

**Before Independent Commissioners Appointed by the Canterbury Regional Council and Selwyn District Council**

**In the matter of**            The Resource Management Act 1991

**And**

**In the matter of**            Applications by **Fulton Hogan Limited** for all resource consents necessary to establish, operate, maintain and close an aggregate quarry (**Roydon Quarry**) between Currags, Dawsons, Maddisons and Jones Roads, Templeton

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**SUMMARY STATEMENT OF ALEC JULIAN RASK JORGENSEN ON BEHALF OF FULTON HOGAN LIMITED**

**EQUINE HEALTH**

**DATED: 13 NOVEMBER 2019**

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## **Introduction**

1. This document serves as a summary of my opinions outlined in my rebuttal evidence of Gareth Fitch.

## **Inflammatory Airway Disease**

2. I agree that Inflammatory Airway Disease (**IAD**) is a major concern for the health and performance of horses. This is a common condition in the general horse population with similarities to asthma in people.
3. It is my opinion that, airbourne silicate particles are potentially inflammatory to the lower airway of horses.
4. My comprehension of the detailed evidence regarding air quality is that the proposed quarry is not going to fundamentally change the exposure of local horses to silicates, beyond the normal fluctuations and variations encountered in the natural environment.
5. It is my opinion that, horses are constantly exposed to dust and particulates containing silica in the natural environment and in the domesticated equestrian environment.
6. It is also my opinion that, many of our normal practices of husbandry and training elevate this potential exposure.
7. It is my opinion that, in many instances, if there is a desire to decrease the exposure of horses to particulate matter containing silica, the most effective control measure would commence with the changing of practices within the property.
8. With respect to the risk of the proposed quarry influencing the incidence of IAD in horses on neighbouring properties there is some difference in opinion between Dr Fitch and I. The following statement was produced in the JWS.

*Dr Jorgensen considers that the silica particles do not make a significant contribution to inflammatory airway disease relative to other causal and proven factors i.e. mould spores and other organic material. Gareth Fitch maintains that silica particles of a particular size, sufficient to reach the alveolar airway are a cause of airway inflammation independent of other factors; of relevance to the latter, the particle type, level and distribution would be considered important and that that information is not available today.*

9. It is my opinion that the causative agents of IAD are many and varied in the environment and there may be individual genetic predispositions. If exposure to silicates plays any role in the development of IAD, it is likely to be minor and dose dependent.
10. Given that extensive research into IAD has been performed it would be expected that there would be literature and recommendations specifically related to the exposure of horses to silicates. I accept that particulate size alters the potential penetration of particles to deeper in the lung. However, focusing on such minutia of scientific detail risks ignoring the broader, practical perspective which is that silica is one of the most abundant elements on the planet. Horses inhale particulate silicates constantly in the environment. These will be of a widely varied size.
11. In my opinion the question is not; can silicates of a particular size penetrate deep into the lung and cause inflammation under experimental conditions? Rather the question is; given that horses are constantly exposed to silicate particles in the natural environment and given that despite this, silicates are not recognised as a major contributor to IAD; is the proposed quarry going to increase the risk of the horses in the vicinity developing IAD? In my opinion, it will not.

### **Pulmonary Silicosis**

12. Pulmonary silicosis is a specific condition of the horse caused by inhalation of silicates from environmental exposure. It is a different condition to IAD. Pulmonary silicosis is extremely rare. Despite constant environmental exposure of horses to silica at varying levels, pulmonary silicosis is only reported in a localised geographical area of California. Pulmonary silicosis, as a disease process, has been linked to an increase risk of stress fractures in horses.
13. In my evidence I disagreed with its relevance in this case.
14. It was agreed by both experts in the JWS that “the risk of the occurrence of silicosis is likely so small as to not be relevant.”
15. The risk of an increase in stress fractures is linked to the development of silicosis. In my evidence I disagreed with its relevance to the Fulton Hogan proposal. It was agreed by both experts in the JWS that - as there is no

significant risk of the development of silicosis (point 6.) - there is therefore unlikely to be any increase in stress fractures.

**Alec Jorgensen**

13 November 2019