



## MEMORANDUM

File Ref: EEZ100016

**To:** Richard Johnson, Manager, EEZ Applications

**Copy To:** Siobhan Quayle, General Manager Climate, Land & Oceans  
██████████, Manager, Kaupapa Kura Taiao  
██████████, Acting Manager, EEZ Compliance  
██████████, General Counsel

**From:** ██████████, Senior Advisor, EEZ Applications

**Date:** 9 April 2018

**Subject:** Tamarind Taranaki Limited's applications for marine consent and marine discharge consent – decision on completeness under section 40 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012.

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### Purpose

1. The purpose of this memorandum is to record the reasons for my recommendation that you decide the Tamarind Taranaki Limited (Tamarind) marine consent and marine discharge consent applications is complete under section 40 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ Act).
2. This decision falls within your statutory delegation, as provided in the instrument of delegation from the Chief Executive of the EPA.<sup>1</sup>

### Recommendation

3. It is recommended that you:

a.	<b>Agree</b> that Tamarind Taranaki Limited's applications for marine consent and marine discharge consent associated with development drilling and discharges of harmful substances (EEZ100016) are determined as complete under section 40 of the EEZ Act.
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<sup>1</sup>Instrument of Delegation - Chief Executive to EPA Staff (3 November 2017):  
[http://epa/edrms/acc/1/md/edmd/2017\\_11\\_03\\_EEZ\\_Delegation\\_CE\\_to\\_staff.pdf](http://epa/edrms/acc/1/md/edmd/2017_11_03_EEZ_Delegation_CE_to_staff.pdf)

## Project Description

4. In March 2017, Tamarind purchased all of the shares of the companies Tamarind Taranaki Limited, Tamarind New Zealand Pty Limited, Stewart Petroleum Company Limited and WM Petroleum Limited, to become the sole operator in the Tui field, which lies within Petroleum Mining Permit (PMP) 38158.
5. Activities associated with the extraction and production of oil and the operation of the Floating Production Storage and Offloading (FPSO) Umuroa (FPSO Umuroa) within the Tui field are currently covered by the transitional provisions provided under section 162 of the EEZ Act which provide for certain existing petroleum mining activities to continue without a marine consent for the term of the mining permit or existing privilege.
6. On 5 January 2014, consent was granted by Maritime New Zealand (MNZ) to Tamarind for the discharge of harmful substances from the FPSO Umuroa (EEZ300006). This consent expires on 24 November 2025.
7. On 8 March 2018, Tamarind lodged application EEZ100016. This application seeks consent for restricted activities associated with the use of a semi-submersible drilling rig (herein referred to as 'drilling rig') for the side track drilling from pre-existing wellheads in the Tui field, which are not authorised under the existing mining permit, or consented under EEZ300006. The application includes section 20(2) and 20(4) restricted activities and section 20B restricted activities. These will require a marine consent and marine discharge consent under the EEZ Act.
8. The activities that Tamarind has described in its IA and for which marine consent and marine discharge consent are sought include:
  - a. Installation, operation and removal of a drilling rig, including all placement of all equipment, well drilling and commissioning activities, and rig removal;
  - b. Logistic support activities<sup>2</sup>;
  - c. Environmental monitoring activities; and
  - d. Discharge of harmful substances from the drilling rig deck drains into the sea.
9. Tamarind does not propose to carry out any restricted activities associated with decommissioning of a structure, pipeline or submarine cable.

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<sup>2</sup> Logistic support activities refers to the support vessels required throughout the drilling campaign.

## Completeness Assessment

### Legislative context

10. Under section 38 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ Act) any person may apply to the EPA for a marine consent or marine discharge consent to undertake a discretionary activity. The application must be made in the prescribed form, fully describe the proposal and include an impact assessment (IA) prepared in accordance with section 39 of the EEZ Act and requirements prescribed in regulations. If the application relates to an activity referred to in section 20(2)(a), (b), or (c), it must include a description in general terms of how and when it is proposed that the structure, submarine pipeline, or submarine cable will be dealt with at the end of its life.
11. Regulation 35 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Discharges and Dumping) Regulations 2015 (the D&D Regs) requires the IA included in the application for marine discharge consent to describe the effects of the activity on human health.
12. The EPA must return an application for a marine consent and/or a marine discharge consent as incomplete under section 43 of the EEZ Act if it considers that the application does not comply with section 38 (including because the impact assessment does not comply with section 39 or any requirements prescribed in regulations).
13. If the EPA is satisfied that an application for a marine consent for a publicly notifiable section 20 marine consent is complete, it must:
  - a. Immediately notify the Minister for the Environment in writing that an application has been made (to allow a board of inquiry (BOI) to be appointed under section 52); and
  - b. Within 20 working days, give public notice of the application and serve a copy of the notice on those persons and groups listed under section 46(1)(b)(ii) of the EEZ Act.

