The Real Oil on Seabed Mining

Dr Mike Patrick
Chatham Rock Phosphate
The Chatham Rise
CRP Licence - MPL 50270

- a CSA licence which also covers environmental matters
- covers an area of 4,726 km² on the central Chatham Rise ~600 km east of Christchurch
- contains shallow seafloor deposits of rock phosphate nodules and other potentially valuable minerals (e.g., glauconite)
- mining licence and “marine consent” applications later 2012/2013
- mining to commence Q1 2015, ~400 km²
- 11 M tonnes of seafloor/yr = 1.5 M tonnes nodules/yr
Geological Setting

Formed 7-12 million years ago by current action on limestone seabed

Deposit on seabed surface in 1 metre layer of fine sandy silt

Nodules 2-150 mm in size and form about 13% of seabed layer volume
Process

• “conventional” trailing suction hopper dredge but.....

• 350-450 m water depth

• mining seabed down to ~70 cm and separating nodules from sand on-board

• return “tailings” back into mined areas

• 9-10 day cycle
Vessel Details

- Gross Tonnage: 33,423t
- DWT: 24,000t
- Length: 230.71m
- Breadth: 32m
- Hopper Capacity: 35,500 cubic metres
- Max Draft (Intl Loadline): 10.38m
- Max Draft (Dredge Loadline): 13.67m

But what port??
ENVIRONMENTAL ISSUES?

- removing the seabed and associated biota
- sediment plume generation and migration, potential impacts on deepwater fisheries
- marine mammal and seabird impacts
Trans-Tasman Resources

TTR was established in September 2007 to explore and develop the iron ore deposits (iron sands) off the west coast.

TTR has:

1. Held Crown Minerals Act prospecting permit in NZ territorial waters (#50383) of 6,319 km² (yellow areas) and
2. Holds Continental Shelf Act prospecting licence (#50753) of 3,314 km² in EEZ (blue area).
3. TTR’s CMA prospecting permit has expired and applications for exploration permits in that area have been lodged. One application permit in the South Taranaki Bight has been approved.
TTR’s Activities

Currently TTR is:
• prospecting within its CSA licence & CMA exploration permit areas; and

• carrying out environmental studies to support RMA resource consents & possible EEZ legislation consents for mining in the South Taranaki Bight
TTR’s Proposed Mining

- using trailing suction hopper dredges operating 24/7 and off loading the sediment to a ......

- floating storage, processing and offloading vessel where the iron-concentrate is to be separated from the non-iron sands and stored, prior to ......

- transhipment to an export vessel

- ~ 10 X larger than Chatham Rock Phosphate
ENVIRONMENTAL ISSUES?

- as per Chatham Rock Phosphate plus......
- blue whales?
- electricity needs
- AND WAIT, THERE’S MORE!! A new Minister of Con and..............................
COMMON ISSUES??

- EEZ Act timing vs Continental Shelf Act - BUT
- Crown Minerals (Permitting & Crown Land) Bill
- EEZ Act transitional provisions & double jeopardy
If the activity is classified as ‘discretionary’, it will require a marine consent before it starts.

Minerals

Is it prospecting and exploration, or mining?

Mining

Prospecting and exploration

Has the activity started yet? (when the Act comes into force)

No

Yes

Activity can continue for six months, and if a consent is applied for within that time, until the consent is decided. (s 163)

Was a Continental Shelf Licence granted before commencement of the EEZ Act?

No*

No licence or a permit rather than licence

Yes

Activity can commence and continue for the life of the Continental Shelf Licence. (s 165)
Offshore Oil and Gas
[aka the boys toys bit]
Where?

• interest in most offshore regions around NZ but......

• exploration activity over next 2 summers in Taranaki, Canterbury and GSB – 3-4 rigs (incl “deep-water”)

• only producing area still Taranaki
How?

• seismic data acquisition (and watch out for those cetaceans!!)

• drilling

• production
ISSUES??

• EEZ Act not really an issue because......

• most matters including environmental covered by other regimes (currently being improved)
  BUT........

• will the EEZ Act regime really be a gap-filling exercise or what????
Questions??