

**BEFORE THE BOARD OF INQUIRY  
TAMARIND DEVELOPMENT DRILLING APPLICATIONS**

**EEZ100016**

**IN THE MATTER**

of the Exclusive Economic Zone and  
Continental Shelf (Environmental  
Effects) Act 2012

**AND**

**IN THE MATTER**

of a Board of Inquiry appointed under  
s52 of the Exclusive Economic Zone  
and Continental Shelf (Environmental  
Effects) Act 2012 to decide on  
Tamarind Taranaki Limited's marine  
consent and marine discharge consent  
applications

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**SUMMARY STATEMENT OF EXPERT EVIDENCE OF  
SHARON BETTY DE LUCA FOR TAMARIND TARANAKI LIMITED**

**Dated: 7 November 2018**

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**Govett Quilliam**  
THE LAWYERS

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## **MAY IT PLEASE THE BOARD**

1. In this summary statement of evidence, I set out the key conclusions of my primary evidence dated 20 July 2018.

### **Summary of the key findings of my primary evidence**

2. My primary evidence provides an assessment of potential adverse effects of the proposal on benthic habitats and organisms.
3. The South Taranaki Bight covers an area of approximately 330,000km<sup>2</sup>. The Taranaki coastal environment is characterised by a high energy wave and wind climate.
4. The benthic habitat and species within the Tui field and control sites are similar to elsewhere within the 100-200m depth habitat of the South Taranaki Basin (STB), comprising moderate-high richness, abundance and diversity of common benthic invertebrates, the presence of both tolerant and sensitive species, the marine sediments comprising primarily silt, sediment contaminants being largely below effects thresholds, few/nil invasive species present, and habitat modification moderate.
5. The proposed planned activities include temporary occupation and disturbance of the benthic habitat, mortality of some benthic invertebrate organisms, minor increases in turbidity, temporary vibration, discharge of drilling and milling fluid, discharge of cement, potential discharge of treated deck drainage and logistical support activities. Unplanned activities could include spill of chemicals or oil, dropping of supply materials or equipment, and collision of vessels.
6. The total area of benthic habitat disturbed or temporarily occupied by drilling activities at four wells is 52,000m<sup>2</sup>. Existing occupation of benthic habitat within the Tui field is approximately 11,000 m<sup>2</sup> (0.002% of the Tui field (467.2km<sup>2</sup>)), of which the proposed new four installations form an additional 0.01% of the benthic habitat within the Tui field. I consider the total occupation of the benthic habitat within the Tui field (0.012%) to be a very low proportion. The current proposal also has a negligible effect on the

cumulative occupation and disturbance of similar depth benthic habitat within the South Taranaki Bight (increase from 0.0019% to 0.0023%).

7. Following disturbance and removal of temporary structures, benthic habitats will, in the longer term (i.e. 5-10 years), be progressively recolonised and ultimately contain assemblages that are similar to the existing community. Given the natural recolonisation after disturbance and removal of structures and other equipment, I do not consider that any mitigation of the moderate level of effect is necessary.
8. While coastal runoff and activities associated with gas and oil mining may affect the water quality within the AOI within localised areas and over short time scales, the primary factor influencing water quality are oceanic and local currents which provide significant and rapid dilution of discharges relating to the project.
9. Installation and removal of the anchors, chains and wires is likely to involve some disturbance of the benthic sediment, some of which will become temporarily re-suspended and deposited as sediment plumes settle. Given the temporary nature and small scale of likely re-suspended sediment, elevated turbidity<sup>1</sup>, deposition, vibration, and the discharge of milling fluid and cement, I consider the magnitude of effect to be negligible.
10. Dr Lane assessed the potential impact of deck drain discharges (and the potential for discharges to contain spilled hazardous substances) and concluded that the substances do not present a feasible risk to marine ecology due to lack of toxicity, the concentrations involved and the large dilution afforded by seawater and benthic sediment. It is my opinion the magnitude of effect on benthic organisms and habitats from discharges from deck drains is negligible.
11. Assessment of the unplanned activities indicates, that with appropriate controls and management in place, those activities are highly-extremely unlikely to occur. Should a large-scale oil spill occur, there could be significant adverse effects on the benthic habitat and organisms.

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<sup>1</sup> See evidence of Dr MacDiarmid.

12. Biosecurity controls, checks and permissions in order to bring a drilling rig into New Zealand will be put in place to ensure risks to benthic habitats and organisms and marine ecosystems are negligible.
13. I have reviewed the concerns raised by submitters and responded to those concerns. The submissions have not caused me to change my assessment or conclusions.
14. Based on the effects identified, I do not consider that the proposed conditions need to include any additional benthic habitat monitoring over and above that which is routinely carried out for monitoring of Production Discharges.



**SHARON BETTY DE LUCA**

**7 November 2018**