## Restricted Activities

### Section 20 restricted activities

14. Section 20 of the EEZ Act outlines restrictions on activities that can be undertaken in the exclusive economic zone (EEZ) and in or on the continental shelf. No person may undertake an activity described in section 20 unless the activity is a permitted activity, is authorised by a marine consent, or is authorised by sections 21, 22, or 23 of the EEZ Act. The activities identified by Tamarind in its application that are restricted under section 20 are outlined in Appendix 1.

### Section 20B restricted activities

15. Section 20B of the EEZ Act outlines restrictions on discharges of harmful substances into the sea or into or onto the seabed of the EEZ from structures. No person may discharge a harmful substance from a structure or from a submarine pipeline into the sea or onto the seabed of the EEZ unless the discharge is a permitted activity, is authorised by a marine consent or is authorised by sections 21, 22, or 23 of the EEZ Act.

16. Tamarind's application is for the discharge of harmful substances from offshore processing drainage from a drilling rig brought into the Area of Interest (AOI)<sup>3</sup>. This is restricted under section 20B of the EEZ Act. The activities identified are outlined in Appendix 1.

## EPA assessment of marine consent and marine discharge consent applications

16. I have reviewed Tamarind's IA under section 40 of the Act to determine whether it complies with section 38 of the EEZ Act.

### Prescribed Form

17. The application for marine consent has been made in the prescribed form.

18. The application for marine discharge consent has been made in the prescribed form.

### Fully describe the proposal

19. The application forms and IA (including its supporting technical reports in the appendices) fully describe Tamarind's proposal to undertake side track drilling of pre-existing wells using a semi-submersible rig.

20. Tamarind's proposal to discharge harmful substances from offshore processing drainage aboard a semi-submersible rig is also fully described by the application forms and IA (including its supporting technical reports in the appendices).

### Impact Assessment

21. The IA addresses the matters listed in section 39 of the EEZ Act and regulation 35 of the D&D Regs.

### Section 39(1)(a) EEZ Act: Describe the activity for which consent is sought

22. Section 3.1 of the IA describes the activities for which consent is sought.

23. The activities restricted under section 20 for which marine consent is sought are listed in Table 2.1 of the IA. These relate to three separately defined activities associated with the development drilling:

- a. Installation, operation and removal of a drilling rig, including all placement of all equipment, well drilling and commissioning activities (section 3.2 of the IA);
- b. Logistic support activities (section 3.4 of the IA); and
- c. Environmental monitoring activities (section 3.5 of the IA).

24. The discharges of harmful substances restricted under section 20B of the EEZ Act for which marine discharge consent is sought are outlined in section 2.2.2.

25. The methods of the proposed discharge for which consent is sought are discussed in section 3.6.1 of the IA, and the nature of the proposed discharges are discussed in section 3.6.2 and Table 3.3.

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<sup>3</sup> The Area of Interest is defined as the boundaries of Petroleum Mining Permit 38158.

