

**BEFORE THE EPA
CHATHAM ROCK PHOSPHATE MARINE CONSENT APPLICATION**

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

AND

IN THE MATTER of a decision-making committee appointed to consider a
marine consent application made by Chatham Rock
Phosphate Limited to undertake rock phosphate
extraction on the Chatham Rise

OPENING SUBMISSIONS FOR CHATHAM ROCK PHOSPHATE LIMITED

Dated: 25 September 2014

 **Simpson Grierson**
Barristers & Solicitors

J G A Winchester / H P Harwood
Telephone: +64-4-499 4599
Facsimile: +64-4-472 6986
Email: james.winchester@simpsongrierson.com
DX SX11174
P O Box 2402
Wellington

MAY IT PLEASE THE COMMITTEE

Introduction and summary

1. Phosphate is the naturally occurring form of the element phosphorous, found in many phosphate minerals. It is as essential to life as water, oxygen and carbon. It cannot be manufactured and there is no synthetic substitute to replace it.
2. New Zealand's economy is heavily based on its agricultural production capabilities. New Zealand requires phosphate for the manufacture of various fertilisers such as superphosphate, which is necessary to support the country's agricultural industry due to the relatively infertile nature of New Zealand's soils. New Zealand has minor terrestrial sources of phosphate but these cannot meet the market demand for fertiliser.
3. At present, all of the raw product for New Zealand's fertiliser needs is imported, mostly from North African countries such as Morocco, Western Sahara, and Tunisia. The area where the rock phosphate is extracted from is subject to political instability in terms of claims to ownership of the resource. In the context of New Zealand's ongoing needs for a secure supply of phosphate for its agricultural sector and the geopolitical risks associated with existing sources, the availability of a high quality, low-cadmium, local source of rock phosphate on the Chatham Rise makes this a strategic resource of national significance. The project will result in a number of benefits to New Zealand.
4. Indeed, its importance to New Zealand is highlighted by the fact that in 2013, phosphate rock moved onto the European Union critical material list.¹ The EU report noted that there is a high supply risk due to concentrated production from three main countries. The EU concluded that the economic importance of a secure supply was high, exceeding the criticality threshold, and noted that there is no recycled input and substitution is impossible in its main application as an input to fertilisers and other chemicals. Clearly if the issue is critical to the EU, it is even

1 See link at http://ec.europa.eu/enterprise/policies/raw-materials/files/docs/crm-report-on-critical-raw-materials_en.pdf

more important to New Zealand given the agricultural foundation of our economy.

5. While some parties have suggested that the Chatham Rock Phosphate (**CRP**) proposal is novel, in reality all that is novel about the proposal is the depth of operation. The dredging technology used is widely used around the world and is well understood. In addition, there are other similar seabed mining operations proposed in various places around the world, such as the Don Diego project offshore from the coast of Mexico which has a number of similarities to the CRP project and proposed phosphate project off Namibia.
6. CRP's dredging process is one of the most environmentally benign forms of mining practised anywhere in the world. No overburden removal is required and no chemicals are introduced to the environment. Damage is minimal and is restricted almost entirely to the mined area. Potentially more harmful forms of seabed dredging are practised around the world every day for clearing and deepening harbours, repairing beaches, and mining aggregates.
7. While assessing CRP's environmental impact is important, it is only part of the equation as the costs of the impact need to be put into context. Understanding the environmental costs of using an alternative supply of phosphate is equally important. Because alternative supplies necessitate the removal of vast quantities of overburden, contain much higher levels of cadmium, and are shipped from half way around the world creating a large carbon footprint, the potential for environmental damage is much greater from alternative sources than from CRP's project. New Zealand's security of supply is also an important factor.
8. CRP's project and this application is founded upon a huge amount of scientific information and analysis. More recent work has built on the substantial historical information that has been gathered in relation to what was already the best studied and best known part of the EEZ. It is submitted that suggestions that there is inadequate information about the Chatham Rise environment and the impacts of this proposal are at odds with the information that is before the decision-making committee (**DMC**).

There is no barrier to granting of a marine consent based on uncertainty or inadequacy of information.

9. When the effects of the CRP proposal are assessed in light of the existing environment and put in their proper context, it is apparent that most of the effects or risks are not significant. Regrettably, a number of the witnesses for submitters and indeed the DMC appear to undertake their assessments without giving due regard to the context, with the result that the issues and risks that they identify are overstated.

10. In terms of the key issues before the DMC, it is submitted that the position can be summarised as follows:
 - (a) while the wider Chatham Rise is a very important fishery in the EEZ, the proposed mining area is not a significant area for fishing, nor for spawning of major commercial species;
 - (b) there is consensus amongst the expert witnesses that, even adopting worst-case and very conservative assumptions, the risks and effects from CRP's proposal on fish and fishing are low, such that the fishing industry will not be materially adversely affected (either in real terms or in terms of market perception);
 - (c) the modelling of the sediment plume is conservative and effects from the return of tailings to the seabed will be relatively restricted, with the area of greatest impact on benthic organisms being almost entirely within the mining blocks;
 - (d) other impacts from the sediment plume (e.g. on fish, fish eggs and larvae) will not result in material adverse effects for a wider area and suspended solids levels in the water will quickly return to normal between mining cycles;
 - (e) as a consequence, other flow-on effects or concerns should not arise and are unlikely to be substantiated;
 - (f) risks to marine mammals and seabirds from a single vessel and the mining operation are low and can be appropriately managed; and

(g) while there will be significant and irreversible effects on the benthic environment where mining occurs, these effects are unlikely to have flow-on consequences for the food-web of the Chatham Rise because:

- (i) there will be no effects on primary productivity in the Chatham Rise ecosystem;
- (ii) the annual area mined is small a fraction of the Chatham Rise and effects; and
- (iii) corals and encrusting invertebrates have a low trophic importance.

11. In essence, it is submitted that the key environmental issue is the significance of the impacts on the benthic habitat and in particular the stony corals present on the crest of the Chatham Rise. These corals are also present throughout the EEZ. While the impact on these corals in the areas where mining will occur will be permanent and significant, meaningful mitigation is proposed:

- (a) mining exclusion areas which cover 19% of the marine consent area have been volunteered, based on identification of sensitive and important seabed features and benthic communities, which should ensure that important and representative areas are not adversely impacted;
- (b) best endeavours to establish permanent legal or statutory protection of these areas is proposed; and
- (c) trials to create areas of hard substrate to enable recolonisation, including cold water stony corals and other species, will take place.

12. As far as the issue of Benthic Protected Areas (**BPAs**) is concerned, Parliament has already determined that their existence does not preclude CRP's proposal under the EEZ Act and, while important in terms of New Zealand's commitment to marine conservation, BPAs are based on consideration of limited values and hence fulfil a relatively narrow conservation function. There are other, more effective means of defining conservation areas such as through spatial planning exercises which use

the Zonation tool employed by CRP. The role of BPAs and future marine conservation/protection exercises involve wider policy issues, and it is submitted that the DMC should be cautious about making judgment calls about such issues in the context of the present consent application. It is worth noting that this is not the only example of an overlap of other interests with a BPA. Applications for mineral exploration licences have been made inside the Kermadec BPA, and the Antipodes BPA includes areas rich in manganese nodules.

13. It is submitted that the issue confronting the DMC is whether the adverse impacts and risks of CRP's proposal are of such significance that they should require consent to be declined, and also whether they should override the economic benefits and strategic upside (in terms of security of local supply) to New Zealand of the project being realised. Other environmental benefits that should influence the decision include reduced cadmium accumulation in agricultural soils, and potentially beneficial effects in terms of freshwater quality, particularly if the CRP resource is used as a direct application fertiliser rather than as superphosphate.
14. A detailed, thorough, and appropriate suite of conditions has been proposed by CRP to deal with risks and effects. Adaptive management is incorporated into the proposed conditions as part of a responsible approach to environmental management, rather than as an acknowledgement that it is necessary in order to enable the DMC to grant consent.² In light of the expert evidence, it is submitted that the focus of the DMC's attention for the purposes of this hearing and the determination of this application should be on the proposed conditions, to ensure that they are workable and appropriately address and reflect how, and in what respect, residual risks should be appropriately managed.

SCOPE OF APPLICATION

15. It is apparent from the submissions and evidence that there has been some uncertainty as to exactly what the application proposes. It is important that this is clarified at the outset.

² In terms of section 61(3) of the EEZ Act

16. The application for consent has a number of internal limitations which are important in defining the scope of the activities within the marine consent application. The limitations are consistent with adaptive management and arise in two ways.
17. First, at present, a marine consent to mine could only be exercised and mining could only occur in mining permit area 55549, which is an 820 km² area (**the MPA**) within the proposed marine consent area. This is the only area where CRP has the requisite approval (in the form of a mining permit) to mine phosphorite from New Zealand Petroleum and Minerals Group (**NZPaM**) under the Crown Minerals Act 1991.³ It is also the area where the most detailed and complete information exists.
18. The marine consent area also includes CRP's prospecting licence area MPL 50270, which was granted under the Continental Shelf Act 1964. CRP can undertake prospecting activities within this area, but even if it has a marine consent it needs a further mining permit(s) under the Crown Minerals Act before it could mine in this area.
19. CRP has two applications for prospecting permits.⁴ The western prospecting area is included within the marine consent application area. Mining could not occur there until CRP has obtained a mining permit. This could not happen until CRP's prospecting permit is granted and it has carried out the requisite prospecting activities described in Mr McKenzie's evidence.
20. The second limitation is within proposed conditions 6 and 16. Under these conditions, CRP is limited to mining within the MPA for at least the first five years. So even if CRP is successful in obtaining a further mining permit, mining could only extend into the broader marine consent area if the requirements of proposed condition 16 are met. By satisfying the requirements of proposed condition 16, CRP would have confirmed its ability to operate within the totality of environmental conditions agreed as set through this consent process.

³ See paragraphs 54 to 61 of Mr McKenzie's evidence.

⁴ CRP has applied for a prospecting permit in a smaller area (1,501 km²) to the west of MPL 50270, named PPA 55971. It has also applied for a prospecting permit in a larger area (4,985 km²) to the east of MPL 50270, named PPA 55967. The eastern prospecting area is no longer part of the marine consent application.

21. Consequently, the project is limited to a relatively small area for at least the first five years and possibly for the life of the project if CRP is unable to find additional commercial concentrations of phosphorite and/or obtain further mining permits. Although the scale of the mining at 30 km²/year cannot change due to the economics of building and operating the mining vessel, the activity would be confined to a discrete area in the early stages of the project. This is consistent with adaptive management as defined in section 64 of the EEZ Act.
22. CRP's business plan is based on a 15 year project within the MPA. Fifteen years of mining at 30 km²/year would equate to a total area mined of 450 km². If CRP is successful in obtaining further mining permits, and it meets the requirements of proposed condition 16 and its project is extended to the full proposed term of its consent (35 years), the total area of seabed mined would be a maximum of approximately 1,050 km². This would be about 20% of the proposed marine consent area.
23. It is also noted that a number of the statements of evidence of witnesses for submitters and the DMC suggest that they do not understand the mining method, technology, or process. It is hoped that these misunderstandings will be rectified through expert caucusing. The evidence of Mr van Raalte contains a clear description of the mining process.

Triggers for consent

24. Under section 20 of the EEZ Act, a number of activities in the EEZ are restricted unless the activity is a permitted activity or authorised by a marine consent. Ms Taylor has described the aspects of CRP's proposal that trigger the need for marine consent in paragraphs 43 to 53 of her evidence.
25. CRP is seeking that its marine consent (if granted) includes its environmental surveying and monitoring activities (including multi beam swath mapping) for the reasons set out in Ms Taylor's evidence.

PURPOSE OF EEZ ACT

26. The purpose of the EEZ Act is fundamental to your decision. It guides the interpretation and application of the EEZ Act, including the decision making sections. Given its importance, we have set out section 10 in full below (our emphasis added):

- (1) The purpose of this Act is to promote the **sustainable management of the natural resources** of the exclusive economic zone and the continental shelf.
- (2) In this Act, **sustainable management** means managing the use, development, and protection **of natural resources** in a way, or at a rate, that enables **people to provide for their economic well-being while—**
 - (a) sustaining the potential of natural resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
 - (b) safeguarding the life-supporting capacity of the environment; and
 - (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.
- (3) In order to achieve the purpose, decision-makers must—
 - (a) take into account decision-making criteria specified in relation to particular decisions; and
 - (b) apply the information principles to the development of regulations and the consideration of applications for marine consent.

27. Central to the purpose of the Act is the definition of "sustainable management". The definition envisages a balancing exercise whereby provision for economic development is balanced against environmental considerations.

28. Economic development and environmental protection are not necessarily mutually exclusive: indeed, some aspects of CRP's proposal enhance environmental protection and knowledge of New Zealand's biodiversity, which is discussed below.

29. The balancing exercise is described in the Regulatory Impact Statement (**RIS**) and the Explanatory Note to the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Bill 2011 (**Explanatory Note**). The RIS states:

The legislation would set up a duty to avoid, remedy, or mitigate adverse environmental effects of activities in the EEZ and ECS [extended continental shelf], and require decision-makers to balance environmental and economic considerations.

30. Similarly, the Explanatory Note states:

The Bill aims to achieve a balance between the protection of the environment and economic development. It also includes a general duty for adverse effects to be avoided, remedied, or mitigated. The Bill recognises that some adverse effects are avoided, remedied, or mitigated under other legislation.

