

# South Taranaki Bight (STB) iron sands mining project



TTR has lodged an application for marine consents and marine discharge consents to extract and process iron sand within the South Taranaki Bight. The application area covers 65.7 square kilometres of seabed 22-36 kilometres offshore, in waters between 20m and 42m deep. Using mature technology and processes, TTR proposes to extract and process up to 50 million tonnes of relatively shallow seabed material (on average 5m deep), from approximately a 5 square kilometre area per year, exporting up to 5 million tonnes of iron ore concentrate per year, for up to 35 years. The remaining de-ored sediment (around 45 million tonnes per year) will be returned to the seabed in the same area from which it was extracted, facilitating immediate rehabilitation.

## Frequently Asked Questions

### SCALE, SCOPE AND PERMISSIONS

#### 1 What are you doing in the South Taranaki Bight area?

TTR is developing a project that proposes the environmentally sustainable extraction of iron-bearing sand from the sea floor in the EEZ region of the STB.

#### 2 Why have you chosen the South Taranaki Bight area for seabed mining?

Mineral ore deposits occur as a result of the culmination of many geological conditions. The South Taranaki Bight is an area where a particular type of iron ore has accumulated and which can be extracted in an environmentally sound and economically viable way.

#### 3 What legal permissions do you have to mine the seabed and what is the scope you must work within?

There are two main permissions required. The first is a Mining Permit. The second is a Marine Consent.

#### 4 Have you consulted with iwi?

TTR developed and have completed a comprehensive consultation programme that provided open and inclusive consultation with all parties with existing interests, and other stakeholders.

In respect of South Taranaki Bight iwi, Ngati Ruanui hold mana whenua over the proposed permit area and Nga Rauru and Nga Ruahine have neighbouring interests. Te Tai-hau a uru Fishing forum is a collective of iwi from Muaupoko to Mokau who have commercial and customary rights and interests in the Exclusive Economic Zone (EEZ) outside the 12 nautical mile zone.

Te Atihau a paparangi and Ngati Apa are within the Wanganui District Council territorial authority where TTR propose to operate a geotechnical support base.

#### 5 Do you have plans to grow the scale of your seabed mining?

Mining can only occur within the permitted area. Any increase in scale will require obtaining the appropriate permits and consents.

#### 6 If so, what permits and permissions must you acquire to do so?

The permits and consents required are the same as for any area, new or extended, i.e. a Mining Permit and a Marine Consent. Areas within the 12 nautical miles territorial waters limit are subject to the Resource Management Act instead of the EEZ Act, which applies to areas outside the territorial waters limit.

#### 7 What is different about this application from your original one in 2013?

We have addressed the concerns raised by the EPA's Decision

Making Committee about our original application by undertaking further scientific studies to address the perceived gaps in the submission and to provide substantive and empirical data where scientifically based conservative estimates had been used previously.

### HOW

#### 8 How do you extract the iron ore from the sand and what equipment do you use?

Sand is extracted via a seabed crawler which pumps it aboard a processing vessel where the iron ore is separated magnetically from the sand. The clean, de-ored sand, approximately 90% of the extracted material, is redeposited to the sea floor relatively close to where it was extracted from, thereby allowing natural rehabilitation.

#### 9 Once you've extracted the ore, where does it go and how is it transported?

The ore is transferred from the processing ship by a trans-shipment vessel to a bulk ore carrier vessel for export. This process takes place entirely at sea. The ore is ultimately used for steel-making.

#### 10 How do you return the sand to the seafloor and are there any environmental risks with this such as creating plumes?

The sand is returned to the seafloor in a controlled manner through a pipe extending from the processing vessel to approximately 4m above the seafloor. This method minimises the pluming effect and our independent scientific research shows there will be minimal environmental impacts.

#### 11 Will your operations put anything into the water other than the natural materials you've extracted from the seabed?

No. The proposed operations use existing sand with the existing seawater, which are returned to the seabed without introducing anything new such as other chemicals.

### IMPACTS

#### 12 What research have you carried out to understand the viability and impacts of seabed mining in the South Taranaki Bight and where can people access the reports?

TTR has carried out extensive research, which has contributed significantly to the body of knowledge that New Zealand has on its environment. These studies address all aspects of the proposed operation and its impacts on the surrounding environment.

## 13 Will people be able to see and hear your mining operations from the shore?

The proposed operations will be over 20km offshore and will therefore not be heard or seen from shore by a casual observer.

## 14 What's it like on the seafloor where you'll be mining?

The seafloor in and adjacent to the proposed operations is a vast expanse of sand, rippled through wave and tide action, and with no significant features.