26. The deck drain system will have separate hazardous and non-hazardous drains.
27. The non-hazardous drains will discharge directly through an open drain system to the ocean and hazardous drains will discharge via a closed drain system. This system is depicted in Figure 3.7 of the IA. A holding tank will separate water and harmful substances. After being treated, water will discharge to sea and harmful substances will be contained for onshore disposal.
28. Hazardous materials will be stored in below-deck stores or in specifically designed and independently banded areas and stores on the surface deck. Temporary drain plugs will also be used during certain activities to ensure any accidental spills are contained.
29. Table 3.3, section 3.6.2 of the IA outlines the likely classes of harmful substances to be used aboard the drilling rig. No information on the exact constituents of the harmful substances to be used is provided. This limits the assessment of ecotoxic effects at this point, but is not a completeness matter, as the manner of effects associated with the discharge of harmful substances have been identified.
30. A separate non-notified marine discharge consent will be lodged by Tamarind which will confirm specific details on the constituents of the harmful substances to be used during development drilling should consent be granted for the current applications. In section 2.2.2 of the IA Tamarind states its intention to lodge the subsequent non-notified discharge consent once details of the drilling programme and drilling rig selection have been further developed
31. It is considered that the information provided in the IA describes the nature of the discharges in a manner that corresponds with the scale and significance that the likely effects of the discharges may have on the environment. However, the BOI may wish to seek further clarification on the constituents of any discharges, the volumes to be discharged and the manner of their use.
32. I consider that the description of the activities for which marine consent and marine discharge consent are sought (section 39(1)(a) EEZ Act) is in:
  - a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
  - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

**Section 39(1)(b) EEZ Act: Describe the current state of the area where it is proposed that the activity will be undertaken and the environment surrounding the area**

33. The proposed activities will take place on the South Taranaki Bight offshore Taranaki, approximately 90 kilometres West of New Plymouth.
34. Sections 1, 2 and 4 of the IA describe the current state of the area where the proposed activities will be undertaken and the surrounding environment with respect to:
  - a. the physical environment (climate, oceanography, sediment and seabed characteristics);

- b. the biological environment (benthic, primary production, fish, mammals, reptiles and seabirds); and
  - c. the cultural and socio-economic setting.
35. There is a lack of baseline information regarding ambient background noise levels, and wave period and height potentials within the AOI. These are important details necessary to characterise the existing environment in the AOI and will be subject to a further information request.
36. There is no information provided on the existing human health trends and statistics within the Taranaki region. Given that the definition of 'Impact' used in Tamarind's assessment methodologies refers to a deviation from baseline conditions, some baseline information should be provided. This has also been included in a further information request.
37. The information provided on existing cultural interests is sparse, partly due to the lack of feedback from the relevant Iwi and hapū on the IA. The BOI may decide to request further information on this matter from Tamarind.
38. I consider that the description of the current state of the area where Tamarind proposes to undertake the activity and the environment surrounding the area (section 39(1)(b) EEZ Act) is in:
- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
  - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

**Section 39(1)(c) EEZ Act: Identify the persons whose existing interests are likely to be adversely affected by the activity**

39. In section 1.3.1 of the IA, Tamarind identifies navigation by marine vessels and fisheries interests as the two lawfully established activities that may be adversely affected by the planned activities in the AOI.
40. The kaitiaki role of Te Kahui o Taranaki Trust and Ngati Tara hapū as tangata whenua of the rohe (area) where the Tui Field is located has also been noted in the IA.
41. A list of existing interests that may be adversely affected by unplanned events are described in generic terms and are provided in section 5.2.2 of the IA and are included below:
- a. Tourism;
  - b. Aquaculture;
  - c. Recreational fishing;
  - d. Diving;
  - e. Recreational boating;
  - f. Coastal recreation;

- g. Coastal tourism; and
- h. Coastal infrastructure and services.

42. I consider that Tamarind has made a reasonable effort (section 39(4)) to identify existing interests likely to be adversely affected by the activity (section 39(1)(c) EEZ Act) and that identification is in:
- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
  - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

**Section 39(1)(d) EEZ Act: Identify the effects of the activity on the environment and existing interests (including cumulative effects and effects that may occur in New Zealand or in the sea above or beyond the continental shelf beyond the outer limits of the EEZ)**

43. The key environmental effects potentially arising from the activities described in paragraphs 23 and 24 above are detailed in sections 6, 7 and 8 of the IA. The identified effects associated with the planned activities relate to:
- a. The disturbance and damage of benthic communities as a result of activities associated with the anchoring and removal of the drilling rig and disposal of drill cuttings.
  - b. Underwater noise and vibration effects on marine mammals and fish associated with side track drilling and the dynamic positioning systems of the drilling rig and support vessels.
  - c. The effects of turbidity on fish and plankton as a result of sediment resuspension during ROV operations, drilling rig anchoring and removal and drill cutting disposal.
  - d. Artificial lighting effects on birds from 'top-side' lighting of the drilling rig and on fish from subsea lighting associated with ROV works on the seabed.
44. I have noted that there are environmental effects highlighted within the IA that are not addressed above. This is due to their negligible scale relative to the more pertinent effects.
45. Tamarind has developed a qualitative risk-based matrix to determine the magnitude of effects on the environment and existing interests. Tamarind has provided mitigation measures for effects with a magnitude characterised as small, medium or large.
46. The approach for assessing environmental effects used by Tamarind treats elements of the environment as generic groups and does not take into account varying responses within these groups. The effect assessment and magnitude calculation is based on a qualitative approach, with very little reference to examples from previous studies or literature to support the conclusions reached in the IA.
47. Table 6.1 of the IA describes the different aspects of the planned activities that have the potential to interact with the environment and existing interests in the AOI. Table 6.2 of the IA outlines the potential interactions between the aspects of the planned activities and receptors.