31. The Supreme Court has recently considered⁵ the similar, but materially different definition of "sustainable management" in the Resource Management Act 1991 (**RMA**). The Supreme Court emphasised the balancing exercise within the RMA definition of sustainable management. It noted the definition should be read as an integrated whole and that:

the use of the word 'while' before sub-paras (a),(b) and (c) means that those paragraphs must be observed in the course of the management referred to in the opening part of the definition. That is, 'while' means 'at the same time as'.

This means that the three sub-paragraphs (a), (b) and (c) in section 5(2) of the RMA are not environmental bottom lines as such but are to be weighed in the balancing exercise. A similar approach should apply to the EEZ Act's purpose.

32. The definition of "sustainable management" in the EEZ Act is different to the equivalent definition in the RMA in an important aspect, which in turn flows through into the definition of existing interests and the mandatory considerations in sections 59 – 64 of the EEZ Act.

5 *Environmental Defence Society Inc v New Zealand King Salmon Company Ltd* [2014] NZSC 38, (2014) 17 ELRNZ 442 at [24](c).

33. The EEZ Act's definition of "sustainable management" refers to enabling "*people to provide for their **economic wellbeing***" whereas the equivalent definition in the RMA refers to enabling "*people and communities to provide for their **social, economic, and cultural wellbeing** and for their health and safety*".
34. Parliament's deliberate exclusion of social and cultural wellbeing in the EEZ Act definition indicates "sustainable management" for the purposes of the EEZ Act has a greater economic focus, and that fundamentally the EEZ Act is a resource and economic development statute. It also indicates that the focus of your decision should be on economic and environmental considerations. Social or cultural considerations may still be relevant, but it is submitted they deserve less weight.
35. Section 10(3) lists two mandatory requirements to give effect to the purpose of the Act. It is submitted that you cannot simply rely on complying with subsection (3) to give effect to the purpose of the Act. The decision-making criteria and information principles must be taken into account and applied, but do not of themselves encapsulate the Act's purpose. Instead, it is submitted that when making your decision, the decision must reflect sustainable management as defined in the EEZ Act.

INFORMATION PRINCIPLES

36. There is a considerable volume and range of information before you which will enable you to make an informed decision about the application on its merits. Some of this information is new and has been prepared specifically for this proposal. It builds upon the already extensive base of information and data that existed before this application process was initiated.
37. The sum of the information before you, including the EIA and its appendices, responses to requests for further information, and CRP's evidence (and the evidence provided by witnesses called by the DMC and submitters) is in-depth and impressive. Every question that has been asked by the EPA and DMC has been answered by CRP and, in some instances, substantial additional research and modelling has been undertaken.

- 38.** While scientists in particular will always seek more complete and detailed information, this is not always feasible or indeed necessary. In the particular circumstances of this proposal, it is submitted that any suggestion that the information does not meet the EEZ Act's definition of "Best Available Information" cannot reasonably be supported.
- 39.** The Chatham Rise is widely recognised as the best studied part of New Zealand's EEZ and the MPA is now the best studied part of the Chatham Rise.
- 40.** "Best Available Information" means:⁶
- The best information that, in the particular circumstances, is available without unreasonable cost, effort, or time.
- 41.** The individual circumstances of any application in the EEZ are a fundamental consideration in determining what "best available information" is. Activities within the EEZ inherently involve deep water and large distances offshore and hence there will always be a degree of uncertainty. Existing research is more limited than inshore parts of New Zealand, for obvious reasons. Additionally, further research is more expensive and less practical in some circumstances. In many cases, the gain in scientific knowledge will not come close to being proportionate to the time, effort and cost involved, balanced against the level of environmental risk being addressed. Consequently, what could amount to "Best Available Information" in an inshore or terrestrial setting is different to what is best available information in the EEZ.
- 42.** Use of modelling and predictions is relatively common, even in a terrestrial context. For many effects, modelling and predictions based on existing data and observations are the best and only reasonable way to assess the nature or degree of impacts, and frequently value judgments made by experts are imposed on top of the model outputs to reflect the context and environment.

⁶ EEZ Act, s 61(5).

43. For example, traffic modelling is a common feature of land use applications. This is based on a set of parameters and assumptions, input measurements, and observations. It is not materially different in concept to predictions and assessments that CRP has undertaken, although it is accepted that the underlying data on which traffic modelling exercises are based may be more complete than data that exist for the oceans. That is to be expected. It does not mean however that the "certainty" or accuracy of traffic modelling is necessarily any greater than the modelling or predictions undertaken by CRP's witnesses (for example, due to the unpredictability of human behaviour).
44. The DMC should therefore not apply the same expectations as to details in the models in the EEZ context as it might expect for an inshore or terrestrial modelling exercise. It should bear in mind that the modelling and predictions undertaken by CRP have incorporated an appropriate level of conservatism to reflect the information on which they are based and the environment in which they are made.
45. The particular circumstances of this application are that the activity, being dredging at depths of approximately 400 m, is a new application of existing technology. The technology is extensively used in shallow waters globally, however, this will be the first time it is used at 400 m.
46. Taking these factors into account, the "best available information" for this application must comprise a mixture of existing literature and research, new research, and predictive modelling. The information will be coupled with validation and monitoring once mining commences (if consent is granted).
47. It is submitted that "uncertainty" has become an overused 'buzz word' following the Trans-Tasman Resources (**TTR**) hearing and decision. There is a risk that overuse of the word could lead to inappropriate or less vigorous decision making in some circumstances. It is easy for submitters to stand on the side-lines in a marine consent application in the EEZ and assert uncertainty without acknowledging the context or engaging with how a particular issue could be managed or addressed. There are a number of instances where submitters' witnesses cannot fault the fundamentals of the scientific research and modelling undertaken by

CRP's experts and indeed largely accept their conclusions, but still fall back on "uncertainty" to justify a negative or unduly conservative opinion. That approach is not helpful or constructive.

- 48.** Lack of detail should not be confused with lack of certainty. The nature and variability of the habitats and ecosystems are understood at a scale appropriate for the scale of the likely impacts from mining. The addition of more detail is not likely to affect the evaluation of the environmental significance of those impacts. Similarly, conditions are proposed to manage and mitigate the environmental effects of the mining operations, based on conservative analyses of environmental factors. Additional detail is unlikely to lie sufficiently outside the range of factors already included in the environmental planning that it would fundamentally change the understanding of factors such as animal behaviour or habitat sensitivity, and materially change the proposed conditions.
- 49.** It is submitted that a better characterisation of some of the unique issues for prospective activities in the EEZ are viewed through the lens of "risk" and "risk management". As an example, there is a risk, albeit minor, in light of Ms Lescinski and Dr Spearman's evidence, that the predictive modelling of the sediment plume is incorrect. However, that risk can be managed by monitoring and data gathering exercises when mining begins, coupled with environmental thresholds and adaptive management requirements should monitoring show that the plume behaves differently to what is predicted.
- 50.** A further buzzword which has emerged is "Baseline Information". The term itself is not perfectly clear in all its applications, but it is generally agreed to refer to knowledge about aspects of the environment before an activity starts. In this particular application the level of baseline information is high (bearing in mind the application is within the EEZ). But in any event, it is submitted that a high level of baseline information is not always necessary to accurately predict effects or impacts (and in some cases baseline information is not required prior to consent being granted), or to address adverse environmental outcomes or unacceptable risks in a marine consent application. The risk from lower levels of baseline information can be managed by adaptive management. In addition, there is no point having further information unless it is meaningful – for example,

having further information about seabirds or marine mammals will not alter any mitigation that is appropriate to be undertaken.

51. It is submitted that the DMC should not therefore be swayed by assertions of uncertainty or inadequacy of baseline information. Rather, it should consider whether the approach adopted to assessing effects or predicting an outcome is reasonable and sufficiently conservative, and what the risks might be if the approach is not sufficiently conservative.

LEVEL AND ADEQUACY OF CRP'S INFORMATION

52. The phosphorite deposit on the Chatham Rise has been the subject of various investigations since the 1950s. These are described by Dr Falconer in his evidence.⁷
53. Extensive sampling, mostly within the MPA, was carried out in two research cruises in the late 1970s and early 1980s. The 1978 *RV Valdivia* collected samples in the western half of the MPA. The 1981 *RV Sonne* cruise collected samples in the eastern part of the MPA.⁸ Collectively the two surveys collected over 1,100 sediment samples.⁹ The surveys also collected photographs and video of the sea floor. As described by Mr Wood and Mr McKenzie in their evidence, CRP was able to utilise those existing data (along with other existing data) for its project and also to plan its research.¹⁰
54. CRP undertook six surveys to obtain additional oceanographic data, to map the sea floor shape at several levels of resolution, to photograph and sample sea floor habitats and organisms, to sample the sea floor sediments, and to measure the physical properties of the sea floor. CRP also contributed to the 2013 Ocean Survey 20/20 (OS 20/20) voyage that extended the environmental transects beyond the mining permit area. That voyage collected further multi-beam swath bathymetry data, seabed photographs, and samples of seabed sediment and organisms from eight areas on the crest of the Chatham Rise.¹¹

7 Falconer, pages 11-21.

8 Falconer, figure 2, page 14.

9 Wood, paras 35-41; McKenzie, paras 20-29.

10 McKenzie, para 27.

11 Wood, paras 45-46.

55. The data from these surveys has fed into the design of the mining system and also the various environmental reports and studies CRP has commissioned. CRP's research is described in paragraphs 34 - 71 of Mr Wood's evidence and paragraphs 29 - 53 of Mr Mackenzie's evidence.
56. CRP has extensive information on the shape of the sea floor, its physical and chemical properties, oceanographic conditions, benthic and pelagic organisms and the phosphorite resource.
57. CRP has also undertaken major desktop exercises:
- (a) Deltares, who are recognised as a world leader in oceanographic and sediment modelling, has modelled the behaviour of the sediment plume. HR Wallingford, from the UK and which is another leading oceanographic global expert, has reviewed this work.
 - (b) CRP has commissioned significant work by NIWA on Chatham Rise fisheries. This has resulted in updated Chatham Rise wide information on spawning fish, fish distribution and commercial fishing effort.
 - (c) CRP commissioned updates to and relied upon New Zealand's first trophic model of the Chatham Rise eco-system.
 - (d) CRP commissioned NIWA to undertake predictive modelling of benthic communities on the crest of the Chatham Rise and also used a well-recognised modelling tool to assist its spatial planning exercise.
 - (e) CRP, at the request of and in conjunction with the Deepwater Group (**DWG**), instructed NIWA to complete a fishery population modelling exercise that calculated the worst case scenario effects on commercial fish stocks from CRP's proposed mining operations.
 - (f) HR Wallingford modelled the sound from the dredging tool which has been interpreted by the world leading expert on impacts of sound on fish, Professor Emeritus Arthur Popper, and JASCO

Applied Sciences has modelled the sound from dredging operations which is being used by Dr Darlene Ketten to assess the potential impacts of sound on marine mammals.

(g) NZIER modelled the economic impact on New Zealand's economy of the project going ahead. The model was reviewed by Berl and it is the most sophisticated method to predict the impact of the project on New Zealand's economy.

- 58.** CRP has provided substantive responses to all 62 requests¹² for further information made by the EPA and DMC. Although CRP encourages the DMC to use its powers to request further information where it considers it necessary, in CRP's view the information before you is substantial, rigorous and, in the particular circumstances of this consent application, readily satisfies the best available information threshold.
- 59.** It is also noted that this information is in the public domain, and has in many instances added substantially to New Zealand's scientific knowledge of its marine territory, at CRP's cost.
- 60.** It is accepted that further information and sampling is always possible. For a large project like this one, it is inevitable that a line must be drawn as to whether further research is reasonably necessary. As discussed above, where there is a residual risk due to the level of information about a particular topic, that risk needs to be assessed in terms of its scale and significance and then managed accordingly.
- 61.** Uncertainty is all very well, but the key question is what is the risk and consequence, particularly when the existing factual, environmental and economic context is factored in? These exercises cannot and should not be undertaken in a vacuum and, simply because a proposal requires consent, it should not be used as a vehicle to address or remedy an existing issue unless there are material impacts in their own right.
- 62.** A real-world assessment is appropriate, rather than one that disregards existing and unregulated sources of environmental risk far greater and

¹² 44 questions from the EPA and 18 questions from DMC (on 17 July and a further 7 on 25 July)

more serious than those posed by CRP's proposal. The risks associated with CRP's project can be managed through consent conditions, monitoring, and further research as a part of adaptive management, as proposed by CRP.

TTR DECISION

63. It is submitted that the TTR decision provides little guidance on the interpretation of the EEZ Act or for your decision on the merits of CRP's application, despite some submitters' reference to it.
64. As a matter of law, this DMC is not bound by previous EPA decisions on the interpretation of the EEZ Act. The DMC would only be bound by decisions by the High Court and above.
65. Additionally, the TTR decision subject to an appeal that questions fundamental aspects of how the TTR DMC approached its task. On this basis alone, it would be unwise to give the TTR decision much weight.
66. More importantly, CRP's application is for a fundamentally different activity to TTR's. CRP's application must be determined on its own merits. Important differences between the consent applications are:
- (a) CRP's mining operation is simpler. It involves a single un-moored vessel mining phosphate-containing sediment using a trailing suction drag-head which is then mechanically separated on the vessel. The same sediment without the phosphate nodules is returned to the same part of the seabed where it came from. TTR's proposal involved multiple vessels, and more complicated separation and de-watering processes.¹³
 - (b) CRP's proposal occurs below the photic zone and therefore will have no effect on primary production. TTR's plume extended into the photic zone, which the DMC described as "*one of the more significant effects*".¹⁴

13 *Trans-Tasman Resources Ltd Marine Consent Decision*, section 2.2.

