

Thursday, 11 July 2019

Senior Resource Management Planner
Environment Canterbury Regional Council
PO Box 345
Christchurch 8140
Attention: Nick Reuther / Rubie McLintock

**APPLICATION FOR RESOURCE CONSENT CRC193563; CRC193564; CRC193772; CRC192773
SUPPLEMENTARY RESPONSE TO SECTION 92 (RMA) REQUEST FOR FURTHER INFORMATION**

Dear Nick and Rubie

On behalf of SOL Quarries Ltd, we have considered the matters raised in your recent emails requesting clarification of a number of matters contained in the Section 92 (RMA) Response, dated 12th June 2019, relating to the Application for Resource Consent associated with the proposed extension of the SOL Quarry at Conservators Road, Yaldhurst (CRC193563; CRC193564; CRC193772; CRC192773).

We have sought expert consultant advice regarding the matters of clarification and would advise:

- 1. In terms of the re-alignment, I am assuming it by up-gradient you mean that the re-alignment will commence where I have added an orange dot on the below image, and will proceed up-gradient into the Stocks' property and then west-wards along the Stocks' property boundary?**

We confirm that the alignment will commence at the location of the orange dot on the image and will proceed west-ward along the property boundary of the Stocks.



Figure 1: Confirmation of Commencement of Stockwater Race Realignment

2. What is the new RMA number for the existing CCC resource consent?

The Christchurch City Council (CCC) consent number for the Variation to the original resource consent, approved in June 2018, is RMA/2018/2777.

3. Could you please provide a rule assessment against Rule 5.179 for the storage of hazardous substances in a portable container?

5.179 The use of land for the storage in a portable container and use of a hazardous substance listed in Part A of Schedule 4 is a permitted activity, provided the following conditions are met:

1. *The substance is approved under the Hazardous Substances and New Organisms Act 1996 and the storage and use of the substance is in accordance with all conditions of the approval; and*
2. *The container(s) are not located within:*
 - a. *20 m of a surface water body or a bore; or*
 - b. *a Community Drinking-water Protection Zone as set out in Schedule 1.*

The diesel fuel and hydraulic oils to be stored on the Quarry Site are approved substances under the HSNO Act (the Act). SOL Quarries Ltd will store and use all hazardous substance in accordance with the conditions in Parts 16 and 17 of the Act.

The storage containers will not be located within 20-metres of a surface water body or bore, or within a Community Drinking-water Zone.

SOL Quarries Ltd currently hold a Certificate of Compliance for this activity (CRC155100) at the current Quarry Site and shall continue to meet the required permitted standards of Rule 5.179. Accordingly, we consider the storage of hazardous substances, in portable containers, to be a **“Permitted Activity”**.

4. Could you please clarify whether the 10,000-litre diesel tank will be located on concrete or compacted gravel?

The double-skin certified 10,000-litre diesel tank will be located on a concrete pad immediately adjacent to the Workshop, on the existing Quarry Site.

All loaders and the water trucks will refuel from the 10,000-litre diesel tank.

All mobile crushing plant and the Cat Bulldozer will be refuelled using a 1,300-litre tow-tank. The tow-tank will be stored, when not actually refuelling the plant, on the concrete floor of the Workshop.

5. Are the spill prevention measures different for the 10,000-litre diesel tank and tow-tank?

In principal the spill prevention measures are similar between the stationary 10,000 litre diesel tank and the tow-tank. While the procedures for refuelling and spill prevention are detailed in the Quarry Management Plan (Quarry Site Environmental Plan), they are summarised below.

- a. In both cases, refuelling occurs over a bunded spill containment area/pad. With respect to the 10,000-litre stationary diesel tank, refuelling occurs on a bunded concrete pad. In the case of refuelling from the 1,300-litre tow-tank, all refuelling occurs on a 1.5m x 1.5m bunded spill pad.
- b. All staff are trained in Refuelling Procedures and Spill Management (refer attached Training Sheet). Re-training for all staff occurs annually.