48. Tamarind has identified in section 6.4 of the IA that the deposition effects associated with drilling rig anchoring, well commissioning, abandonment and drill cuttings disposal will moderately effect benthic communities. However, significant uncertainty exists around the cumulative physical disturbance footprint likely to be imposed on benthic communities. This is due to the uncertainty around the number of anchors to be used for each drilling rig placement. The number of anchors to be used will be contingent on drilling rig specifications and prevailing weather conditions during the drilling campaign. I note that additional management and mitigation measures to those suggested by Tamarind may be required to effectively manage this uncertainty. The BOI may wish to seek further information from Tamarind on the number of anticipated placements and anchors used during the drilling campaign.
49. Results of drill cuttings disposal modelling are presented in section 3.2.5 in a way that creates uncertainty around the exact extent of drill cutting deposition and thickness and subsequent effects on benthic communities. This will be subject to a further information request.
50. In section 6.2 of the IA it is predicted that underwater noise and vibrations associated with the side track drilling and the dynamic positioning systems of the rig and support vessels may moderately affect marine mammals in the AOI. The qualitative risk assessment methods used in the IA found fish to be less affected by underwater noise effects compared to marine mammals.
51. Section 6.3 of the IA states that the turbidity levels created by the anchoring of the rig, environmental monitoring and ROV operations are considered to affect fish and plankton in the AOI in a similar manner. Turbidity levels are predicted to effect populations of fish and plankton at local scales. These potential effects are not expected to extend beyond the borders of the AOI.
52. Artificial lighting is predicted to potentially interact with seabirds, fish and plankton. Lighting of the topside of the drilling rig is expected to be the principal effect on bird populations. Sub-sea lighting associated with ROV operations will affect fish and planktonic populations periodically during the drilling campaign.
53. Section 8.1 of the IA discusses the effects of the deck drain discharges. Tamarind has identified marine mammals as having a medium sensitivity to localised discharges. This level of sensitivity was assigned due to the intrinsic value associated with these fauna. Mitigation measures are discussed in section 8.2 of the IA.
54. The effects of planned activities on existing interests of navigation by marine vessels and fisheries interests are assessed in section 6 of the IA. Due to the temporary nature of the activities and exclusion zones around existing infrastructure, both navigation by marine vessels and fisheries interests are not expected to be significantly affected.
55. In section 1.3.1 Tamarind states that it will not interact with any other oil and gas operators in the EEZ during the drilling campaigns and as such, other operators are not considered to be existing interests (that are likely to be adversely affected by Tamarind's activities for the purposes of section 39(1)(c)).
56. Table 6.2, section 6 of the IA, indicates that the planned activities have the potential to significantly interact with Maori cultural values. Tamarind has consulted with Te Kahui o Taranaki Trust and Ngati Tara and has provided them with a copy of the IA to enable them to provide comment and to identify if any further

information was considered to be missing from the application. Te Kahui and Ngati Tara were to prepare a Cultural Values Assessment report on which section 9 of the IA would be based. Although Te Kahui o Taranaki Trust and Ngāti Tara Hapū were invited to provide comments, no written feedback was received.