14 *Ibid*, para 3.

- (c) TTR's proposal involved mining of the seabed up to 11 m deep, thereby encountering a wider range of sediment and mud layers.
- (d) CRP's operations will occur at moderate depths, far removed from the coastline, in open-ocean conditions whereas TTR's operations were in shallow water, close to the coastline and in more dynamic oceanographic conditions.

67. These examples are merely intended to highlight the differences between applications at a very high level but there are clearly numerous other distinguishing features between the two proposals.

EPA STAFF REPORT

68. CRP expressed its views on the EPA's staff report in its sixth memorandum of counsel dated 27 August 2014. CRP does not intend to traverse those matters again in detail here, but sets out its views on the existing staff report in Appendix A together with an application to the DMC for a delay in the timing of preparation and release of the updated staff report.

EXISTING INTERESTS

69. To date, it appears that there has been no thorough analysis of the definition of "existing interests" by a DMC or Court.

70. The scope of the definition of "existing interests" is important because the effects on existing interests are a mandatory consideration under sections 59 and 60 the EEZ Act. Under section 59(2) the DMC must take into account any effects on existing interests and under section 60 the DMC must have regard to four matters concerning the interaction of the proposed activity and existing interests. Accordingly, if an existing interest is affected, then the statutory scheme suggests that it is a matter that deserves particular consideration, but not necessarily additional weight, in the decision-making exercise.

71. Given its importance, the definition of "existing interests" in the EEZ Act is set out in full below:

existing interest means, in relation to New Zealand, the exclusive economic zone, or the continental shelf (as applicable), the interest a person has in –

- (a) any lawfully established existing activity, whether or not authorised by or under any Act or regulations, including rights of access, navigation and fishing;
- (b) any activity that may be undertaken under the authority of an existing marine consent granted under section 62;
- (c) any activity that may be undertaken under the authority of an existing resource consent granted under the Resource Management Act 1991;
- (d) the settlement of a historic claim under the Treaty of Waitangi Act 1975;
- (e) the settlement of a contemporary claim under the Treaty of Waitangi as provided for in an Act, including the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992;
- (f) a protected customary right or customary marine title recognised under the Marine and Coastal Area (Takutai Moana) Act 2011.

72. It is important to note that this definition is not drafted inclusively. This means that Parliament intended the definition to be limited to what is specified in (a) to (f). If the intention was to encompass interests other than those specified in the definition, Parliament would have done so by drafting that definition in an inclusive manner.

73. Accordingly, it is submitted that an assertion of an existing interest, without providing a suitable foundation for the scope and extent of that interest to be established, should not suffice. The onus is on those who claim an existing interest to make it out. For example, in terms of paragraph (a) of the definition, what is the lawfully established existing activity (i.e. does it fit within the scope of the paragraph?), and what is the evidential basis for the claim? As a matter of fact and evidence, it is submitted that the identification of a lawfully established existing activity is the starting point.

74. It is submitted that paragraphs (b), (c), and (f) of the definition are not relevant in this instance.

75. There are several categories of activity where an existing interest clearly arises and is not questioned by CRP. The most obvious example is fishing, both commercial and, to the extent it occurs, the exercise of customary fishing rights. As far as the latter is concerned, there is no information to suggest that customary fishing rights are exercised within or in the vicinity of the marine consent area. As a consequence, none of the specific matters in section 60 appear to be relevant to that activity.
76. It is clear that the following matters, groups and activities fall within the definition of existing interests of relevance to CRP's proposal (putting to one side the question of potential effects on those interests):
- (a) Commercial fishing – all holders of quota have existing interests to the extent that the quota applies to Quota Management Areas that overlap with the marine consent area, and also to the extent that the quota has resulted from the Treaty of Waitangi (Fisheries Claims) Settlement Act;
 - (b) Lawful shipping, navigation and maritime activities, as a consequence of paragraph (a) of the definition;
 - (c) Te Rūnanga o Ngāi Tahu – as the submission of Ngāi Tahu observes, it derives existing interests through the Ngāi Tahu Claims Settlement Act. These interests have been specifically recognised by CRP, for example through the changes to the marine consent area to address the location of fossilised whalebones and also the ling long-lining activities of Mr Summerton and his company. Generally however, the takiwa of Ngāi Tahu (i.e. their settlement boundary) is to the west of the marine consent area.¹⁵
77. Notwithstanding the conclusion of the decision-making committee in the TTR application at paragraph [97] of that decision, the definition of "existing interest" does not expressly provide for cultural interests. The definition suggests that it is not enough to be interested in the project for any reason, cultural or otherwise, to have an "existing interest" as defined

¹⁵ See evidence of Maria Bartlett.

by the Act. It is submitted that cultural interests might be relevant under section 59(2)(m) as "*any other matter that the EPA considers relevant and reasonably necessary to determine the application*" but are not an existing interest under paragraph (a) of the definition.

- 78.** In particular, it is submitted that the expression of purely cultural interests, separate from fishing interests, does not fall within paragraph (a) of the definition of an "existing interest" because they cannot be considered an "activity". Rather, the definition suggests that such an interest needs to be specifically derived from and/or recognised by a Treaty claim or settlement.
- 79.** The parts of the definition that recognise Treaty-related matters are the only aspects which recognise a non-physical cultural interest, as all other limbs of the definition require identification of an "activity". The EEZ Act does recognise "protected customary rights" under the Marine and Coastal Area (Takutai Moana) Act 2011. Section 51(2)(e) of that Act establishes however that "protected customary right[s]" do not include activities that are based on a spiritual or cultural association, unless that association is manifested by the relevant group in a physical activity or use related to a natural or physical resource. This reinforces the physical activity point made above.
- 80.** It is noted that the EEZ Act's definition of "activity", which logically would apply to an "existing activity" in paragraph (a) of the definition of "existing interest", means "an activity restricted by section 20".
- 81.** Resolution of this issue is important for this application because some submitters have asserted that their cultural interests, as distinct from fishing interests, fall within the definition of existing interests.¹⁶ They have not however identified an "activity" that gives rise to the existing interest.
- 82.** The absence of cultural or social interest from the definition of "existing interest" corresponds to the difference in the definition of "sustainable management" in the EEZ Act to the RMA discussed above. The definition of "sustainable management" in the RMA includes provision for social,

¹⁶ See for example paragraphs 58-61 of the Hokotehi Moriori Trust submission, submission of Ngati Mutunga, and paragraphs 3.3(de) and (e) of Ngāi Tahu submission.

economic and cultural well-being, and health and safety of people and communities, whereas the definition of sustainable management in the EEZ Act does not. In addition, the definition of "environment" in the EEZ Act includes only the "natural environment", which is much narrower than the RMA definition which includes matters such as people and communities, and social, economic, cultural and aesthetic conditions. There is limited scope for non-physical cultural concerns to be taken into account under the EEZ Act.

- 83.** As a consequence, if it is not expressly recognised under the other paragraphs of the definition of existing interest (e.g. expressly deriving from a Treaty settlement), it is submitted that the EEZ Act does not provide for a cultural interest to be an existing interest under paragraph (a) of the definition. While CRP takes no issue with parties asserting such an interest, it says that the interest is not recognised by the EEZ Act.

Why is this an issue?

- 84.** It is important to understand what the existing interest is, so that the effect on it can be assessed. If for example an existing interest arose from a commercial fishing quota and a cultural interest was also claimed as a consequence, then are the interests (one being an existing interest, the other not) in fact different or are they one and the same? If the interests are different, then in what way?
- 85.** If they are regarded as being distinct, without providing a clear explanation of how that is so, then there is the potential for incorrectly recognising them under sections 59 and 60 of the EEZ Act, or otherwise double counting or giving the interest(s) too much weight. And even if a cultural interest *was* an existing interest (which is not accepted), if there is no impact on fisheries, does an alleged effect on a cultural interest need to be counted (for example where kaitiaki status is asserted)?
- 86.** The location of the proposal must also be relevant. What is the basis for an existing interest from a cultural perspective being claimed for an area of seabed 450km from the mainland and 250km from the Chatham Islands? What is the lawfully established existing activity that takes place there or would otherwise be affected by the proposal if it is not fishing?

- 87.** In that respect, if a cultural interest is validly claimed, it is still important to consider how it might be affected by the proposal. An example is the submission of Ngāi Tahu, which refers to impacts on Kaikoura Whale Watch as a consequence of CRP's proposal. There must be an evidential onus on the person asserting an impact to substantiate it. If there is no impact on whales or the food web which supports them, and in turn no identifiable impact on the business, then it is submitted that claims of effects on existing interests must be given little to no weight.
- 88.** It may be that these questions ultimately make little practical difference to the DMC's deliberations given that it ultimately will involve a weighting exercise based on evidence, and because existing interests do not act as a trump. Nevertheless, the legal principle about the scope of the definition is an important one and should be resolved.
- 89.** Putting all of these matters to one side, CRP has engaged with Iwi and Imi and has sought, where possible, to recognise and provide for their cultural concerns. It has done so in respect of the cultural concerns associated with the fossilised whale bones by reducing the marine consent area and including any remaining identified areas within mining exclusion areas. It has also sought to make provision for cultural interests to be brought to bear through its proposed Environmental Reference Group, its Chatham Islands Trust, and the Environmental Compensation Trust.

Consultation

- 90.** There is no requirement in the EEZ Act to consult with potentially affected persons before lodging a marine consent application with the EPA. The statutory marine consent process itself involves significant public participation through notification, submissions, evidence and hearings.
- 91.** Some submitters have criticised aspects of CRP's consultation. However, despite the lack of requirement to consult, CRP undertook broad consultation over the last four years. As set out in Ms Sanders' evidence, CRP expended considerable effort consulting with a wide range of persons it identified as being interested in its project.

92. CRP's consultation gave these persons early information about the project and an opportunity to provide feedback. While some parties might not like the outcome of the consultation process, they have had ample opportunity to have their views considered.

POTENTIAL ADVERSE EFFECTS

Existing environment

93. In making your decision it is important to bear in mind the context in which CRP's activities would occur. The context includes the existing environment and existing activities on the Chatham Rise.
94. The primary existing activity across the wider Chatham Rise is fishing, which largely occurs by trawling and some long-lining.
95. Other than the impacts on fish stocks which are managed through the Fisheries Act and its associated management regime (e.g. the quota management system), the physical impacts of fishing are unregulated under the EEZ Act, Parliament and therefore society can be deemed to have accepted the adverse environmental effects of fishing on the Chatham Rise.
96. There is a similar concept under the RMA which is known as the "permitted baseline". Under this doctrine, effects from activities which would fall within permitted thresholds set in regional or district plans are generally not considered in resource consent decisions. There is of course also the concept of the "existing environment" which has similar relevance.
97. On the Chatham Rise, fishing activities cause significant environmental effects. These are described in Dr Tuck's evidence between pages 7 to 16. As described by Dr Tuck, bottom trawling gives rise to environmental effects through dragging heavy trawling equipment over very extensive areas, which both damages sensitive benthic organisms (including corals) and generates sediment plumes in areas where commercial fish species accumulate. Areas of seabed and all manner of marine life will be disturbed and impacted by bottom trawling, often multiple times in a year, and year after year. The annual average trawl

footprint over recent fishing years on the Chatham Rise has been 17,791 km².¹⁷ This figure does not account for multiple fishing events in the same area.

- 98.** About 385,000 km² of seabed in the EEZ is estimated to have been affected by bottom trawling since the 1989/1990 fishing year. About 50,000 km² of seabed in the EEZ and Territorial Sea was affected by bottom trawling in the 2009/2010 fishing year. Of this, approximately 3,200 km² is estimated to be previously untrawled seabed. By way of comparison the area of the North Island is about 114,000 km².¹⁸
- 99.** In terms of the widespread sediment plumes and sedimentation generated by bottom trawling, the annual footprint of sedimentation greater than 1mm generated from bottom trawling on the Chatham Rise is estimated to be 18,000 km².
- 100.** It is not suggested that the permitted baseline doctrine in the RMA applies equally here, but instead to illustrate the point that the context and existing environment are important.
- 101.** Existing activities and their effects should be considered when assessing the nature and significance of the effects of CRP's proposal and making your decision on CRP's application.
- 102.** Indeed, one may consider the position adopted by the fishing industry in CRP's proposal to be an extraordinary double standard when the scale and extent of effects are considered and compared (quite apart from the question of whether their activities are regulated).
- 103.** Society's acceptance of the effects of commercial fishing is however reflected in the submissions of a number of groups. This includes Iwi and Imi submissions and those of environmental organisations which appear to support commercial fishing or acquiesce to its effects (seemingly

¹⁷ Tuck, para 36.