- c. Spill kits are held, and maintained, in each SOL vehicle, in the Workshop and in the pump motor housing on the tow-tank.
- d. Two wheelie bin spill kits are located in close vicinity to the stationery tank (10,000-litre diesel tank) and are available for use anywhere in the Quarry, if required. These bins contain absorbent pads, containment booms, clean sawdust, shovels, and double-lined plastic bags.
- e. Southfuels Ltd owns and supplies the stationery and tow-tank. Southfuels Ltd is responsible for tank refuelling, maintenance and compliance certification. While the storage of diesel does not require a *Location Compliance Certificate*, the 10,000-litre diesel tank requires a *Stationary Container Compliance Certificate*.
- f. Fill points of the stationery tank are installed in a way that ensures containment of any spillage at the fill point.
- g. The operation of the mobile tow-tank is undertaken in accordance with strict procedures to prevent any spills or incidents. The QMP (QSEMP Section) details procedures including a pre-towing checklist, using and towing the trailer tank and the required maintenance of the tank. The mobile tow-tank also contains a heavy-duty plastic bag spill kit with absorbent pads and portable spill sock. All Quarry utes carry shovels and containers for use in case of a spill event.

6. Can you please provide some addition details on the enabling earthworks? I.e. to what depth will topsoil be stripped to, pushing up bunds, hydroseeding? etc if required

The enabling earthworks will involve stripping topsoil to a depth of approximately 300 – 500 centimetres using a Komatsu WA480-6 Loader and/or a Caterpillar 651 Scraper, in order to create the bund. The bund will have a total length of 545-metres and a height of 3-metres. The bunds will contain 12,270m³ of top-spoil, stripped from approximately 30,000 m² (3 ha) of the proposed Quarry, which will be excavated, processed as aggregate, infilled with cleanfill and revegetated.

The bund will be planted using low-seed generating grass species which do not attract birds or insect species that in turn attract birds low-seeding grass. The use of specific grass species will mitigate the potential for the Quarry operations to affect Christchurch International Airport Limited (CIAL) assets, infrastructure or operations as a result of any increase in bird strike risk.

7. Do you have any idea of where the on-site air quality monitoring equipment will be installed?

The Air Quality Report (Pattle Delamore Partners; 12th June 2019), pp 37 – 40, contains details of the proposed Air Quality Monitoring.

“One of the key elements of SOL Quarries’ air quality monitoring programme is a 10 m high meteorological mast carrying windspeed, wind direction, temperature and relative humidity sensors. A rain gauge is installed alongside the meteorological mast. The meteorological mast has been installed on-site and is located on the western boundary of the Site. Because of the surrounding flat terrain while it is located on the western end of the Site the instruments will provide data that is representative of conditions being experienced across the entire Site. ... The data from the meteorological site is telemetered via a cellular network to Harvest.com where it is available for viewing and analysis on that website.

The second key element to SOL Quarries’ air monitoring programme will be a PM₁₀ monitor. The PM₁₀ monitor is likely to be a nephelometer (light scattering) instrument which provides real-time PM₁₀ measurements which along with the meteorological data (sic) be telemetered to the Harvest website. The PM₁₀ monitor will be set up on a steel frame and powered by batteries which are recharged by solar panels. This configuration allows the PM₁₀ monitor to be quickly and easily (within say 2 hours) to capture PM₁₀ concentrations when the wind is blowing toward nearby sensitive receptors.”

PDP Report, p. 39

Figure 17 in the Pattle Delamore Partners Report (p. 39) shows the location of the Meteorological Mast and the approximate location of the Air Quality Monitors (PM₁₀ Monitors). The Figure, below, provides a clearer location of the proposed Air Quality Monitors (blue circles) based on discussions between SOL Quarries Ltd management, Pattle Delamore Partner air quality specialists and ECan Compliance staff. However, as stated in the PDP Report, the PM₁₀ monitors are set up on a steel frame, making them portable and able to be relocated to measure PM₁₀ concentrations relative to nearby sensitive receptors.



Figure 2: Location (approximate) – Air Quality Monitors

8. Does the cleanfill licence relate to rehabilitation at all?

The subbase material which is used to infill the extracted aggregate will be inert cleanfill. All cleanfill will be inert and will comply with the Ministry for the Environment Guidelines for cleanfill.

The cleanfill subbase will be battered, compacted to a degree that allows for free drainage, and covered with a minimum 300 – 500mm of clean topsoil, before being grassed. The grasses used will be low-seed generating species which do not attract birds or insect species that in turn attract birds.

The Cleanfill Licence is a permit from Christchurch City Council, in addition to the requisite resource consents granted by ECan and CCC, which authorises the acceptance of cleanfill materials for permanent disposal on any property, including in this case the SOL Quarry. The Cleanfill Licence is renewed annually, subject to satisfactory performance and the payment of any annual licence fee.

9. When staff on-site confirm that material is not from the LLUR, is this recorded anywhere?

SOL Quarries Ltd has a comprehensive system for recording all loads of cleanfill. Prior to acceptance of the first load of cleanfill from a Site a Cleanfill Declaration Form is completed by the Quarry Client and submitted to the Quarry Administration Manager for assessment and confirmation.