57. Section 9 of the IA assesses the elements of Maori cultural values that are likely to be effected by the planned activities. Mitigation and management measurements are outlined in section 9 and have also been provided to Te Kahui o Taranaki Trust and Ngati Tara for comment.
58. Unplanned events associated with the activities could occur and are addressed in section 7 of the IA. Unplanned events include spills off the deck, dropping of objects overboard, vessel collisions or sinking, a spill of marine diesel oil and loss of well-control (45 days is used as a worst feasible case scenario).
59. Should any of the unplanned events addressed in section 7 occur, elements of the environment and existing interests that are likely to be affected are:
- Human health;
  - Water quality;
  - Marine offshore, coastal and shoreline ecosystems;
  - Marine fauna;
  - Coastal recreation activities;
  - Tourism;
  - Fisheries interests; and
  - Property.
60. Cumulative effects have been assessed in section 10 of the IA in relation to the following;
- Underwater noise and vibration;
  - Turbidity;
  - Deposition and seabed disturbance;
  - Physical disturbance;
  - Artificial light; and
  - Deck drain discharges.
61. While there are some gaps in the information pertaining to the effects of some aspects of the planned activities, I consider that the information provided regarding the effects of the activity on the environment and existing interests (including cumulative effects and effects that may occur in New Zealand or in the sea above or beyond the continental shelf beyond the outer limits of the EEZ) meets the requirements of making a reasonable effort (section 39(4)) to identify the effects of the activity (section 39(1)(d) EEZ Act), and the information is in:
- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests; (section 39(3)(a) EEZ Act); and

- b. sufficient detail to enable the EPA and persons whose existing interests are or may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

**Section 39(1)(e) EEZ Act: Identify the effects of the activity on the biological diversity and integrity of marine species, ecosystems, and processes**

62. There are no explicit references made to measures of biodiversity for the biological elements within the main IA document. Sections 6, 7 and 8 of the IA provide an overview on all potential effects.
63. The use of generic groups by Tamarind in the IA to represent the biological elements of the environment results in broad, generalised conclusions being reached. However, Annex D contains a collation of data gathered as part of benthic monitoring studies from within the AOI. Parts of this study deal explicitly with biodiversity distributions and their interaction with existing infrastructure and processes.
64. Although there are limitations to effective assessment of effects by the use of generic grouping of biological elements, the inclusion of the Annex D study bolsters the information given for benthic communities, which are the biological element in which measurable effects of the activities are most likely to be seen.
65. While there is a small amount of information on biodiversity and ecosystem functioning within the AOI, I consider that the information provided identifies the effects of the activity on the biological diversity and integrity of marine species, ecosystems, and processes and meets the requirements of making a reasonable effort (section 39(4)) to identify the effects of the activity (section 39(3) EEZ Act), and the information is in:
  - a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests; (section 39(3)(a) EEZ Act); and
  - b. sufficient detail to enable the EPA and persons whose existing interests are or may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

**Section 39(1)(f) EEZ Act: Identify the effects of the activity on rare and vulnerable ecosystems and habitats of threatened species**

66. Section 4 of the IA outlines that there are no rare or vulnerable ecosystems existing in the vicinity of the AOI. Similarly there is no overlap between the AOI and protected or managed areas.
67. Tamarind has identified that it is probable that transient populations of threatened fish, bird and marine mammal species may enter the AOI periodically. The IA considers that in these instances the most likely effect on these threatened species is that of degraded water quality. Water quality is not expected to be significantly affected, and that when hazardous substances enter the marine environment, they are predicted to disperse quickly within a highly localised area.
68. I consider that Tamarind meets the requirements of making a reasonable effort (section 39(4)) to provide the information required by section 39(1)(f) of the EEZ Act in:

- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
- b. sufficient detail to enable the EPA and persons whose existing interests are or may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

**Section 39(1)(g) EEZ Act: Describe any consultation undertaken with persons described in paragraph (c) and specify those who have given written approval to the activity**

69. Section 1.4 of the IA describes the stakeholder engagement process. Annex B provides examples of the communications made between stakeholders and Tamarind. No persons have provided written approval for the activity.

70. During the preparation of these marine consent and marine discharge consent applications and supporting IA Tamarind initiated consultation with a number of local and national groups identified as having existing interests. A full record of consultation activities for the Tui Field is included in Annex B of the IA. Below is a summary of persons with existing interests that were consulted in relation to the proposed activities:

- Iwi and Hapū;
- Other private operators in the region (including shipping and tourism);

71. Marine management agencies were also consulted in relation to the proposed activities. A full record of consultation activities for the Tui Field is included in Annex B of the IA.

72. It is noted that Tamarind's consultation has extended to a greater number of persons than those identified in paragraph 41 above.