¹⁸ Response to request 37, page 3.

overlooking the significant scale and impact of its effects) but, quite inconsistently, criticise CRP's proposal.¹⁹

Potential effects on fishing

- 104.** Against that context, it is submitted that there is at least as great a risk posed to fish and fishing by their own activities, as there is by CRP's comparatively modest proposal. This is borne out by the scientific evidence which, even on a worst-case basis, judges the likely effect of the mining operations on fishing to be negligible and the overall risk to be low. The only contest on this conclusion is the fall-back position of "uncertainty".
- 105.** The potential for adverse impacts on fishing is low because:
- (a) the distribution of commercial fish species is such that the marine consent area is not and has not been an important habitat for commercial fish species;
 - (b) consequently, very little commercial fishing occurs within the marine consent area (both before and after the BPA took effect);
 - (c) the effects of mining, particularly those of the sediment plume, are restricted to the areas within and immediately adjacent to the mining blocks;
 - (d) there are no spawning areas identified in the consent area so the effects on eggs are likely to be small;
 - (e) juveniles of commercial fish species are widespread on the Chatham Rise and therefore the effects of mining on them as a population are likely to be small; and
 - (f) there will be no material effects on primary productivity and therefore the wider Chatham Rise ecosystem.

¹⁹ KASM submission, pages 26-27; Deep Sea Conservation Coalition Inc submission, pages 17 and 20; Greenpeace submission, pages 17 and 20; EDS submission, para 2; ECO submission, section 6.0; Gareth Hughes submission, section 3.

- 106.** So that any doubt about the impacts of CRP's proposal on fisheries could be resolved, CRP in conjunction with the DWG jointly commissioned NIWA and two scientists nominated by the DWG to model worst case scenarios of the effects of mining on three commercial fish species (hoki, hake and ling). These assumed, conservatively, that all fish within the boundaries of the sediment plume would be killed or that, in the mined areas, there would be a total and permanent habitat loss (ie no recolonisation or recovery would occur ever).
- 107.** The outcomes of this modelling exercise demonstrated that the worst case effects, based on very conservative assumptions, are in most instances negligible. This is set out in Mr Dunn's evidence and the NIWA report titled "*Stock assessment impacts in the Chatham Rock Phosphate consent area*" (Dunn and Hurst, 2014) which was annexed to CRP's response to the DMCs request for further information regarding commercial fishing.

Fish distribution

- 108.** Dr O'Driscoll reviewed fish distribution on the Chatham Rise based on commercial and research catch effort and trawls. CRP's work updated the previously published New Zealand research on spawning data for commercial fish species.
- 109.** Fish distribution data show that the marine consent area is not home to a significant portion of any of the 45 commercially caught species found on the Chatham Rise. Based on analysis of NIWA's research trawls, none of the 45 species examined in detail had more than 10% of its total estimated biomass within the marine consent area when data from the 10 most recent Chatham Rise trawl surveys were averaged.²⁰ When considering this, it is important to remember that only a very small fraction of the marine consent area will be mined at any one time, and hence any immediate effects of mining operations will be very confined.
- 110.** As set out in response to the DMC's request for further information on distribution of commercial fishing, fishermen are experts at finding fish.

²⁰ O'Driscoll, paras 21 - 34.

The concentration of fishing activity is a reasonable proxy for the density of adult fish.

- 111.** Dr O'Driscoll found that between 1 October 2003 to 30 September 2013 a total catch of 165.6 tonne was estimated to have been caught in the revised consent area. This amounts to less than 0.5% of the catch for species associated with the QMA and less than 0.1% of the total catch of species from New Zealand's EEZ.²¹ By way of comparison, the current catch limit for hoki alone, which is one of New Zealand's largest fin fish fisheries, is 150,000 tonne within the EEZ and peaked at 75,000 tonne on the Chatham Rise in 1997 to 1998 and 1998 to 1999. Catch volumes have been stable at between 36,000 tonne and 38,000 tonne on the Chatham Rise over the past seven years.²²
- 112.** Much of the proposed marine consent area falls within the Chatham Rise BPA, where bottom trawling has been prohibited since 2007. Dr O'Driscoll notes that fishing effort within the marine consent area was low before the BPA was created.²³ This indicates that the area was never important for commercial fishing. Indeed, DWG's Mr Clement notes in his evidence that a factor in selecting the locations of the BPAs "*was to minimise impacts on current fishing activity*".²⁴

Effects on fish

- 113.** The potential effects on a fish can occur through impacts on fish eggs, larvae, juvenile or adult fish.
- 114.** Dr Page has described levels at which elevated TSS can have adverse effects on adult fish, including lethal effects. TSS levels from the sediment plume are not predicted to reach fatal levels for fish, and outside the mining blocks, concentrations of TSS rapidly fall below thresholds where fish may be affected.²⁵ In any event, it is predicted that fish will swim away from an area where TSS levels are unsuitable for them.²⁶

21 O'Driscoll, paras 61 and 62.

22 O'Driscoll, paras 35 and 36.

23 O'Driscoll, para 64.

24 Clement, para 39.2.

25 Kennedy, Sediment and Water Chemistry, para 86.

26 Page, para 32

Potential impacts on eggs and larvae

- 115.** Dr O'Driscoll has described the distribution and aggregation of spawning fish in his evidence and in his report entitled "*Spawning areas of fish on the Chatham Rise 2001-2014*" which was provided in response to request 34 of the EPA's request for further information. Dr O'Driscoll found that:²⁷

Based on available data, there is no evidence that the revised consent area was a particularly important spawning ground for the 29 species examined.

- 116.** The effects of TSS on fish eggs and larvae are set out in Dr Page's evidence. In summary:

- (a) in relation to fish eggs, marine fish eggs are more tolerant of elevated levels of TSS than larvae with the exception of adhesion which may affect fish eggs' ability to float or sink,²⁸ and
- (b) sedimentation which buries eggs that settle on the sea floor can also adversely affect fish eggs.²⁹

Mr Page notes that while there is no specific information on effects of TSS on fish eggs from New Zealand fish species within the marine consent area, reasonable assumptions can be made from similar species overseas (which is what Mr Page has used). Overseas data can be used to conservatively determine a TSS level below which no adverse effects would be expected.³⁰

- 117.** Elevated TSS concentrations also have the potential to adversely affect fish larvae. As recorded by Dr Page and Mr Kennedy, fish larvae are either moved by currents or remain relatively close to where they hatched.³¹ This means that potential effects on fish larvae are proportionate to their distribution and the likelihood of those larvae crossing the small area of the Chatham Rise where a plume with elevated TSS levels sufficient to affect those larvae is present (noting that mining occurs in 4-5 days out of a 10 day mining cycle). That area is within and

27 O'Driscoll et al (2014b), page 5. See also O'Driscoll, para 55.

28 Page, paras 25-28.

29 Page, para 25.

30 Page, paras 22, 27 and 28.

31 Page, para 24; Kennedy, Environmental Impact Assessment, para 83.

immediately adjacent to the mining blocks within the bottom 10 to 20 metres of water. Given the size of the plume relative to the volume of water likely to contain fish larvae and the distance to known spawning grounds, the proportion of fish larvae potentially affected by the plume will be very small.³²

- 118.** Dr Tuck describes the distribution and scale of the sediment plume arising from bottom trawling in his evidence and in response to EPA information request 37. Bottom trawling often occurs close to spawning aggregations of fish, and adverse effects of elevated TSS concentrations on fish eggs and larvae from trawling may be more likely than from mining.
- 119.** By way of brief summary, many commercial fish species spawn on the slopes of the Rise, remote from and at different depths to the proposed mining activities. These species include key commercial species such as hoki, hake, orange roughy, oreo species and silver warehou.³³ With the removal of the eastern prospecting area where ling were known to spawn, the potential impacts on spawning ling and their eggs and larvae have been minimised or removed.³⁴

Impacts from sound

- 120.** Dr Diane Jones has modelled the sound outputs from the proposed mining operation and the findings of her study are set out in the HR Wallingford report entitled "*Chatham Rock Phosphate Underwater Sound Modelling*" annexed to response to request 36 of the EPA's request for further information.
- 121.** Professor Emeritus Arthur Popper, a world-leading expert on the impacts of sound on fish, has provided an analysis of potential effects from sound on fish on the Chatham Rise. It is Professor Emeritus Popper's opinion that:³⁵
- (a) fish will not be physically harmed or killed by sound from dredging operations;

32 Kennedy, Environmental Impact Assessment, para 83.

33 See O'Driscoll (2014 (b)) provided in response to request 34 and Dr O'Driscoll's evidence.

34 Baird, para 22 and figure 2a.

35 Popper, paras 21 – 30.

- (b) sound levels from dredging are substantially below levels that can result in changes to sensitivity of hearing in fish;
- (c) sound pressure levels beyond 15 km from the mining vessel are likely to be low or at ambient sound pressure levels which means that fish will not hear dredging sounds or will otherwise hear such sound as part of ambient background noise;
- (d) sound levels are likely to be far too low to damage eggs and larvae; and
- (e) any effects of sound on fish in the Chatham Rise would likely come from fishing boats themselves, rather than the dredging operations.

Fish population modelling

- 122.** As mentioned above, in conjunction with the DWG, CRP commissioned NIWA to model worst case scenarios for the impact on the fish stocks of the three most significant commercially caught species within the marine consent area, hoki, hake and ling. The results of that exercise are described in Mr Dunn's evidence and Dunn and Hurst (2014).
- 123.** The modelling exercise assessed the likely long-term effects of mining operations on fish populations by considering three broad scenarios:³⁶
- (a) no impact from mining to provide the baseline for comparison;
 - (b) assuming that there is an even distribution of fish within the marine consent area, and that all fish that encountered the plume with TSS levels above 3 mg per litre died; and
 - (c) habitat disturbed by mining would be permanently unusable for spawning, juvenile settlement or adult preferred habitats (ie that there is no recovery whatsoever).

³⁶ Dunn and Hurst (2014). Dunn, paras 20 –24.

124. As recorded in Dunn and Hurst (2014) and Mr Dunn's evidence, modelling exercises assumed a very conservative, worst case basis. The conservative assumptions are described in the report and Mr Dunn's evidence and are not repeated here. As noted earlier however, the assumptions were so conservative that they bordered on the unrealistic in terms of potential impacts.

125. Mr Dunn concluded that:³⁷

For all of the avoidance scenarios of impacts arising from the effects of the sediment plume, the predicted difference from the no impact population estimate is likely to be below the calculation accuracy of the model and can be considered negligible.

For the model of impacts arising from loss of recruitment due to benthic habitat loss, the predicted difference from the baseline population estimate was small and is a worst case estimate of the true level of impact.

126. The loss of recruitment due to benthic habitat loss findings for ling (which was the only species modelled because hake and hoki eggs and larvae have never been recorded within the marine consent area) produced the highest predicted impact, although still very low at 1.6% to 1.8% for the scenarios used in the exercise.

127. Dunn and Hurst (2014) describe the result as likely to be the worst case outcome and highly conservative because it assumes that fish distribution and spawning across the marine consent area is evenly distributed across the area.³⁸ Dr O'Driscoll found however that spawning ling concentrate in the eastern fringe of the marine consent area.³⁹ Also, the model assumed the habitat once impacted will never recover to any habitable state. This is unlikely as Dr Rowden explains that recovery of the seabed will occur with time.⁴⁰

128. It is submitted that the unavoidable conclusion from this modelling exercise is that CRP's proposed mining operation is unlikely to have a

³⁷ Dunn, paras 32 and 33.

³⁸ Dunn and Hurst (2014), page 14 (which is annexed to CRP's response to the DMC's request for further information regarding commercial fishing and water quality effects).

³⁹ O'Driscoll, figure 7. See also Baird, para 22 and figure 2a.

⁴⁰ Rowden, paras 45-60, 90 and 93. See also Kennedy, Assessment of Environmental Impacts, paras 71-76.

significant impact on commercial fish stocks and therefore commercial fishing.

- 129.** The potential effects on the Chatham Rise ecosystem and primary productivity are discussed below, however the evidence is that the project will have no effect on primary productivity.

Other alleged effects on commercial fishing

- 130.** The Crown, Ngai Tahu and Hokotehi Moriori Trust raised trace element bioaccumulation concerns in their submissions (as did the DWG and KASM).

- 131.** It is the evidence of Mr Kennedy that the risk of bioaccumulation of trace elements in fish is very low. Mr Kennedy concludes that bioaccumulation of trace elements by fish will be regulated by biological processes, that no bio-magnification of any trace element is predicted, and the suitability of fish caught from the Chatham Rise for human consumption will be unaffected by mining.⁴¹ It is Mr Kennedy's evidence that mobile elements would be released into the water from plumes produced by trawling in similar proportions to that in CRP's elutriate testing and that there is no evidence that any water quality changes have had any effects on the Chatham Rise.⁴²

- 132.** In turn, it is submitted that there should be no adverse market effect if there is no actual effect.

- 133.** Dr Hermanspahn modelled the potential impact of increased radioactivity arising from uranium released into the marine environment and found that increased uranium would pose a negligible risk to marine biota.⁴³

General comment on fishing industry submissions

- 134.** Throughout the marine consent application process, the fishing industry through the DWG ran a media campaign against CRP's proposal alleging "catastrophic" environmental effects which would result from CRP's

41 Kennedy, Sediment and Water Chemistry, para 88.

42 Ibid, paras 89 – 94.

43 Hermanspahn, paras 20-25.

proposal, unsupported by any evidence. Until evidence for fishing interests was filed, the only scientific evidence about the proposed operation and effects of commercial fishing on marine environment has been provided by CRP. Apart from a peer review of the sediment modelling undertaken by CRP (which confirmed that the modelling was sound), the only contribution to the scientific analysis was DWG's input into the stock modelling exercise described above.

