

*SOL Quarries
joint hearing
7 Dec 2020*

IN THE MATTER	The Resource Management Act 1991
AND	Applications by SOL Quarries Ltd to extend the existing SOL quarry onto land at 93 and 133 Conservators Road, Christchurch (RMA 2019 373 CRC193563, CRC193564, CRC193773)
BEFORE	Canterbury Regional Council and Christchurch City Council
APPLICATION	
ON BEHALF OF	SOL Quarries Ltd.

SUMMARY OF EVIDENCE OF MARK JAMES TAYLOR

1. My full name is Mark James Taylor. I am an ecological consultant in respect to aquatic values. I hold the qualification of a Bachelor of Science. I have read the Environment Court practice note on expert witnesses that took effect on 1 December 2014 and I undertake to comply with it.
2. I undertook a site visit on the 30th April 2019 where Mr Hedley showed me the reach proposed to be diverted. On that date, I toured the reach downstream of the SOL Quarry to investigate its flow path.
3. The proposed reach to be diverted was subject to an ecological investigation by my consultancy company Aquatic Ecology Limited. This survey was undertaken on the 2nd May 2019, and composed of 3 elements, the quality of the physical habitat, and the nature and conservation status of the resident invertebrates and fish (Webb, 2019). While prepared by a qualified employee at the time, I reviewed the report, and I am familiar, and agree with, its findings.
4. He concluded that the physical habitat race provided little variation in depth, velocity and substrate, and provided little refuge for aquatic biota. This is not surprising, given that it is constructed with the main purpose for the efficient conveyance of stock and irrigation water.
5. The race was occupied by a number of common invertebrate species reflective of low stream health, attributed to the uniform habitat and the amount of deposited sediment. Low numbers of a common native fish (upland bully *Gobiomorphus breviceps*) were identified. This species has a national conservation status of 'not threatened' (Dunn *et al.*, 2017), and breeds locally.
6. With care and timing in respect to the fish life, the ecological impact of diverting the waterway will be minor. The resident biota are conditioned to a degree of siltation and turbidity due to the Waimakariri River source, but perturbation of the channel switch this can be minimised with good erosion and sediment control.
7. CCC wish to enhance the riparian margin of the waterway to benefit the aquatic community. On almost all occasions, I would advocate riparian enhancement in natural channels. However, given the habitat requirements of the one fish species present in a constructed race, I do not consider riparian enhancement necessary provided the upland bully have a channel bottom composed of

rounded cobbles in which they can spawn and shelter. While there may be some increase in invertebrate abundance with riparian planting, ecological biodiversity is not likely to improve with riparian enhancement like a natural channel. This is because of the isolated nature of the reach in respect to potential fish and invertebrate sources.

8. Specifically, the low biodiversity is due of the existence of a fish screen on the Waimakariri River intake, the long water path from the intake to this habitat (c. 18 km), and a number of road culverts and siphons which inhibit fish and invertebrate migration. Moreover, the raceway goes to ground a short distance downstream near the airport, which dooms any eels will find their way to the sea to breed. I do not believe the water quality is in itself a limitation, because it is essentially Waimakariri River water that supports abundant aquatic life in a natural river setting.

References

- Dunn, N. R., Allibone, R. M., Closs, G. P., Crow, S., David, B. O., Goodman, J. M., Griffiths, M., Jack, D., Ling, N., Waters, J. M. and Rolfe, J. R. (2017) *Conservation Status of New Zealand freshwater fishes, 2017*, Wellington: Department of Conservation.
- Webb, C. J. (2019) *Assessment of Environmental Effects: Paparua Stockwater Race (PSR) Diversion*, Christchurch: Aquatic Ecology Limited(172).