73. I consider that Tamarind has made a reasonable effort to consult with affected and interested persons and I consider the description of any consultation undertaken with persons whose existing interests are likely to be adversely affected by the activity (section 39(1)(g) EEZ Act) is in:

- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
- b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

**Section 39(1)(h) EEZ Act: Include copies of any written approvals to the activity**

74. No written approvals have been obtained or included in the IA.

**Section 39(1)(i) EEZ Act: Specify any possible alternative locations for, or methods for undertaking, the activity that may avoid, remedy, or mitigate any adverse effects**

75. Section 1.5 of the IA addresses possible alternative locations and methodologies to the proposal.

76. Alternative methods to what is proposed in the application include the potential use of a jack-up rig or monohulled intervention vessels. However, these are not deemed optimal operational alternatives by Tamarind.
77. The location of the planned activities is constrained by the fixed position of the pre-existing sub-sea infrastructure of the Tui Field, and so alternative locations are not considered.
78. Tamarind state that effect mitigation and management measures are inherent in the logistical design of the planned activities.
79. Given the fixed location of the pre-existing infrastructure in the Tui field, I consider the information provided on possible alternative locations, or methods for undertaking the activity that would avoid, remedy or mitigate the adverse effects (section 39(1)(i) EEZ Act) is in:
- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
  - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

**Section 39(1)(j) EEZ Act: Specify the measures that could be taken to avoid, remedy, or mitigate the adverse effects identified (including measures that the applicant intends to take)**

80. The description of mitigation measures the applicant intends to carry out in response to the planned activities and discharges that are likely to interact with any existing interests and the environment are described in section 6 and 8 of the IA outline of proposed environmental management actions has been tabulated in Table 11.1.
81. The effects of underwater noise and vibration will primarily be reduced by Tamarind through its decision to side track, as opposed to drilling new wells. The choice of a modern drilling rig will also improve efficiency and reduce drilling duration.
82. The effects associated with increased turbidity are proposed to be primarily mitigated through the use of:
- a. A semi-submersible drilling rig instead of a jack-up rig;
  - b. The use of a drilling rig with a dynamic positioning system; and
  - c. The vertical deployment and removal of drilling rig anchors.
83. These mitigation measures could potentially be offset if weather conditions require twelve anchors to be used for each placement of the drilling rig, as the potential for anchor drag and rigging movement will increase in bad weather conditions.
84. Artificial light effects will be mitigated through the shielding of light sources where possible, and the use of underwater light sources for as short a period as practicable during operations.

85. Marine mammal collision risks are to be mitigated by the slow transit speeds of support vessels and the presence of marine mammal observers.
86. Potential cultural effects were to be identified by Te Kahui o Taranaki Trust and Ngāti Tara. No cultural IA was provided to Tamarind. Tamarind lists the cultural values it understands to be of specific concern to Iwi and hapū in section 9 of the IA. A series of cultural value effect management and mitigation measures are proposed. These are presented in section 9.1 of the IA.
87. A number of mitigation measures for the effects of hazardous deck drain discharges are listed in section 8.2 of the IA. A principal measure is the consideration and use of chemicals with ecotoxicity and toxicity levels that are as low as reasonably practicable.
88. I note that Tamarind outline more mitigation measures for aspects of planned activity effects than listed above. Those included in my assessment of the IA are the primary or most likely effects that may require mitigation measures.
89. Section 39(5) of the EEZ Act requires the measures that must be specified under section 39(1)(j) include any measure required by another marine management regime, and any measures required by Health and Safety at Work Act 2015. The IA specifies the measures required by the following marine management regimes that may avoid, remedy, or mitigate adverse effects of the activities on the environment or existing interests:
- Health and Safety at Work Act 2015
  - Biosecurity Act 1993;
  - Continental Shelf Act 1964;
  - Crown Minerals Act 1991;
  - Maritime Transport Act 1994; and
  - Submarine Cables and Pipelines Protection Act 1996;
  - Fisheries Act 1996;
  - Marine Mammals Protection Act 1978;
  - Marine Reserves Act 1971; and
  - Wildlife Act 1953.
90. I note that Tamarind has provided draft proposed conditions for the consideration of the BOI in advance of the marine consent hearing.
91. I consider that Tamarind has provided information required by section 39(1)(j) and section 39(5) of the EEZ Act in:
- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
  - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