- 135.** It is submitted that the fishing industry's concern with the potential effects of mining on benthic fauna and habitats is, with limited exceptions, hypocritical. An individual vessel trawls, on average, over 30 km² every 8 hours. Bottom trawling alone disturbs and damages approximately 3,000 km² of previously untouched seabed in New Zealand's EEZ each year.⁴⁴
- 136.** In one year, bottom trawling directly impacts approximately 18,000 km² of the seabed on Chatham Rise through the direct effects of dragging heavy trawling mechanisms and sedimentation.⁴⁵ That is in excess of fifteen times the total seabed disturbance that would result from the maximum exercise of the marine consent that is sought over 35 years.
- 137.** The effects of sediment plumes generated by trawling, which are significantly more extensive than those of seabed mining and occur in areas where fish concentrate and spawn, are likely to be significantly more harmful to fish stocks and habitats than those generated by CRP's mining.
- 138.** To the best of CRP's knowledge, the fishing industry has never researched the chemical composition and bioaccumulation of minerals released into the water column from the extensive plumes generated by bottom trawling where fish concentrate and, indeed, it is understood that the industry has not commissioned publicly available research into the wider environmental effects of its activities on an equivalent scale to CRP's research.
- 139.** Fishing also has the largest direct and indirect effects on sea birds and marine mammals through by-catch, entanglement and vessel strike.

⁴⁴ Response to request 37, page 3.

⁴⁵ Ibid, Table 1.

140. Overall, it is submitted that the greatest impacts and risks to the fishing industry and the fish that they rely on arise from their own bottom trawling, rather than a very small amount of seabed disturbance in an area that is not important for fishing or spawning.

Impacts on international markets and sustainability certification

141. There is no supportable evidence that commercial fishing will suffer any adverse effects by market perception or its sustainability certification for hoki and other species. Ultimately the fishing industry's certification as sustainable or not rests on how the industry conducts itself rather than on the actions of other users of the marine environment.
142. The Marine Stewardship Council's (**MSC**) *Fishery Standard, Principles and Criteria for Sustainable* set out the three principles which fisheries must comply with in order to be eligible for MSC certification. None of the three principles refer to third party activities. The principles are:
- (a) **Principle 1: Sustainable fish stocks** - the fishing activity must be at a level which is sustainable for the fish population. Any certified fishery must operate so that fishing can continue indefinitely and is not overexploiting the resources.
 - (b) **Principle 2: Minimising environmental impact** - fishing operations should be managed to maintain the structure, productivity, function and diversity of the ecosystem on which the fishery depends.
 - (c) **Principle 3: Effective management** - the fishery must meet all local, national and international laws and must have a management system in place to respond to changing circumstances and maintain sustainability.
143. It is speculative and bordering on scare-mongering to assert that the very modest activities of CRP could threaten the market perception of New Zealand fish. It is noted that this risk was considered and dismissed by one of the DWG's key consultants who gave evidence for TTR where similar concerns were expressed.

How to take into account fishing interests in your decision?

- 144.** Even if there were measurable or more than minor effects on commercial fishing, no veto can be exercised and nor is it a barrier to granting marine consent. Section 59 requires you to take into account any effects on existing interests but that does not mean that any possible effects on these interests should take precedence or be unreservedly protected by your decision. Instead, the EEZ Act envisages a balancing exercise whereby resources are managed in the most efficient way (taking into account economic and environmental considerations).
- 145.** We discuss section 59(2) below in more detail but note at this point that the mandatory considerations in section 59(2) do not have an internal hierarchy.

Primary productivity and ecosystem effects

- 146.** Dr Pinkerton's and Mr Kennedy's evidence is that there will be very low risks of adverse effects on primary productivity.⁴⁶
- 147.** All primary production in the Chatham Rise is based on the growth of phytoplankton. All phytoplankton growth occurs in the euphotic zone which extends to a maximum depth of 150 m in winter. Because the sediment plume is concentrated in the bottom 10-20 m of the water column, there will be no shading effects that could affect primary productivity on the Chatham Rise. Conversely, Dr Pinkerton has observed that mining may increase access to dissolved nutrients which could have a small increase in primary productivity by phytoplankton.⁴⁷
- 148.** As mentioned above, Dr Pinkerton developed a trophic model for the Chatham Rise. This work illustrates another example of undue criticism of the information provided by CRP. This is in fact a cutting-edge study.⁴⁸ The trophic model shows relationships and relative importance of species in the Chatham Rise ecosystem. Although the model is static and cannot predict effects on the Chatham Rise ecosystem, it is a very useful tool for

⁴⁶ Pinkerton, paras 40-42; Kennedy, Environmental Impact Assessment, para 121.

⁴⁷ Pinkerton, paras 40-42.

⁴⁸ Kennedy, Environmental Impact Assessment, para 119.

identifying which species are ecologically more important than others and to inform judgments on how mining may affect the Chatham Rise ecosystem.

- 149.** While the model is static, Dr Pinkerton performed a sensitivity test for corals and encrusting invertebrates. A 10-fold increase in the biomass of these organisms led to only small increases in their trophic importance. This test demonstrates the low importance of corals and encrusting invertebrates to the ecosystem model.⁴⁹
- 150.** Aside from phytoplankton (which is the only primary producer in the ecosystem) other consuming organisms also have high trophic importance. These are in decreasing order of importance:
- (a) small demersal fishes;
 - (b) mesozooplankton;
 - (c) hoki;
 - (d) arthropods (such as prawns and shrimps); and
 - (e) mesopelagic fish.
- 151.** Mr Kennedy summarises the potential effects of CRP's activities on the Chatham Rise ecosystem by reference to Dr Pinkerton's trophic model at paragraphs 118 to 122 of his evidence. Mr Kennedy observes that the key species which provide much of the food for fish species will be unaffected by the proposal because they live in the upper water column.
- 152.** In relation to organisms that will contact the plume because they live near the seabed or their diel (daily) migration brings them close to the seabed, any effects will be scale limited and therefore will be small given the size of the plume compared with the size of the MPA, the marine consent area and the Chatham Rise.

⁴⁹ Pinkerton, para 38.

- 153.** Some small displacement effects may occur. Similar effects would however also be predicted from plumes generated by bottom trawling except that the plumes generated by bottom trawling are in areas where fish populations are highest.
- 154.** Dr Pinkerton also discusses important consumer species, he calls "middle trophic level prey species" or "MTLPS" in his evidence which form prey for commercial fish species. MTLPS prey on zooplankton.
- 155.** Dr Pinkerton states that commercial fish species feed at least daily. It is Dr Pinkerton's evidence that it is reasonable to assume that commercial fishers focus on areas that have the highest concentration of target species, which in turn concentrate on areas where there are high levels of MTLPS. Dr Pinkerton tests this assumption in paragraph 56 of his evidence and there is some correlation between MTLPS and fishing effort. Some of the MTLPS which are important to commercial fish species are less abundant in the proposed marine consent area, which matches the known distribution of commercial fish species which also correlates with fishing effort.⁵⁰

Benthic communities

- 156.** CRP's application and evidence recognise that the project will have significant adverse effects on benthic communities and habitats within the mined areas and some of the areas immediately adjacent to the mining blocks. This is discussed by Mr Kennedy, Dr Rowden, Dr Hewitt and Ms Taylor in their evidence.
- 157.** The effects are unavoidable. Extraction of phosphorite cannot occur without damaging benthic habitats or altering the substrate.
- 158.** As set out in the evidence, marine biota within the mined substrate will be destroyed and the substrate will change from a mixture of sand, nodules, and hard substrate to a relatively uniform soft sediment substrate which will attract different benthic communities through recolonisation.

⁵⁰ Pinkerton, paras 53-56.

159. CRP recognises that these impacts on benthic communities are significant. However, the following factors are balanced against the effects:

- (a) The areas mined will be small compared to the marine consent area and the Chatham Rise (and areas affected by commercial fishing). The areas mined are 0.6% per year of the marine consent area, 8.6% over 15 years, or 20% over 35 years.
- (b) Recolonisation will occur with time, albeit the new communities will be different. The soft sediment habitat created after mining is likely to provide favourable habitat for many species that already inhabit these spaces, including scampi.⁵¹
- (c) CRP has proposed recolonisation trials to determine whether or not additional hard substrate could encourage greater biodiversity by recolonisation, including stony corals. Although the effectiveness of CRP's trials has not been tested, colonisation of substrates in the deep sea has been demonstrated. Dr Rowden records that a coral species similar to *Goniocorella dumosa* has colonised oil rigs in the North Sea.⁵²
- (d) CRP has undertaken a thorough and New Zealand first spatial planning exercise whereby it has sought to maximise the conservation and economic values of the consent area. CRP has undertaken to use its best endeavours to ensure that those areas identified through the planning exercise,⁵³ as likely to have high biodiversity or other conservation value, are given full legal protection from all activities which might disturb the seabed and benthic organisms.⁵⁴ In all likelihood, such protection would be most achieved through future marine protected areas legislation. The spatial planning exercise is discussed further below.
- (e) Areas of hard substrate greater than two square kilometres will be avoided. Areas of hard substrate provide habitat for attaching

⁵¹ Kennedy, Environmental Impact Assessment, para 113.

⁵² Rowden, para 78.

⁵³ Noting that the modelled area was wider than the marine consent area.

⁵⁴ This approach was accepted in *West Coast Environmental Network Incorporated v West Coast Regional Council* [2013] NZEnvC 253.

biota such as coral and other organisms, which in turn provide habitat for associated communities.

- (f) In the first five years, mining blocks will be separated such that the potential for sedimentation overlaps from individual mining blocks is minimised.⁵⁵ This approach potentially maximises recruitment of early recolonizing organisms.
- (g) Recolonisation of soft sediment habitats is expected to occur within 10 years.⁵⁶ Recovery rates of coral are estimated to be between 10 and 100 years.⁵⁷
- (h) Finally, CRP proposes to provide compensation for its unavoidable impacts through the establishment of an Environmental Compensation Trust.⁵⁸ CRP proposes to provide an annual sum of \$350,000 (inflation adjusted) to the Trust which would amount to \$5,250,000 over 15 years and \$12,250,000 over 35 years. The Trust would be administered by representatives of DoC, Iwi/Imi, environmental NGOs and CRP representatives. Funding would be allocated to projects or research that meets the Trust's objectives:
 - (i) to advance environmental and biodiversity enhancement in the marine environment of the Chatham Rise, and on or around the Chatham Islands;
 - (ii) to support scientific research of the Chatham Rise, in particular geographic areas and biological communities relevant to the Consent Holder's mining operations; and
 - (iii) to support research into and technological improvements in seabed mining methods which reduce or mitigate adverse effects in the marine environment.

160. CRP has discussed some opportunities which could be pursued through the Trust. One possibility is assisting with the Taiko Trust's work towards establishing a second breeding colony for the endangered Chatham

⁵⁵ See CRP's response to the EPA request numbers 3, 4, 5 and 7.

⁵⁶ Rowden, para 90.

⁵⁷ Rowden, para 93.

⁵⁸ See evidence of Miss Taylor and draft conditions 44-46.

Islands albatross. Further detail about the proposed Environmental Trust is set out in Ms Taylor's evidence at paragraphs 126 to 129.

- 161.** CRP recognises that its effect on these benthic communities is the most significant effect of its proposal. However, the areas affected are small percentage of the marine consent area, a smaller percentage of the Chatham Rise BPA, an even smaller percentage of the area affected by bottom trawling and an even smaller percentage of the Chatham Rise.
- 162.** Therefore, in making an assessment of the impact on benthic habitats, it is submitted that the affected areas are relatively small. CRP will mitigate its effects as best it can by setting aside important areas for conservation and scientific purposes, and CRP will continue to identify areas of conservation importance as part of its surveying operations. Also CRP will compensate for the unavoidable impacts through its environmental compensation package. The potential effects on benthic ecosystems, while significant, do not mean that sustainable management under the EEZ Act is not achievable.

