

EXCLUSIVE ECONOMIC ZONE AND CONTINENTAL SHELF (ENVIRONMENTAL EFFECTS) ACT 2012 (the Act)

Trans-Tasman Resources Limited iron sand extraction and processing application

M41 – Minute of the Decision-Making Committee – 10 April 2017

Additional questions

1. As signaled in Minute 37 the Decision-making Committee (DMC) has prepared a list of additional questions and requests for information. Primarily these are directed at the applicant but some matters have implications that may benefit from consideration by experts from other parties.
2. The DMC wishes to thank the sediment plume experts who provided additional statements in respect of the “worst case” sediment plume modelling. It is acknowledged that the applicant’s expert considers that this “worst case” sediment plume modelling is not materially different to the modelling that was the basis for evidence in the hearing.
3. However, the DMC consider that there are some differences and the DMC also acknowledges the discussion with parties during the hearing confirming the opportunity for other experts (benthic ecology, primary production, effects on fish and effects on marine mammals) to comment on the additional modelling.
4. On that basis, the DMC requests the applicant to provide the optical modelling for the “worst case” sediment plume modelling in order for the other experts to compare the potential effects. Once the revised optical modelling for “worst case” sediment plume modelling is available then there will be an opportunity for the relevant experts to respond, and conferencing may be required.
5. Accordingly Appendix 1 sets out additional information requested from the applicant, primarily in respect of the sediment plume. Appendix 2 sets out some follow up questions for the wider groups of experts in benthic ecology, primary production, effects on fish and effects on marine mammals once the optical modelling and other information is available.
6. The DMC also considers that additional information, including modelling which has regard to the specific characteristics of the environment and is not based on a simple spherical approach, would enable it to better understand the potential effects of the project’s noise on marine mammals. A marine acoustics expert did not appear for any of the parties in the hearing but the topic was raised by a number of witnesses who did appear. The DMC understands that the applicant has engaged an acoustics expert to assist Dr Childerhouse prepare the remaining information requested in Minute 33. The DMC requests the applicant to confirm as soon as possible if this expert is able to assist with the matters set out in Appendix 3 and what timeframe might be required to provide the information.

7. The DMC also consider it would be helpful in understanding the information already provided to the DMC if key aspects of it were spatially mapped. The preferred list of what is to be mapped is attached as Appendix 4. The DMC asks the EPA staff to work with the applicant to produce this information in this format to the extent practicable.
8. There are also a number of outstanding matters raised during the hearing where witnesses agreed to provide information and it has not yet been provided. The DMC requests the EPA staff follow up with relevant parties to ensure this information is provided by 21 April 2017 where practicable.

For the DMC:



Alick Shaw
DMC Chair
10 April 2017

Appendix 1 Questions for the applicant

Sediment Plume - Modelling

1. How were the discharge standards in the latest set of proposed conditions derived?
2. How do the proposed discharge standards (in the latest set of conditions) compare to the model inputs used for the application and also those used in the worst case scenario modelling. How different would the modelled results be, if the mining activity were to be continuously exercised to the proposed maximum discharge rates?
3. Define the bands (in terms of distance and/or direction) which comprise near, mid and far field deposition. Also provide a map showing the locations of the 2km, 8km, 20km points referred to in evidence of Dr Dearnaley, which were requested during the hearing?
4. To what degree is the sediment plume model applicable in the near field area? If it has limited (or no) applicability, what method or methods can be used to understand dispersion and deposition in that area?
5. Provide the suspended sediment concentration (SSC) statistics (25%, 50%, 95%, and maximum) for the ten locations assessed in the worst case modelling report. This should be presented both in tabular form and visually (bell curves) for the 'background' (no-mining), 'mining derived', and 'background plus mining' datasets. Both surface water and near-bottom water datasets should be presented.
6. Including the Project Reef, provide the predicted sedimentation rates, both the 5-day and 365-day rates, for the same ten locations which were assessed for SSC in the worst case scenario modelling. Like the SSC tables, this should include 'background' (no-mining), 'mining derived', and 'background plus mining' for both the 5-day and 365-day deposition rates.
7. The earlier set of conditions (those attached to Dr Mitchell's Evidence in Chief) includes Condition 20b which would not allow the actual 25th, 50th, 80th, and 95th percentile SSC values to be 'significantly' greater than the background (no mining) percentile values predicted by the Operational Sediment Plume Model or the values in Schedule 2. Please clarify what is deemed to be 'significant' in terms of this condition.
8. If there is information available on river-borne particle size distribution (PSD), provide that data for the material that enters the coastal marine area (CMA) from rivers during average

and flood flows. Rivers of interest to the DMC include the Tangahoe, Manawapou, Patea, Waitotara, Whanganui and Whangaehu.