### **Section 39(2)(a) EEZ Act: Description of effects on human health**

92. Section 8.1.8 of the IA discusses the sensitivity of human health to localised discharges of harmful substances. The only effect on human health resulting from the discharge of harmful substances from offshore processing drainage considered within the IA is that of illness through consumption of contaminated species caught within the AOI.
93. The distance of the AOI from shore, high energy of the AOI, large dilution factors associated with the offshore environment, and exclusion zones around existing infrastructure are noted as being likely to act as a buffer against any potential effects on human health. The IA considers the risks posed to human health by the planned activities to be low.
94. I consider that Tamarind has provided information required by section 39(2)(a) of the EEZ Act in:
- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
  - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

### **Section 39(2)(c) EEZ Act: Description of effects on human health that may arise from effects of the activity on the environment**

95. The IA concludes in section 8.1.8 that effects on human health will only occur if contaminants produced by offshore processing drainage enter into the food chain and bioaccumulate at levels high enough to cause illness when consumed by humans.
96. The distance of the AOI from shore, high energy of the AOI, large dilution factors associated with the offshore environment, and exclusion zones around existing infrastructure are noted as being likely to act as a buffer against any potential effects on human health. The IA considers the risks posed to human health by the planned activities to be low.
97. I consider that Tamarind has provided information required by section 39(2)(c) of the EEZ Act in:
- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
  - b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

### **Section 38(2)(d) EEZ Act: Description in general terms of how and when it is proposed that the structure, submarine pipeline, or submarine cable will be dealt with at end of life**

98. Section 3.7 of the IA deals with the end-of-life treatment of all structures placed on the seafloor during the planned activities. All structures will be temporarily placed on the seabed and subsequently removed from the area surrounding each wellhead at the end of drilling activity.

99. The IA specifies that materials that will not be removed at the end of drilling at each wellhead are those associated with the plugging and abandonment of the lower sections of the wells to be side tracked. The IA notes that plugging and abandonment of the lower sections of wells will be done in a manner that meets internationally accepted guidelines and which is compliant with both government regulators and the third party well examination requirements in New Zealand as currently defined in the Health and Safety at Work (Petroleum Exploration and Extraction) Regulations 2016.

### **Section 38(3): Activity undertaken in connection with decommissioning**

100. Tamarind does not propose to undertake any activity connected with the decommissioning of an offshore installation used in connection with petroleum production, or a structure, submarine pipeline, or submarine cable associated with such an installation. As such, information listed under section 38(3) is not required to determine completeness for these applications.

## Conclusion

101. I have assessed the IA against all the criteria in section 39 of the EEZ Act regulation 35 of the D&D Regs. I conclude that the Tamarind Taranaki Limited applications for marine consent and marine discharge consent, referenced as EEZ100016 comply with section 38 of the EEZ Act.

102. I observe that for all matters outlined in section 39 of the EEZ Act and regulation 35 of the D&D Regs matters, the application contains information that is in;

- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests (section 39(3)(a) EEZ Act); and
- b. sufficient detail to enable the EPA and persons whose existing interest may be affected to understand the nature of the activity and its effects on the environment and existing interests (section 39(3)(b) EEZ Act).

## Recommendation

103. I recommend that Tamarind's applications for marine consent and marine discharge consent, including its accompanying IA, for various restricted activities associated with the installation and operation of a semi-submersible drilling rig, side track drilling of pre-existing wellheads, and to discharge harmful substances as offshore processing drainage from the deck drains of its drilling rig, complies with section

38 of the EEZ Act and therefore should be determined as complete under section 40 of the EEZ Act, for the reasons set out in this memo.



