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Re: Trans-Tasman Resources Limited iron sand extraction and processing application

EPA Reference: EEZ000011

To: The Environmental Protection Authority TTRLApplication@epa.govt.nz
Cc: Trans Tasman Resources Ltd EEZSubmissions@ttrl.co.nz

This is a personal submission from:

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Personal background:

I am a medical specialist doctor, with a strong interest in the impacts of climate change and resource exploitation on the health of current and future generations.

- I encourage the EPA to **decline** the application in its entirety
- I **wish to speak** to my submission in person or by telephone/video link
- I do not have any competing interests apart from wishing to optimise the conditions for healthy survival of humanity and other species.

My main reasons for opposing this application are:

1. Disruption of the sea and seabed with risks of lasting damage
2. It is more ecologically and economically sound to recycle iron and steel
3. I am concerned that an iron-deplete environment could be detrimental to the local ecology

Disruption

We are not living in a stable environment. These are dynamic times, with altered weather patterns, ocean acidification and warming, and the ever-present risk of seismic activity as some of the important factors. 2016 is set to be the warmest year on record and sea level is rising at 3.4mm annually. Marine life is already stressed by the changing acidity. Changing temperature and weather patterns will affect hydrodynamic gradients, and the behaviour of sediment flows. Cumulative effects should take into account the changes from climate change, and from seismic activity.

There are to be five different specialised ships, each fuelled (presumably) by diesel and capable of leaking diesel, especially during refuelling operations (or accidents). There are lots of accidental spills and contamination from oil exploration and drilling. I do not see any reason to think that this will not be the case here, even with the best of intentions. From my reading of the risk assessment¹, (table 3), significant risk and consequences come from “other wastes” and accidental release of fuel oils and lubricants, not even part of the extraction process. In addition, this considerable diesel-powered fleet, by combusting fossil fuel, will contribute to climate change through greenhouse gas emissions.

Following underwater landslides during the recent Kaikoura earthquake, turbidity currents travelled 300km². I do not suggest that the disruption caused by proposed seabed ‘crawling’ will be anything like the earthquake, but do point out that the NIWA staff were surprised by the extent of turbidities and that should raise a note of caution when so much of the impact assessments is uncertain. What happens to the turbidity during aftershocks which can be expected for some time yet – or from relatively small new activity? Marine life has been affected by the Kaikoura earthquake off the coasts of east South Island. Does that impact on the totality of marine life in NZ waters? Do we need to take extra care off other coasts to balance up?

Recycling iron

Steel is widely recycled, so why do we need to cause all of this disruption in the first place?

Recycling steel uses 75% less energy than making steel from raw materials, saving about 58% CO₂ (carbon dioxide) emissions. One metric ton of recycled steel saves 1.1-1.4 metric tons of iron ore, 630 kg coal (or equivalent oil), and 55 kg limestone. There is less water and air pollution, and less processing waste. Recycling saves slowly-decomposing iron and steel from our overfilled landfills, and saves a lot of money ie it is economically beneficial.

Altering the iron content

The human body thrives in particular conditions of nutrition, temperature, pH, minerals etc. I understand that this is the case for ecosystems generally. Various bacteria, plankton and other species have evolved with the current conditions of iron in their environment. I don't know what happens to them and their biochemical processes if the iron is removed, especially as temperatures are increasing and pH decreasing year by year.

Thank you for the opportunity to submit

A O MacLennan
12th December 2016

¹ Chiffings T (2016) Lodgement Review of Effects on Plankton, Fish and Marine Mammals, TTRL Marine Consent Application

² <https://www.niwa.co.nz/news/scientists-detect-huge-fault-rupture-offshore-from-kaikoura>