Sediment Plume - Ecology

9. Provide a copy of report entitled "Trans-Tasman Resource Ltd consent application: Ecological Monitoring" (James, M. R., MacDiarmid, A., February 2016. 13 pp.) referenced on page 211 of the IA. The IA states that the Response and Compliance Limits have been determined from the ecological monitoring assessment presented in this report, however it is not included with the Technical Reports which support the IA.
10. With respect to ecological effects, provide a summary of any SSC standards or guidelines that are used in New Zealand and overseas (e.g. Canada, USA, Europe).
11. Provide a summary of the literature on the effects of suspended sediment on marine fauna and flora. The focus should be on New Zealand based research, including any work on fauna/flora known to be present within the South Taranaki Bight (STB), and with particular regard to kaimoana species. However, where information is lacking, then overseas research results should be summarised. Information should be presented on not only the magnitude of SSC which results in adverse effects but also any research on duration of exposure effects.
12. Define the extent of sediment plume derived changes in PSD within the SSC of the receiving environment, both near shore and closer to the project area.

Other

13. If there is more recent information available regarding krill aggregations in the STB, map these to improve on Figure 6-1 from Report 17. Advise whether any other areas of NZ have similar or greater recorded levels of krill aggregations.
14. Is there more recent cetacean evidence that may be relevant, such as the outcome of acoustic studies by NIWA in Cook Strait?

Appendix 2 Questions for other expert following additional information being provided

Once the revised optical modelling is available, and with regard to updated PSD information provided by the applicant, the following questions will be referred to experts for benthic ecology, primary production, effects on fish and effects on marine mammals.

1. When, where, and to what extent will elevated SSC levels cause environmentally significant changes (for benthos, primary production, fish) arising from light received. Decreased primary production is an example. What comprises a “significant” change should be specifically addressed.
2. When, where, and to what extent will elevated SSC levels cause environmentally significant changes (for benthos, primary production, fish) related to physical effects. Smothering of algae or filter feeders is an example. What comprises a “significant” change should be specifically addressed.
3. What issues of materiality, in terms of ecological effects, do you perceive between the original modelling and the HR Wallingford 17 March 2017 modelling.

Appendix 3 Questions for marine acoustic expert

The DMC is interested in project, site and environment specific modelling which will enable it to better understand the potential effects of the project's noise on marine mammals. This would include:

- Define all likely noise sources associated within the project, and incorporate them into an acoustic model.
- Model the sound produced by the project, such that it reflects the physical characteristics of the site and wider STB (such as bathymetry), the nature of the project (such as sound duration and frequency), and the potentially affected species. It is expected that this modelling would not be based on a simple spherical approach.
- Model and present data as background; project alone; and background plus project.
- Provide a graphic (mapped) representation of sound levels within a 100km zone surrounding the project area, and at all depths within that zone.
- Integrate USA NOAA (National Oceanic and Atmospheric Administration) interim sound threshold guidance or other international guidance related to the use of marine acoustic models, with particular regard to parameters relevant to marine mammals (including cetaceans and seals).
- Present draft findings to the marine mammals witness caucus and incorporate their feedback as appropriate.
- Review and comment on the noise related evidence of other parties, already provided to the DMC during the course of the hearing.
- Provide the noise contours map as offered during questioning.
- Provide update of hearing ranges chart (Figure 1 and Table 1 in evidence) to include seals, as offered during questioning.

Appendix 4 Preferred list of data to be spatially mapped

Reefs

Currents

Bathymetry

Seabed type and known ecosystems

Mammal sightings by species

Mammal beaching by species

Marine mammal sanctuary areas (existing and proposed)

Set net restriction areas (commercial and non-commercial)

Maui dolphin habitat protection

Trawl tracks

Fishing effort

Fisheries management areas

Recreational fishing locations

Customary fishing / kaimoana gathering locations

Customary marine title application areas - Te Kaahui o Rauru, Te Rūnanga o Ngāti Ruanui Trust, Te Korowai O Ngāruahine Trust

Statutory acknowledgement areas (coastal edge only) - Te Kaahui o Rauru, Te Rūnanga o Ngāti Ruanui Trust, Te Korowai O Ngāruahine Trust

Plume dispersal, SSC, optical, and PSD data

Monitoring sites

Origin/Kupe infrastructure and permit area

Noise contours