Benthic habitats and spatial planning

- 163.** CRP has proposed an innovative and advanced mechanism for identifying and protecting sensitive organisms within and near its marine consent area. This approach is more advanced and recognises a far wider range of values than the more coarse and limited approach used to establish the BPAs, which only recognise the interest of the fishing industry and provide protection from the effects of bottom trawling.
- 164.** *Goniocorella dumosa* is a stony coral protected under the Wildlife Act 1953. However, the Wildlife Act 1953 permits killing of coral if it is in an incidental part of an activity.⁵⁹ Communities dominated by *Goniocorella dumosa* have high ecological value and CRP has sought to preserve their conservation value through its proposed mining exclusion areas.
- 165.** *Goniocorella dumosa* and other corals are found throughout New Zealand's EEZ and Chatham Rise. None of the species in the marine

⁵⁹ For example, we understand that DoC considers killing coral by bottom trawling is an incidental activity and therefore is permitted under the Wildlife Act 1953.

consent area have been shown to be endemic, although due to sampling limitations and methodologies it is possible that some species *could* be endemic to the marine consent area, as discussed by Dr Rowden.⁶⁰

- 166.** CRP's spatial planning exercise provides a more sophisticated and robust way of protecting various and specific communities while enabling resource development. CRP's spatial planning approach is carefully designed to take into account different values (conservation, scientific and economic). CRP has identified 11 proposed no mining areas which cover 19% of the marine consent area. In that respect, we note that mining over 15 years would take place in 9% of the marine consent area (92% of the marine consent area is within the BPA, and in turn 55% of the BPA is within the marine consent area).
- 167.** It is anticipated that CRP's spatial planning approach could be a precursor to legislative amendments (most likely to the Marine Reserves Act 1971) or indeed a new, more comprehensive piece of legislation that can provide full protection to areas within the EEZ. It is noted that this was a matter on the legislative agenda of the National-led Government during the last term, and has been foreshadowed by then Minister of Conservation Hon Dr Nick Smith as a matter for priority within the forthcoming year.
- 168.** BPAs provide some protection of the seabed from bottom trawling, but they were created in a simplistic manner to preserve values against effects of fishing only. As noted above, this is recognised in Mr Clement's evidence whereby he records that areas set aside were chosen in a manner that minimised impacts on existing fishing activities.⁶¹ In this sense, the selection of areas to be set aside was self-serving for the fishing industry – it set aside areas that it did not fish without regard to other resource values.
- 169.** As a matter of law, we note that Parliament had the opportunity to prohibit other activities taking place in the BPA when it established the EEZ Act by preventing people applying for marine consents to disturb the seabed

60 Rowden, paras 31 - 33.

61 Clement, para 39.2.

within a BPA.⁶² Additionally, Regulations could have been created which prohibited all activities within BPAs.⁶³

Seabirds

- 170.** The risk of adverse effects on sea birds on the Chatham Rise from mining is very small. The risk relates to an increased chance of bird strike from one additional vessel being present on the Rise for the days where the vessel is at sea (approximately 80% of the year including transiting to and from port). In comparison to the effects on seabirds from fishing and fishing vessels, the adverse effects on sea birds from mining, if any, are likely to be negligible.
- 171.** Again, the context is important when assessing the reasonableness of concerns expressed. Fishing vessels and other commercial shipping traverse the Chatham Rise subject to no controls (other than standard maritime transport and navigational requirements). The risk of effects due to the proposed mining vessel is very low in the existing context, given that there will be no by-catch or biological material to attract birds to the mining vessel.
- 172.** Vessel strike is a low cause of mortality from fishing activities and therefore it is unlikely that an additional vessel would have a significant effect on seabirds.
- 173.** Dr Thompson records that over the last seven years within FMA4⁶⁴ there were only three observed vessel strike bird mortalities out of a total of 120 sea birds returned dead as fishery by-catch.⁶⁵ This is in the context of thousands of fishing events which take place on the Chatham Rise each year.⁶⁶ Throughout the whole EEZ, vessel strike represented a maximum of 3% of the total number of birds mortalities throughout.⁶⁷ This involves vessels which are both likely to attract seabirds because of food sources

⁶² The Parliamentary Commissioner for the Environment submitted that BPAs should be offered full protection from activities that impact the sea floor but Parliament did not accept that submission (see page 14 of the PCE's submission).

⁶³ Section 29 the EEZ Act provides a power for the Minister to make regulations that prohibit activities.

⁶⁴ FMA4 is the Fisheries Management Area which covers a large part of the Chatham Rise, including the proposed marine consent area and the Chatham Islands.

⁶⁵ Thompson, para 3.

⁶⁶ See O'Driscoll & MacGibbon (response 38 and 39).

⁶⁷ Thompson, para 26.

(fish) and which do not incorporate the lighting effect mitigation measures proposed by CRP.

- 174.** Dr Thompson notes that the numbers of birds killed through incidental catch either by fishing gear or entanglement is likely to be much higher than the recorded figures. Dr Thompson states that across the entire EEZ it is estimated that a total of 3,224 sea birds were captured across all fisheries, however in the same fishing year only 381 sea birds were observed killed and returned for autopsy.⁶⁸
- 175.** In comparison, the risk of entanglement of seabirds with the riser and sinker pipes is likely to be very low. There is no reason why seabirds would be attracted to the mining equipment towed by the mining vessel, which will be travelling very slowly. Therefore, the risk of CRP's mining operation increasing sea bird mortality is very low compared to existing activities on the Chatham Rise.
- 176.** Despite this, CRP is proposing a range of best practice mitigation measures which are both prudent and reasonable, and reflect current knowledge. They include minimised lighting and use at night, and using green lights where practicable, with a mechanism to adjust lighting practices if other measures are found to be more effective. The additional measures and controls sought by submitters are unnecessary and unreasonable in the circumstances, and disproportionate to the risk posed by CRP's proposal.
- 177.** The mitigation measures are set out in the draft lighting management plan in Appendix 35 to the EIA and are discussed in Dr Thompson's evidence at paragraphs 36 to 39. CRP is unaware of other maritime users on the Chatham Rise adopting similar practices for night time lighting yet the incidence of vessel strike is low from many vessels operating on the Chatham Rise and throughout the EEZ year round.
- 178.** CRP has also proposed that staff on the vessel are trained in seabird observation and handling.⁶⁹ There is no need for independent observers,

⁶⁸ Thompson, para 25.

⁶⁹ The trained observers will be regular staff trained in sea bird observation and recovery procedures.

as some submitters have suggested. CRP has also proposed an adaptive management condition for bird strike, which is discussed below.

Marine mammals

- 179.** It is Mr Cawthorn's evidence that the marine consent area has no particular significance for marine mammals and is primarily used by transiting species. It is clear that the flanks of the Chatham Rise are important foraging grounds for a number of species. This is not the case for the crest of the Rise.
- 180.** Mr Cawthorn has concluded that the risk of injury or mortality from ship strike while the mining vessel is operating is very unlikely given the slow speed at which the mining vessel will move (approximately 1 knot). He also notes that the risk of marine mammal strike while the vessel is in transit is no different to that for a fishing vessel operating on the Chatham Rise.
- 181.** Mr Cawthorn concludes that the risk of entanglement from the mining operation is very low for small marine mammals on the Chatham Rise and larger mammals transiting the Rise.⁷⁰ This is because the cables will be under tension, and entanglement is predominant when lines (from fishing gear and crayfish pots) are loose.
- 182.** Mr Cawthorn notes that potential noise effects on marine mammals are also low and would only occur if the marine mammals were close to the mining vessel for an extended period of time. In Mr Cawthorn's experience this is unlikely. Mr Cawthorn concludes that:
- The potential for prolonged overlap of marine mammals with the proposed mining operation is in my opinion low, the percentage of marine mammal populations that might be affected is small to negligible, and the impacts are recoverable and unlikely to affect marine mammal species at the population level.
- 183.** Dr Ketten, who is a world expert in sound effects on marine mammals, will cover potential effects on marine mammals in her evidence.

⁷⁰ Cawthorn, paras 46-51.

- 184.** Mr Cawthorn has recommended that a mitigation zone is good practice, despite the low environmental risk of any adverse effect on marine mammals. Mining will not start if marine mammals are observed within 200 m of the mining vessel.⁷¹
- 185.** The Crown has suggested that CRP's application should have included systematic observational surveys or passive acoustic monitoring for marine mammals and that incidental sightings are inadequate. It is Mr Cawthorn's view that systematic surveys would be impractical, unnecessary and disproportionate to the potential effects from CRP's proposed operation. Additionally, it is Mr Cawthorn's view that existing data for marine mammals is vast and adequate.⁷² The operational procedures proposed for the project reflect environmentally responsible, best practice for marine projects. It is unlikely that systematic observations would result in changes to them.
- 186.** CRP has proposed training vessel staff in marine mammal observation under the supervision of DOC. These measures are entirely appropriate in light of the low risks associated with CRP's proposal.

Cultural effects

- 187.** Ngai Tahu,⁷³ Moriori, and Ngati Mutunga are the iwi and imi whose rohe includes parts of the Chatham Rise. Other interested iwi and hapu groups have also submitted on the proposal. Ngai Tahu and Ngati Mutunga have prepared cultural impact assessments.
- 188.** CRP understands core aspects of the cultural interests relate to:
- (a) fishing interests;
 - (b) potential effects on whales and seabirds and their habitats;
 - (c) potential effects on cultural heritage and whakapapa, which includes potential effects on whale fossils;

⁷¹ Proposed condition 11, Appendix A of Ms Taylor's evidence.

⁷² Cawthorn, paras 72 - 75.

⁷³ It appears that Ngai Tahu's takiwa is to the west of the marine consent area

- (d) potential effects on the mauri/ecosystem of the Chatham Rise;
and
- (e) potential effects on rangatiratanga and kaitiakitanga.

- 189.** This section of submissions must be considered in light of CRP's position on existing interests. Overall, while the cultural interests are not disputed, it is submitted that they do not qualify as an existing interest.
- 190.** To the extent that cultural interests are related to fishing concerns, there should be little basis for concern given the likely impacts on fish and fisheries. There will be no effects on the Chatham Islands paua, rock lobster or eel fisheries.⁷⁴ Although the Chatham Rise as a whole is obviously important to Iwi and Imi (both culturally and commercially) it does not appear that there is any specific cultural importance placed on the proposed marine consent area, aside from the whale graveyard which CRP wishes to preserve.
- 191.** Ngai Tahu raised two specific issues in its cultural impact assessment regarding whales. These are potential effects on whale habitat and fossilised whale bone graveyards. As discussed above and set out in the evidence of Mr Cawthorn, there are unlikely to be any effects on whales through mining activity or habitat loss. CRP has also sought to protect the whale graveyard areas by reducing the proposed marine consent area and by including the known fossil locality within the reduced marine consent area in a mining exclusion area. Therefore, no effects on Ngai Tahu's cultural interests regarding marine mammals are expected.
- 192.** Concerns have been raised about an adverse impact on the mauri of the Chatham Rise from CRP's project. This is an issue for Iwi and Imi to advance, but it is noted that the scale of mining compared to the size of the Chatham Rise is small and, as discussed above, the operation will have no effect on primary productivity or water quality, and therefore will have little effect on the Chatham Rise ecosystem.

⁷⁴ EIA, pages 334-341, 370 and Appendix 31; MacDiarmid, statement of evidence; Part 1 of CRP's Statement of Response to the DMC's request for further information.

Economic issues

Economic Benefits

- 193.** CRP's proposal will have a positive impact on New Zealand's economy which will extend to all New Zealanders, not just those directly involved in the project.
- 194.** Mr Clough of NZIER modelled the benefits for New Zealand's economy from CRP's project using NZIER's computable general equilibrium (**CGE model**). The model is a sophisticated tool for investigating economic impacts. It is able to account for a comprehensive spectrum of economic factors such as resource scarcity (including labour shortages), foreign exchange implications and import/export substitution. Mr Clough considers the two key benefits of the model are that it:⁷⁵
- (a) captures linkages in the economy between the sector being studied and the rest of the economy; and
 - (b) allows for expanding demands and constrained production inputs to cause prices and resource allocations to adjust across the economy.
- 195.** At a world price of phosphate of US\$184 per tonne, Mr Clough calculated that the welfare gain to New Zealand would be \$130 million per year. Mr Clough describes this welfare gain as:⁷⁶
- The welfare gain of \$130 million per year represents an economic surplus to New Zealanders, comprising a producer surplus for New Zealand owners of CRP and other businesses that supply the project, and a consumer surplus from lower prices on imported consumption due to changes in exchange rates. Over 40% of that welfare benefit accrues to New Zealanders who are not directly involved in CRP but gain from the flow-on effect.
- 196.** In light of the reduction in the world price of phosphate, Mr Clough re-ran the model at a price of US\$108 per tonne which led to welfare gains of \$110 million per year.

⁷⁵ Clough, paras 21 - 26.

⁷⁶ Clough, para 31.

- 197.** The real benefit to GDP at a price of US\$184/ tonne is \$280 million per annum and at \$108/ tonne it is \$229 million.
- 198.** Dr Nana of Berl reviewed Mr Clough's modelling work and has confirmed its appropriateness and application for this project.⁷⁷
- 199.** CRP's proposal will have a number of other benefits for New Zealand that will also have an economic value which are discussed below.
- 200.** As set out in Mr Castle's evidence, there are a range of factors and qualities that are likely to influence the final price CRP will receive for its product. Its contract prices are likely to vary from the world price of phosphate. CRP is confident that its project has commercial advantages from being locally sourced and therefore subject to lower transport costs both within New Zealand and the Asia-Pacific region, and also from the unique qualities of Chatham Rise phosphorite (including but not limited to its low cadmium, suitability for direct application and its medium grade phosphate levels).

Opportunity cost of not mining

- 201.** An element of the balancing exercise for your decision is the opportunity cost of not mining the phosphorite deposit. This is discussed by Mr Clough in his evidence. Mr Clough discusses the trade-offs involved in not mining this area. In his evidence, using the lower world price for phosphate of \$108/tonne, an estimate of the opportunity cost of not mining the resource could be \$76,000 of GDP lost per hectare for each of the 15 years of mining.⁷⁸
- 202.** Mr Clough recognises that there is a paucity of information in the value New Zealand places on environmental protection and the analysis above is simply a way of highlighting the trade-offs involved.⁷⁹ However, it is submitted that when taking into account the *net* effects of the proposal (including the mitigation and compensation measures) whereby the

⁷⁷ Nana, paras 10 - 44.

⁷⁸ Clough, para 39.