9 April 2018

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**Dr Jack O'Carroll**

**Date**

**Senior Advisor**

**EEZ Applications**

## Decision

104. That you:

a. <b>Agree</b> that Tamarind Taranaki Limited's applications for marine consent and marine discharge consent associated with development drilling and discharges of harmful substances (EEZ100016) are determined as complete under section 40 of the EEZ Act for the reasons set out in this document.	<input checked="" type="radio"/> Yes <input type="radio"/> No
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9 April 2018

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**Richard Johnson**

**Date**

**Manager, EEZ Applications**

**Climate, Land & Oceans**

Appendix 1: Activities restricted under section 20 and 20B of the EEZ Act for which consent is sought:

Section 20(2) Restricted Activity	Applicable Activity
(a) the construction, placement, alteration, extension, removal, or demolition of a structure on or under the seabed:	<ul style="list-style-type: none"> <li>• Alteration of structures (wellheads and wells) by temporary removal and replacement of production tubulars in wells, drilling through existing casings, attachment and subsequent removal of blow-out preventers to wellheads.</li> <li>• Construction, placement, alteration and removal on and under the seabed of structures associated with the installation and removal of a drilling rig including anchors, chains and wires, re-entry and abandonment of existing wells, and side-track drilling and well completions</li> <li>• Construction, placement, alteration and removal on and under the seabed of structures associated with environmental monitoring.</li> </ul>
(b) the construction, placement, alteration, extension, removal, or demolition of a submarine pipeline on or under the seabed	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
(ba) the abandonment of a submarine pipeline that is on or under the seabed	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
(c) the placement, alteration, extension, or removal of a submarine cable on or from the seabed	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
(d) the removal of non-living natural	<ul style="list-style-type: none"> <li>• Removal of non-living natural material from the seabed and subsoil (rock cuttings) associated with drilling the side-track development wells from existing wells.</li> </ul>

material from the seabed or subsoil	<ul style="list-style-type: none"> <li>Removal of non-living natural material from the seabed associated with environmental monitoring.</li> </ul>
(e) the disturbance of the seabed or subsoil in a manner that is likely to have an adverse effect on the seabed or subsoil	<ul style="list-style-type: none"> <li>Disturbance of the seabed and subsoil associated with ROV works, and the installation and removal of a drilling rig including anchors, chains and wires.</li> <li>Disturbance of the seabed and subsoil associated with the deposit of drill cuttings, cementing products, metal fragments, elastomer and sediment in, on or under the seabed associated with drilling.</li> <li>Disturbance of the seabed associated with environmental monitoring, including placement and removal of monitoring equipment.</li> </ul>
(f) the deposit of anything or organism in, on or under the seabed	<ul style="list-style-type: none"> <li>Deposit in, or under the seabed of all structures referred to in respect of 20(2)(a) above.</li> <li>Deposit of drill cuttings, drilling muds, cementing products, metal fragments, and elastomer in, on or under the seabed associated with well drilling.</li> <li>Deposition of sediments from the settling of anchors, chains and wires placement and removal.</li> </ul>
(g) the destruction, damage, or disturbance of the seabed or subsoil in a manner that is likely to have an adverse effect on marine species or their habitat	<ul style="list-style-type: none"> <li>Destruction, damage and disturbance of the seabed and subsoil associated with the installation and removal of a drilling rig.</li> <li>Damage and disturbance of the seabed and subsoil associated with the deposit of drill cuttings, cementing products, metal fragments, and elastomer in, on and under the seabed associated with well drilling.</li> <li>Damage and disturbance of the seabed and subsoil associated with environmental monitoring, including placement and removal of monitoring equipment.</li> </ul>
<b>Section 20(4) Restricted Activity</b>	<b>Applicable Activity</b>
(a) the construction, mooring or anchoring long-term, placement, alteration, extension, removal, or demolition of a	<ul style="list-style-type: none"> <li>Construction, placement, alteration and removal of structures or part of a structure, including anchors, chains and wires, associated with installation, operation and removal of a drilling rig, and placement of structures (blow-out preventers) on wellheads.</li> <li>Construction, placement, alteration and removal of structures or part of a structure associated with environmental monitoring.</li> </ul>

structure, part of a structure, or a ship used in connection with a structure	
(b) the causing of vibrations (other than vibrations caused by the propulsion of a ship) in a manner that is likely to have an adverse effect on marine life	<ul style="list-style-type: none"> <li>• Vibrations associated with installation operation and removal of a drilling rig, including placement and retrieval of anchors, dynamic positioning and well drilling.</li> </ul>
(c) the causing of an explosion	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>Section 20B Restricted Activity</b>	<b>Applicable Activity</b>
(1) discharges of harmful substances from structures and submarine pipelines	<ul style="list-style-type: none"> <li>• The discharge of harmful substances for offshore processing drainage from the deck of a drilling rig</li> </ul>