Upon confirmation that the cleanfill meets the acceptable criteria and the Site from which the cleanfill has been sourced is not registered on the LLUR, the Site is allocated a unique Cleanfill Number (QC number). Details associated with the Cleanfill are recorded in a Register (Cleanfill Register).

The Cleanfill Register contains the unique Cleanfill Number, the Client, the date of the Declaration, the location (Site), the type of waste, the approximate quantity (tonnage / cubic metres), and confirmation that the cleanfill meets the acceptance criteria. A copy of the Cleanfill Declaration is scanned and saved in a SOL network database.

Each load of cleanfill is then recorded in an Excel spreadsheet. The spreadsheet records the unique Cleanfill Number, the date, time Client, the truck registration number, the truck driver's name, the type of cleanfill, and the tonnage.

The Cleanfill Register and the Cleanfill Daily Records are audited by Compliance Officer from both ECan and CCC, during their regular Quarry Site Visits (every 1 – 3 months). To date there has been no identified non-compliance; rather, the SOL Quarry system has been used by Compliance officers from both Councils as an example of a comprehensive and effective method of monitoring cleanfill.

10. In regard to the s92 questions, we asked for a detailed complaint assessment in Section H. The s92 response covers the complaint data in Section 8 of the PDP report. However, the focus of this appears to only be on complaints that have been substantiated rather than giving an overview of the entirety of the complaints, including those that have not been substantiated. Could you please clarify this and provide a more detailed assessment to fulfil the requirements of Section H?

The complete Complaints Register is appended to this Supplementary Response. The complete Register confirms that a number of complaints do not relate to the SOL Quarry; rather to quarries at other locations (e.g. Old West Coast Road; McLeans Island Road). Furthermore, the complaints relating to dust involve, in the main, material tracked onto Guys Road from the Heavy Vehicle Access, which forms dust when it is dry. This matter has been resolved by sealing a further 150-metres of the access road (250-metres in total) and compacting used, aged chipped asphalt on the remainder of the Heavy Vehicle Access. The last complaint recorded by ECan, CCC or SOL Quarries Ltd dates from 1st April 2019.

The complete Complaints Register confirms that there have been NO complaints relating to the Quarry operations (stripping topsoil, screening & crushing activities, or loading trucks).

11. I have also been speaking to one of our groundwater scientist regarding the proposed excavation depth to 1 metre above highest groundwater level. However, at the moment the application assumes this as being 12 metres, based on the on-site well readings. Our groundwater scientist has indicated the site slopes down from 49 m asl in the west to 44.5 metres asl in the east. She has identified that M35/0956 has a highest recorded groundwater level of 9.5 metres bgl and although this may have not been measured since 1989, it may mean there is a change that on the eastern parts of the site groundwater levels can reach a lower depth and as such, excavation depths may be affected. Therefore, we may need to discuss refining this.

SOL Quarries Ltd proposes to excavate gravel to a maximum depth of 10.00 metres below natural ground level, or a minimum of 1.00 metres above groundwater level – whichever is the higher. Based on an analysis of the proximate wells and groundwater readings from 3 wells on-site, excavation to a maximum of 10.00 metres below natural ground level will provide a minimum of 2.00 metres between the excavation depth and the highest recorded groundwater level on the Site. A copy of the *Groundwater Depth Database* is appended to this Supplementary Response.

We accept that the proposed Quarry slopes in elevation from west to east; however, the height above sea level (asl) indicated above does not correlate with the well data. The well data (ECan GIS – Canterbury Maps) indicates natural ground level sloping from approximately 53.00 metres asl to 46.30 metres asl. In addition, while natural ground level slopes from west to east, the relative separation between natural ground level and the highest recorded groundwater level remains relatively constant. Table 1, below, provides a summary of the well data (ECan GIS – Canterbury Maps; July 2019).

BORE	RL	GROUNDWATER LEVEL	DATE
BX23/0035	53.00m	-12.50m	19.12.2012
BX23/0036	51.00m	-12.11m	19.12.2012
BX23/0037	51.00m	-12.91m	19.06.2012
BX23/0520	Not recorded	-11.13m	29.05.2012
M35/0958	48.05m	-12.10m	Not recorded
M35/0947	48.11m	Not recorded	Not recorded
BX23/0871	Not recorded	-12.20m	20.11.2018
M35/0956	46.49m	-9.52m	1.09.2003

Table 1: Summary Well Data (ECan GIS – Canterbury Maps; July 2019)

Figure 3, below, provides a Map identifying the location of the wells contained in Table 1, above.

