site operations requiring water usage to manage dust, including any mobile processing and acceptance of cleanfill, until such time when water can be taken again.

**Commented [LW39]:** There should be no visible dust plumes beyond the boundary (as per condition below)

### Planning of Activities

~~27~~29) The consent holder shall assess weather and ground conditions (wind and dryness) at the start of each day and ensure that applicable dust mitigation measures and methods are ready for use prior to commencing works for the day.

~~28~~30) At any time, including outside normal operating hours, if visible dust is blowing beyond the site boundary or if targeted monitoring triggers are reached, and irrespective of it being a dry, windy day, the consent holder shall:

- a) Cease all dust generating activities;
- b) Continue all dust suppression activities;
- c) Carry out the investigation of possible causes immediately and respond with appropriate corrective and preventive actions (Note: This may include immediate watering of both active and inactive exposed surfaces, even if dust generating activities have been ceased);
- d) Only resume site activities (other than dust suppression) once the appropriate mitigation measures are in place to prevent visible dust blowing beyond the site boundary; and when monitoring triggers as set out in Condition 24) are no longer being breached.
- e) Notify the Canterbury Regional Council within one working day of the event, including the cause of the event and results of the investigation.

### Reporting and Review

~~29~~31) The consent holder shall keep a record of any complaints relating to dust, and shall include:

- a) The location where the dust was detected by the complainant;
- b) The date and time when the dust was detected;
- c) A description of the wind speed and wind direction when the dust was detected by the complainant;
- d) The most likely cause of the dust detected;
- e) Any corrective action undertaken by the consent holder to avoid, remedy or mitigate the dust detected by the complainant; and
- f) This record shall be provided to the Canterbury Regional Council upon request.

~~30~~32) The lapsing date for the purposes of section 125 of the Resource Management Act 1991 shall be 5 years from the date of issue of this consent.

~~31~~33) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of:

- a) Dealing with any adverse effect on the environment which may arise from the exercise of this consent and which it is appropriate to deal with at a later stage; or
- b) Dealing with dust suppression requirements;
- c) Altering the suspended particulate monitoring requirements of the relevant condition;
- d) Ensuring compliance with any relevant National Environmental Standards.



Due to time constraints, the air quality experts did not review the remainder of conditions in other consents with the exception of the following land use condition for which the following suggestions were provided by Mr Kirkby and Ms Wickham (only):

**Excavation of Aggregate**

- 12) Excavation of aggregates shall commence with extraction in the centre of the site (adjacent to the central processing area shown in green) and shall occur in a progressive sequence (moving southward and then anticlockwise) generally in accordance with the three-part diagram in the plan attached as CRC192408A. (LW) Excavation and processing shall not exceed 600,000 tonnes per annum and 500 tonnes per day.
- 13) Site areas shall be limited to a maximum area in accordance with the following specified open ground limitations, at any one time, as set out in the table below:

**Table 1: Open area limits for active quarrying. (LW)**

Purpose	Area (ha)
Central processing area, its fixed plant, stockpiles, mobile plant etc.,	72
Excavation in process	51
Fill and rehabilitation in process	52
Site roads – unsealed	50
Field conveyor, service lanes	41
Total active area	266
Note: The above areas exclude the sealed access road(s) and any site buildings.	

- 14) The excavation of aggregates, deposition of cleanfill and stockpiling of aggregate and cleanfill material shall be setback 20 metres from the boundaries of the site.
- 15) Maintaining haul roads so that they are comprised of an aggregate base, with surfaces that are graded so they are and free of pot holes and sealing at least the first 100 m of the site access road and central ring road; (CK)

**Commented [CK40]:** As worded, this does not restrict the open, unmitigated, areas to the 5 ha used in RWC's assessment  
There is also a need to demonstrate compliance with the condition (e.g. as part of the survey required by (11) above

**Commented [LW41R40]:** It was 6 ha – have put areas used by Mr Cudmore into Table

**Commented [LW42]:** Stockpiling near boundary was not assessed (refer proposal as advised by Mr Cudmore in JWS)