## 15 What impact will your mining have on the seafloor?

TTR's extraction process occurs in a sequence of blocks, by extracting a lane 10m wide and 5m deep on average. Residual pits and mounds that occur at the first and last lanes of a sequence are naturally levelled and filled by the action of the sea on the surrounding seafloor.

## 16 What impact will your mining have on marine mammals?

Scientific studies undertaken show that the proposed operations will have no more than a minimal impact on marine mammals present in the area.

Data from surveys and marine observers show relatively few sightings of cetaceans in the STB area.

In respect of the critically endangered Maui's Dolphin, the population has been surveyed many times since 2002 including annually by DoC from 2006 to 2013. Studies indicate that the dolphin inhabit the shallow, turbid water within 4kms from shore. This is consistent with population abundance surveys showing that their habitat is in the Auckland-Waikato regions, from Port Waikato to Kaipara Harbour.

## 17 What assurances can you give that your operations will have no negative environmental short or long-term effects?

The environmental monitoring and measurement limits in the consent conditions proposed by TTR have been based on environmental effects not exceeding the naturally occurring levels.

## 18 How will you track and measure environmental impact as your project progresses

TTR has developed an extensive Environmental Management and Monitoring Plan which forms part of the consenting conditions. This plan involves working in conjunction with other parties and details the monitoring process, objectives and levels of response required to mitigate effects.

## 19 If you finish mining, for whatever reason, can you confirm that you would leave the area in the state it was in before you started mining?

Key advantages with marine mining such as this, and unlike onshore mining, are that there is no removal of over-burden land, no buildings, roads, railways, bridges, gorges, drilling, blasting, power pylons, river diversions or tailings dams. This means that rehabilitation commences soon after sand re-deposition as the high energy environment and abundant, adaptive marine life quickly reclaim the seabed. Also, there is no infrastructure to remove at the end of the project life.

## 20 What will your mining mean for commercial fishing?

From a marine navigation point of view there will be little impact on commercial fishing because the proposed operations only occupy a relatively small, constantly moving area and have an exclusion zone around it similar to the existing oil and natural gas marine installations in the area.

Studies show that aquatic life forms in the STB area are well adapted and used to the existing high sediment content of the turbid waters.

## 21 Will your mining result in any impacts for other users of coastal waters, for example, recreational fishing, boaties and divers?

These recreational activities are generally near to shore, where there already exists high sediment content in turbid waters. Studies show that aquatic life forms in the STB area are well adapted to this high-energy environment. Studies show that the environmental effects of the project are indistinguishable from the existing background.

From a marine navigation perspective there will be little impact to coastal water users because the proposed operations will be over 20km offshore, and the operations themselves only occupy a relatively small, constantly moving, area and have an exclusion zone around the vessels similar to the existing oil and natural gas marine installations in the area.

## BENEFITS AND RELATIONSHIPS

### 22 How much money from your project stays in New Zealand?

Economic studies commissioned estimate that the direct spend of the proposed operations could result in increased employment of over 1,600 jobs and increased GDP of over \$150m p.a. to the New Zealand economy.

New Zealand also benefits from increased export earnings, mining royalties and corporate income tax paid to the Government.

### 23 What benefits will your business bring the New Zealand and, in particular, the local economies?

Economic studies commissioned by TTR estimate that the direct spend of the proposed operations in New Zealand will result in increased employment and GDP which will mostly occur in, and benefit, the Taranaki and Whanganui regions.

The proposed operations bring a new industry which is complementary to existing industries in the region. TTR's project requires the input from many supporting businesses which, in turn, also provides support to many other local businesses.

New employment and training opportunities in the area, such as TTR's, is important for communities retaining people or attracting newcomers.

### 24 How much will be invested in the Taranaki area?

A significant investment will be made in the Taranaki area because the proposed operations envisage that the processing vessel and the anchor handling and support tug will all be supported, maintained and provisioned from the Taranaki region. The geotechnical vessel and plant will be based in Whanganui.

## SAFETY

### 25 Are there other seabed mining operations around the world and what problems have there been?

TTR's technical advisor, De Beers Marine, based in Cape Town, South Africa, has been operating a seabed diamond mining operation off the coastlines of South Africa and Namibia for over 20 years without any environmental issues and using similar machinery to that which TTR proposes to use in the STB.

In response to concerns raised previously by stakeholders, in particular their concern that it might be an experimental concept, TTR facilitated a visit to DeBeers Marine in March 2015 for interested stakeholders.

### 26 What emergency management processes and procedures do you have in place?

As with any other coastal marine shipping operation in New Zealand, our operations will be governed by maritime legislation and we will comply with all relevant laws.