PDP PROPOSED MITIGATION MEASURES	CONFIRMATION OF STATUS
Installing two judder bars near the Guys Road entrance to help dislodge dust.	The two judder bars were installed in late 2017.
Sealing the Guys Road entrance with asphalt to reduce truck damage to the surface.	The Guys Road entrance asphalted during the enabling works, prior to the Quarry opening in May 2016.
Chip sealing of the first 100 metres of the heavy vehicle road.	The first 100 m of the heavy vehicle road was chip sealed during the enabling works, prior to the Quarry opening in May 2016.
Chip seal an additional 150 m of the heavy vehicle road.	An additional 150 m of the heavy vehicle road was chip sealed in mid-2018.
Surfacing the remainder of the haul road with crushed used asphalt which has lower dust generation propensity than gravel.	The remainder of the haul road was surfaced with crushed used asphalt in early 2019, after discussions with ECan Compliance staff.
The use of a water cart or k-line sprinklers to suppress dust when conditions require.	A water truck is used together with a k-line sprinkler system, when appropriate. A 2 nd water truck is also on-site in case of a mechanical breakdown with the primary water truck.
The entrance at Guys Road is swept by Waste Co Ltd. The sweeping is undertaken 5-days a week to remove any dust deposited at the entrance that could cause a nuisance effect.	The use of a contract road sweeping company was introduced in late 2016 and the frequency of road sweeping increased until it is now undertaken daily.
Site traffic movements are restricted to 15 km/h.	The 15 km/hr speed limit was an original Consent Condition and has been enforced by SOL Quarries since the Quarry opened. Advice regarding the speed limit (15 km/hr) is included in the Induction of Visitors, including truck drivers. SOL Quarries operates a hand-held speed camera to identify excessive speeding, particularly on the Heavy Vehicle Road. Quarry staff are authorised to issue formal warning for excessive speeding.
Maintain a meteorological weather station, which provides real-time recordings of wind speed. The application of water as a dust suppressant is used during operation hours when the wind speed exceeds 5 ms ⁻¹ .	The meteorological weather station has been in operation since the Quarry opened and provides real-time advice regarding wind speed, enabling Quarry management to implement dust suppression and restrict quarrying operations (i.e. curtail dust generating activities).

Potentially dust generating activities (crusher/screening operation without watering, topsoil stripping/spreading, formation of bunds/stockpiles) will be stopped when wind speeds exceed 10 ms ⁻¹ .	The meteorological weather station provides real-time advice regarding wind speed, enabling Quarry management to implement dust suppression and restrict quarrying operations (i.e. curtail dust generating activities).
Real-time monitoring of PM ₁₀ to inform use of dust mitigation measures and provide feedback on their effectiveness.	SOL Quarries Ltd has purchased real-time air quality monitors and has identified optimal locations with ECan Compliance staff. The air quality monitors will provide an alert to Quarry management in the unexpected event of fugitive dust.
Stockpiles will be located at the north-western end of the quarry pit to ensure large buffer distances to residential dwellings (potentially sensitive receptors).	Based on expert advice from PDP and an analysis of ECan and industry-best-practice separation distances from potentially sensitive receptors, the north-western corner of the Quarry extension has been identified as the optimal location for the crushing and screening plant.
Raw gravel will be extracted in a damp state and stockpiled for use as soon as possible. SOL Quarry will minimise the 'surge' piles of raw material excavated for processing.	The raw material from the Quarry Pit is naturally damp. SOL Quarry management will ensure that, as far as practical, damp product is extracted from the Quarry face and processed without undue delay.
Maintaining vegetation cover on the bunds and those areas not being actively quarried.	SOL Quarries will continue to maintain the vegetation cover on the bunds and all surfaces not being actively quarried. The current practices are deemed compliant in this regard.

Table 2: Confirmation of Mitigation Measures

13. Please confirm the boundary of the Quarry extension.

Please find attached the confirmed Site Plan and a copy of the boundary adjustment Subdivision Plan relating to the amalgamation of a portion of the Higgs property with the SOL Quarry.

On behalf of SOL Quarries Ltd, I trust these responses address the matters raised in your request for Supplementary Information, contained in your recent emails. However, please do not hesitate to contact me should you require further information or clarification of any matter(s).

Sincere regards,
LANDS AND SURVEY (SOUTH) LTD



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