⁷⁹ Clough, paras 38 and 39.

conservation, fishing and ecosystem values of the Chatham Rise will be preserved, the opportunity cost of not mining the phosphorite resource on the small part of the Chatham Rise is greater.

Terrestrial environmental benefits

Reduced run off and other benefits

- 203.** Addressing New Zealand's declining freshwater quality is an issue of national importance highlighted by the recently amended New Zealand Freshwater National Policy Statement. Chatham Rise rock phosphate would be a useful tool in reducing run off in some circumstances while maintaining farm productivity.
- 204.** Reactive phosphate rock like Chatham Rise rock phosphate is sparingly water soluble. This means that it is essentially a "slow release" fertiliser compared to water soluble fertilisers like superphosphate (**SSP**).⁸⁰
- 205.** When Chatham Rise rock phosphate is applied as a direct application fertiliser (**DA**), considerable reductions in runoff compared to equivalent amounts of a water soluble fertiliser can be achieved.⁸¹
- 206.** Dr Mackay records in his evidence that, on a worldwide basis, the production and consumption of direct application phosphate rock is limited. Although DA is available in New Zealand, it attracts a premium price and its usage is low. A local supply of DA fertiliser could encourage its use which would potentially decrease run off from current farming practices.
- 207.** Dr Mackay has described a number of factors in choosing a phosphate fertiliser at paragraphs 52 to 65 of his evidence. Dr Mackay notes the potential benefits of using Chatham Rise phosphate for pastoral agriculture in New Zealand. Dr Mackay notes that there are millions of hectares of hill and steep land pasture soils where a sparingly soluble phosphate fertiliser is an agronomic option.

80 Mackay, para 36.

81 MacKay, para 33.

- 208.** Dr Mackay also notes that a sparingly soluble phosphate fertiliser could be useful for pasture systems where existing phosphate content is at the top of the pasture response curve. In these circumstances, a slow release phosphatic fertiliser could usefully "top up" phosphate levels without causing phosphate losses or short term uptake.⁸² Dr Mackay's evidence is that there are millions of hectares of dairy intensive land and cattle finishing systems where a close examination of current phosphate fertiliser practices would be warranted. This could be part of the solution to existing and emerging water quality issues as a consequence of more intensive agricultural land use.
- 209.** Dr Mackay describes that use of a sparingly water soluble phosphate fertiliser in soils with low anion storage capacity is an option for reducing risk of phosphate losses in run off and leaching compared with more soluble phosphate fertilisers.
- 210.** It is Dr Mackay's evidence that improvements in phosphate fertiliser management and farming practices will be a feature of future farming in New Zealand.⁸³ The unique qualities of Chatham Rise rock phosphate mean that it would form a very useful and highly beneficial tool to bring about improved farm practices.

Reduced cadmium accumulation in soil

- 211.** Cadmium is an unwanted trace element that accumulates in soil. At certain levels (as set out in Dr Mackay's evidence), cadmium can reduce or restrict land use and could even present a health hazard. Chatham Rise rock phosphate contains very low levels of cadmium compared with rock from other sources.
- 212.** Cadmium is present in all rock phosphate (and phosphatic fertilisers, like superphosphate) and cadmium levels in soil are increasing with use of fertilisers.

82 MacKay, para 62.

83 MacKay, paras 72 and 84.

213. Use of Chatham Rise rock phosphate as:

- (a) 100% of the feed stock into manufactured fertilisers such as superphosphate (SSP);
- (b) as a partial feed stock of SSP; and
- (c) direct application fertiliser,

would all result in fertilisers with lower total cadmium levels than are currently available which would slow cadmium accumulation in New Zealand soils. This would be particularly useful in areas where cadmium accumulation is greatest.

New Zealand's dependency on phosphate

214. Dr Mackay describes the importance of phosphate to New Zealand's agriculture.⁸⁴ It is a fundamental input into agriculture because New Zealand soils are by and large not naturally fertile. It is therefore a strategic resource of national importance given the heavy dependence of the New Zealand economy on agricultural production.

215. New Zealand currently imports 100% of its phosphate which amounts to at least 770,000 tonnes per year.⁸⁵ Dr Mackay records that, like oil, phosphate rock and processed phosphate fertilisers can be subject to sharp price rises due to offshore events in less than 12 months. CRP's project offers New Zealand its first chance of having a local source of rock phosphate which offers New Zealand security of supply and makes smaller shipments economic.⁸⁶ This has strategic benefits for New Zealand, should overseas events cause unexpected sharp increases in price and reduced accessibility of rock phosphate. This is important because the current situation exposes New Zealand to geopolitical risks in Morocco.⁸⁷

⁸⁴ MacKay, paras 15-17.

⁸⁵ Castle, paras 27 - 28. Industry sources have advised Mr Castle that the actual imported tonnage could be closer to 1 million tonnes per year.

⁸⁶ Castle, para 30.

⁸⁷ Castle, para 29.

Uranium accumulation in soil

- 216.** The Crown raised the issue of uranium accumulation in soil in its submissions. Uranium can have a toxicological or radiological effect. Dr Bull and Dr Mackay discuss uranium accumulation in New Zealand soil from the use of Chatham Rise rock phosphate in their evidence.
- 217.** The scientists agree that uranium accumulation from Chatham Rise rock phosphate use in New Zealand will not lead to adverse effects. The issue of uranium accumulation in New Zealand soils is not new, rather it has not been a matter which has attracted much attention. Uranium is naturally occurring and is a component of existing fertiliser use. With respect, while it has been raised in the context of CRP's proposal, the development of policy and/or regulation to address the factors affecting soil quality is a matter for Parliament as currently uranium accumulation is not managed in New Zealand. It is not a matter that needs to be visited on CRP.

Improvements in scientific understanding

- 218.** CRP's project has already led to significant advances in the understanding of the Chatham Rise. Examples include:
- (a) use of Zonation as part of a spatial planning exercise on the Chatham Rise. CRP's approach is an example which could be used in an EEZ-wide spatial planning approach to managing activities within the EEZ in the event that Parliament decides that this is warranted (for example, through proposed Marine Protected Areas legislation);
 - (b) the update and use of the first trophic model for the Chatham Rise;
 - (c) updating and refining data on commercial fishing distribution and spawning fish, which will no doubt be of direct benefit to the fishing industry;
 - (d) improving the understanding of benthic habitats and organisms on the crest of the Chatham Rise; and

- (e) improving the understanding of the geological and oceanographic features of the Chatham Rise.

219. All of this information is freely available and CRP has encouraged its research team to use its project related research on their own studies.

220. If the project proceeds, further valuable research will be undertaken. This includes:

- (a) validating sediment plume modelling including collection of uniquely detailed long term physical oceanographic and suspended sediment data;
- (b) validating the habitat predictive modelling (described by Dr Rowden);
- (c) collecting further information on natural particle fluxes and turbidity on the Chatham Rise;
- (d) research into light configurations to avoid seabird strike (which could potentially be applied by fishing industry and other marine users),

as well as "exportable" expertise and intellectual property in a number of fields. This is could be important, given that further dredging projects are proposed around the world.

ANALYSIS OF SECTIONS 59-64 OF THE EEZ ACT

221. Sections 59 and 60 set out mandatory considerations for your decision. We do not intend to traverse every consideration individually because they are largely self-explanatory and have been discussed in the EPA's three previous marine consent decisions.⁸⁸

222. Section 59(2) lists a number of matters which you must "*take into account*". Section 59(3), (4) and (5) use a different term: "*must have regard to*". We agree with the analyses in the previous three marine

⁸⁸ *Trans-Tasman Resources Ltd* Marine Consent Decision; *OMV Ltd Whio - 1* Marine Consent Decision; *Shell Todd Oil Services New Zealand Ltd Ruru-2 and Maui-8* Marine Consent Decision.

consent decisions that there is no practical difference between the two phrases. Both set mandatory considerations. The importance of each consideration will vary depending on the facts and evidence relating to each application.

223. As has also been observed in the previous EPA decisions, there is no internal hierarchy within section 59(2). However, in section 59(d)(ii) and (e), emphasis is placed on protecting sensitive aspects of the environment through the inclusion of the words "*the importance of*".

224. Although some emphasis is placed on these two considerations, they do not amount to blanket protection. If Parliament wished to impose blanket protection of sensitive parts of the environment, it would have done so. Instead, it is submitted that the manifestation of the importance of these considerations is through the duty in section 61(2) where you are to favour caution and environmental protection where information is uncertain or inadequate. However, that duty is linked to section 61(3) which requires you to consider whether an adaptive management approach would allow that activity to be undertaken if the section 61(1) analysis means that an application is likely to be declined.

225. Section 59(2)(a) and (b) refers to "effects on the environment...". Environment is broadly defined by the Act as:⁸⁹

Environment means the natural environment, including ecosystems and their constituent parts and all natural resources, of

- (a) New Zealand;
- (b) the Exclusive Economic Zone;
- (c) the Continental Shelf;
- (d) the waters beyond the Exclusive Economic Zone and above and beyond the Continental Shelf.

226. This definition is broader than the definition of "natural resources". It is however much narrower than the RMA's definition of "environment" and only refers to the "natural environment". It also does not incorporate reference to people and communities or social and cultural considerations.

⁸⁹ EEZ Act, s 4.

As mentioned earlier, the purpose of the Act is sustainable management of natural resources. "Natural resources" are defined as:⁹⁰

Natural resources:-

- (a) in relation to the Exclusive Economic Zone, includes seabed, subsoil, water, air, minerals, and energy, and all forms of organisms (whether native to New Zealand or introduced); and
- (b) in relation to the Continental Shelf, means the mineral and other non-living resources of the seabed and subsoil sedentary species.

227. The effect of the distinction between the definitions of "environment" and "natural resources" which are to be managed under the Act is that, while you must take into account the effects on the environment (as defined) in reaching your decision, the Act does not intend you to *manage* the effects on the environment except where they fall within the definition of natural resources.

228. There is good reason for this distinction which is best demonstrated by an example. Consider the effects on land, such as uranium accumulation in soil, and health and safety associated with for processing Chatham Rise Rock Phosphate which are discussed in the Crown's submission.⁹¹

229. First, these matters are addressed under other more specific legislation by different authorities with particular expertise in the subject matter. Secondly, CRP itself will not process or apply fertiliser made from Chatham Rise phosphorite to New Zealand soils. It would be inappropriate for you to attempt to impose conditions on CRP in relation to matters such as fertiliser application to soil, which are both beyond CRP's control and are dealt with by other statutory schemes.

230. This is recognised in section 63(4) which places a restriction on the EPA imposing conditions to deal with effects that would conflict with a measure required under other marine management regimes⁹² or the Health and Safety in Employment Act 1992. In our submission, it goes without saying that this applies to terrestrial and inshore statutes such as the RMA.

⁹⁰ EEZ Act, s 4.

⁹¹ Crown submission, Part 1, paragraphs 45 – 61.

⁹² Marine management regimes are defined in s7 of the EEZ Act.

- 231.** Section 62 provides the power for you to either grant (in whole or in part) or refuse an application for consent. Similar to the position under RMA, it is submitted that it is implicit within this power that you may also issue interim decisions. The powers to make decisions in the RMA are worded in a similar manner to section 62 of the EEZ Act which indicates that the power to issue interim decisions is equally available in the EEZ Act.⁹³
- 232.** Interim decisions are regularly issued under the RMA and are a way of recording your findings on a number of matters, but allowing the applicant to work through any outstanding conditions/issues before issuing a final decision. An interim decision would give you an opportunity to determine any final matters before consent is granted. It is acknowledged that an applicant would most likely need to consent to an extension of statutory timeframes given the effect of section 68 of the EEZ Act.
- 233.** Section 63 contains a broad power for you to impose conditions. We have already mentioned the limitations of that power in section 63(4).

INTERNATIONAL CONVENTIONS

- 234.** Some international conventions have been raised by submitters and in evidence. However it is submitted that the suggestion that you are to required consider or apply these conventions is incorrect in law.
- 235.** Section 11 of the Act addresses New Zealand's obligations under the various international conventions it is party to. Section 11 states:
- This Act continues or enables the implementation of New Zealand's obligations under various international conventions relating to the marine environment, including –
- (a) the United National Convention on the Law of the Sea 1982;
 - (b) the Convention on Biological Diversity.
- 236.** Section 11 applies to all of New Zealand's international obligations under international conventions, not just those listed in (a) and (b). This section is discussed in the EPA's three previous decisions. For example, the *Shell*

⁹³ See sections 104A, 104B, 104C and 104D of the RMA.

Todd Oil Services New Zealand Ltd Ruru-2 and Maui-8 Marine Consent
Decision states:⁹⁴

New Zealand's international obligations do not require additional considerations to be applied in addition to the decision making criteria and information principles contained in the EEZ Act. This is because those international obligations are already in part encapsulated in the principles of the EEZ Act.

- 237.** This statement is entirely accurate and reflects the status of international conventions in New Zealand law. New Zealand's international obligations do not become domestic law unless they are expressly incorporated into domestic legislation. The Court of Appeal in *New Zealand Airline Pilots Association Inc v Attorney-General* summarised the position as follows:⁹⁵

... it is well established that while the making of a treaty is an Executive act, the performance of its obligations, if they entail alteration of the existing domestic law, requires legislative action. The stipulations of a treaty duly ratified by the Executive do not, by virtue of the treaty alone, have the force of law.

- 238.** The position is emphasised by the difference in wording of section 11 between what was first put forward in the EEZ Bill. Clause 11 of the EEZ Bill read:

This Act must be interpreted, and all persons performing functions and duties or exercising powers under it must act, consistently with New Zealand's international obligations under the Convention.

- 239.** Had clause 11 been passed into law without amendment, it would have been appropriate to refer and apply New Zealand's international obligations in your decision. However, Parliament deliberately decided against this approach.

- 240.** In summary, by making your decision in accordance with the EEZ Act you will have implemented New Zealand's international obligations. The parts of submissions and evidence which refer to the conventions should be put aside.

⁹⁴ Para [85].

⁹⁵ *New Zealand Airline Pilots' Association Inc v Attorney-General* [1997] 3 NZLR 269 (CA) at 280-281.

ADAPTIVE MANAGEMENT

- 241.** As noted earlier, it is not accepted by CRP that the only way that the DMC can grant a marine consent is by adopting an adaptive management approach in terms of section 61(3). Ms Taylor's evidence is that there is adequate and sufficiently certain information in the application such that it is not necessary to rely on adaptive management. Rather, it is being volunteered by CRP as an appropriate and responsible environmental management approach, and the concept is inherent in the application itself.
- 242.** Section 64 provides the power to use adaptive management approaches in granting consent. Section 64(2) lists two examples of what adaptive management is under the EEZ Act. The examples are not exclusive and therefore adaptive management can include other approaches to managing risk.⁹⁶
- 243.** Adaptive management in New Zealand's EEZ must reflect the particular context in which activities take place, as well as the EEZ Act itself. Guidance about adaptive management under the RMA from case law and other documents (such as the New Zealand Coastal Policy Statement) is not necessarily transferrable in this context.
- 244.** The EEZ Act has its own legislative provision about adaptive management and the environment where activities that are the subject of marine consent applications must be reflected in establishing adaptive management responses. As has been submitted earlier, the context is important. The very nature of activities within the EEZ will mean that different approaches are appropriate to those in a terrestrial or inshore setting, given the distance from shore, depths and environments where activities take place, and the available information about those environments.
- 245.** Reference has been made in evidence to adaptive management under the RMA, particularly the Supreme Court's decision in *Sustain our Sounds*

⁹⁶ See the discussion about in relation to inclusively drafted definitions in the context of the definition of "existing interest".

Incorporated v The New Zealand King Salmon Company Limited.⁹⁷ It is submitted that the Supreme Court's decision provides useful background information and guidance about adaptive management because it summarises RMA and some overseas case law on the topic.⁹⁸ However, the discussion is made in the context of a different statutory regime, physical environment, and activity and it is therefore neither directly applicable nor binding in terms of the EEZ Act regime and this application.

246. While reliance has been placed on *Sustain our Sounds* by submitters and witnesses, it is submitted that on the facts of that case, there was greater uncertainty about the receiving environment and extent of effects than in for CRP's proposal, yet the Supreme Court concluded that an adaptive management approach was appropriate. Therefore, if adaptive management was appropriate in *King Salmon*, it is certainly appropriate for this proposal.
247. In any event, the EEZ Act is a code when dealing with the issue of adaptive management, with section 64 itself being the proper starting point for considering its application.
248. Section 64(1) provides you with a power to incorporate an adaptive management approach into a marine consent.
249. Section 64(2) sets out two examples of what an adaptive management approach can be. The first example relates to allowing the activity to commence at a small scale, which is impracticable for phosphorite mining on the Chatham Rise. The second example is more relevant to this application and is broadly framed to include any other approaches that allow the activity to start, provided monitoring can be utilised to monitor effects and the activity can be amended, continued or discontinued as necessary. Section 64(2) is set out in full below:

(2) An **adaptive management approach** includes-

- (a) allowing an activity to commence on a small scale or for a short period so that its effects on the

⁹⁷ *Sustain our Sounds Inc v The New Zealand King Salmon Company Ltd* [2014] NZSC 40, (2014) 17

⁹⁸ See paras [95] – [141].

environment and existing interests can be monitored:

- (b) any other approach that allows an activity to be undertaken so that its effects can be assessed and the activity discontinued, or continued with or without amendment on the basis of those effects.

- 250.** Section 64(3) permits you to use conditions to incorporate an adaptive management approach so that the management of the activity can be done in "stages".
- 251.** Section 64(4) clarifies that the "stages" referred to in section 64(3) can relate to the duration of the consent, the area or which consent is granted, the scale and intensity of the activity, or the nature of the activity.
- 252.** As discussed above, one of CRP's adaptive management approaches relates to the area in which consent is granted: mining is restricted to the MPA for at least the first five years unless the requirements in proposed condition 16 are met and CRP has obtained further mining permits. The requirements in proposed condition 16 require CRP to confirm its sediment plume model and effects.
- 253.** Ms Taylor discusses CRP's proposed adaptive management approaches in detail in her evidence. A core component of CRP's adaptive management approach concerns the sediment plume. Because the best available information on the plume results is from modelling (which was done on a conservative basis), CRP's risk reduction strategy contains appropriate monitoring (with defined thresholds) coupled with requirements to alter operations if any exceedances occur.⁹⁹ The adaptive management process includes reporting requirements to the EPA when a breach of the threshold occurs, and certification of CRP's proposed solution.
- 254.** It is submitted that this approach appropriately mitigates the risks in relation to the sediment plume, taking into account the nature of the activity, the impact assessment, and conservatism used in the sediment modelling.

⁹⁹ Taylor, para 106.

- 255.** A similar approach is proposed for effects on seabirds. CRP has set defined triggers (two or more seabirds killed or injured in one month, and if a Chatham Island taiko or Chatham Petrel is killed or injured at any time) which then require CRP to notify the EPA and DoC, and assess and implement measures to prevent further bird strike. Those measures would also be subject to the EPA's certification.
- 256.** A "catch-all" adaptive management condition has also been proposed. It follows the same structure: identification of an unexpected effect and report it to the EPA following by assessment and implementation response(s), with the EPA certifying the responses.

CONDITIONS

- 257.** CRP's proposed conditions are discussed in Ms Taylor's evidence and a revised set of conditions is annexed to her evidence. The revised conditions have sought to address a number of matters raised in submissions, as set out in Ms Taylor's evidence.
- 258.** Subsequently, a number of conditions have been suggested in the evidence of witnesses for submitters, and have been discussed through witness conferencing. An updated set of conditions has not been produced as CRP will need time to consider the various suggestions and determine its view on their reasonableness, necessity, feasibility, and operational implications. Therefore, it is proposed that updated conditions will be produced at various times as the hearing process continues.
- 259.** With regard to legal issues relating to conditions, adaptive management has been discussed earlier and will not be repeated. Otherwise, it is submitted that general principles derived from RMA decision-making will provide useful guidance for the DMC in considering conditions.
- 260.** The principles from the *Newbury* test are well known. The power to impose conditions on a consent is not unlimited. To be valid at law, a condition must:
- (a) be for a valid purpose, not for an ulterior one;

- (b) fairly and reasonably relate to the development authorised by the consent to which the condition is attached; and
- (c) not be so unreasonable that a reasonable planning authority, duly appreciating its statutory duties, could not have approved it.

261. Given some of the suggestions made by some of the witnesses for submitters, the reasonableness of conditions is a central concern for CRP. It is submitted that a condition requiring the applicant to take measures beyond what is required to mitigate effects caused by an activity, would be unreasonable.¹⁰⁰ Obviously this RMA principle is tempered by the fact that the EEZ Act does provide specific powers to impose marine consent conditions in sections 63 to 67, but it is submitted that the nature of those conditions are not in any way inconsistent with the legal principles outlined above.

262. Finally, and noting that it is subject to the DMC's power to impose adaptive management conditions, a condition cannot be imposed that would nullify the grant of a consent.¹⁰¹ Bearing in mind the investment required in order to commence mining operations in reliance on the marine consent, if the DMC is inclined to grant a consent then it is submitted that care needs to be taken to ensure that conditions do not render the consent practically impossible to implement. We note again at this point that the use of an interim decision might be one way to ensure that issues around the workability of conditions could be addressed.

CONCLUSION

263. The CRP proposal is one that provides benefits to New Zealand, for a wide range of reasons. The quality and depth of information before the DMC is more than adequate to enable consent to be granted, even bearing in mind that the marine consent area is over 450 km from the New Zealand mainland and 250 km from the Chatham Islands.

¹⁰⁰ *D R Sampson v Waikato Regional Council* NZEnvC Auckland A178/2002, 2 September 2002 at [84] citing *Housing New Zealand Limited v Waitakere City Council* [2001] NZRMA 202 (CA).

¹⁰¹ *Lyttelton Port Company Ltd v Canterbury Regional Council* NZEnvC Christchurch C8/2001, 26 January 2001 at [11].

- 264.** It strikes an appropriate balance between the economic use and development of a strategic resource of national significance, and ensuring that the effects and risks associated with that use, are appropriately and responsibly managed. It is submitted that the proposal readily meets the sustainable management purpose of the EEZ Act.
- 265.** The legislation is fundamentally enabling and is an economic development statute, which incorporates protection for the natural environment. If, however, the DMC concludes that this project cannot be granted consent because of uncertainty resulting from a lack of data, then it is difficult to imagine that any other seabed mining project in New Zealand's EEZ could be consented. That cannot be the intended consequence of this legislation.

Dated 24 September 2014

J G A Winchester / H P Harwood
Counsel for the applicant

APPENDIX A – EPA STAFF REPORT AND UPDATED STAFF REPORT

1. CRP reserves its position in respect of the DMC's direction in Minute 15 that an updated EPA staff report be prepared.

Application for delay to the updated EPA staff report

2. Without resiling from its concerns about the direction which it will address in further detail below, CRP respectfully seeks and makes an application to the DMC for a direction that the updated EPA staff report, if it is to be produced, is delayed so that it precedes the evidence to be given by the various evaluative witnesses on 10 November. It is submitted that this would be a far more logical time and place in the hearing for this report to be produced, rather than midway through the process when some of the key witness caucusing is unlikely to have been completed.
3. Notwithstanding its views about the value and role of an updated report, it is submitted it would be fairer to CRP and submitters, and of more assistance to the DMC if an updated staff report was able to be based on the most up-to-date information before the conclusion of the hearing. Obviously, in accordance with the principles of natural justice and fairness, CRP would wish to reserve its right to test the authors on aspects of the report if it considered that necessary.

Wider concerns regarding the EPA staff report and process

4. In CRP's view, it is apparent that there are difficulties in this statutory process with EPA staff reports. There is a question mark over whether staff reports are necessary or were intended by Parliament, given there is no specific provision in the EEZ Act that addresses staff reports unlike the RMA which includes express provision for similar reports.¹⁰²
5. In addition, this lack of statutory guidance is problematic in that the EPA itself can direct the preparation of a staff report, determine internally how that report will be prepared, what style it will take, who it will be authored by, whether it will reach conclusions or make recommendations, and when it will be issued. All of that can (and in this case, did) happen before the

¹⁰² See section 42A of the RMA.

DMC was appointed and given delegated authority to run the rest of the process and make a decision. The result is that the DMC is obliged to have regard to a report that it may not have wanted and did not have any influence over its style, content, timing and approach.

6. With respect, that is not a sensible process and does not necessarily assist the DMC with its decision-making. It is also not particularly fair on applicants or submitters.
7. Leaving aside the process concerns, the value of staff reports in an application like CRP's, where applications are publicly notified and will go to a hearing, is perhaps more limited than applications which do not attract as much interest or will not be notified. In this instance, there is substantial expert evidence and opinion from a variety of submitters (including the Crown) on virtually every important matter.
8. The questionable value of a staff report in this context is particularly apparent because the expertise of authors of the staff report is not recorded and, quite reasonably, cannot be expected to be equivalent to the specialists before you. Accordingly, the staff report is limited to evaluating the evidence of others. But even as an evaluative exercise, it is limited because the qualifications and expertise of its authors is unknown, the authors have not confirmed they complied with the code of conduct, and the authors cannot be tested on their findings. It is entirely possible that, in preparing staff reports, the authors misunderstood aspects of the project which influenced their opinions and findings. This was evident in a number of aspects of the first staff report. That report is now even further out of date than it was when issued, and overtaken by subsequent information and events that the DMC can give it little to no weight.
9. Consequently, staff reports are inherently unreliable in this process and in CRP's view it would be an error to rely on a finding in a staff report which was inconsistent with expert evidence before you, or place weight on any findings in it. Put simply, in the circumstances it is unfair for a staff report to be reaching conclusions and making recommendations.
10. In relation to the suggestion that a second staff report be produced, CRP has previously advised that it would object to commission of that report.

CRP has made inquiries with the EPA as to what form a second report would take, particularly whether it would include conclusions and recommendations as to your final decision. The most recent advice from the EPA, received earlier this week, is that CRP should proceed on the assumption that the report will reach firm conclusions and make recommendations.

- 11.** CRP is yet to make its final decision on whether it will object and, as noted earlier, reserves its position pending the DMC's determination of a request for a delay. However, the concerns set out in paragraphs 4 and 5 of CRP's eighth memorandum of counsel dated 9 September 2014 remain. It is CRP's view that this process and your decision must be guided by the expert evidence, and that a further staff report represents a distraction rather than guidance or value for the process and your decision. There are also concerns about fairness and natural justice which remain unresolved with regard to the proposed second staff report.