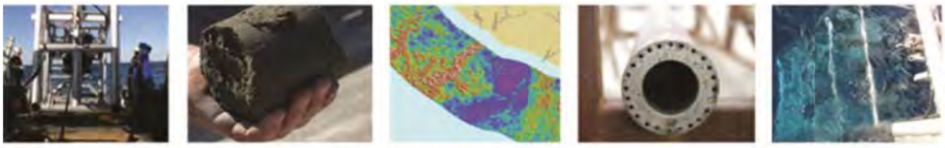
TTRL OFFSHORE IRON SANDS PROJECT

INTRODUCTION



INTRODUCTION

Trans-Tasman Resources Limited (**TTR**) intends to lodge a marine consent application in 2016 with the Environmental Protection Authority (**EPA**) under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (**EEZ Act**) for the recovery of iron sand from the South Taranaki Bight. This new application follows a previous application by TTR in 2013 / 2014, which was declined by a Decision-Making Committee (**DMC**) appointed by the EPA.

The purpose of this stakeholder engagement package is to provide information to key stakeholders on the iron sands project and the revised suite of environmental assessments that have been commissioned by TTR.

This stakeholder engagement package contains the following information:

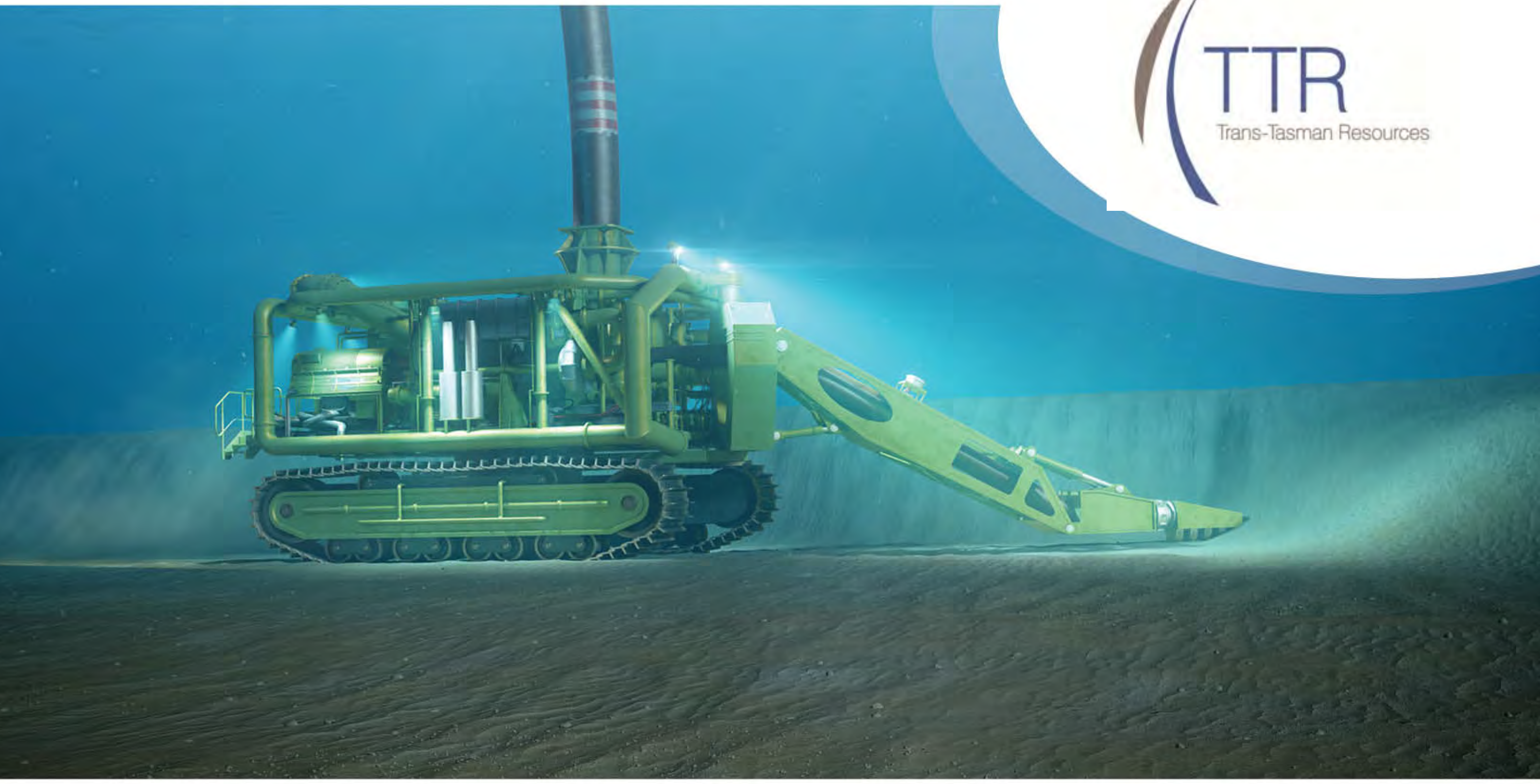
1. An overview of the additional science that has been commissioned by TTR with respect to the expected extent and density of the plume, including its effects on optics and primary production; and

2. An overview of the iron sands project, including the methodology that will be employed by TTR to recover iron sand from the seabed outside of the 12 nautical mile limit between Patea and Hawera; and

3. An overview of the projected economic benefits of the project.

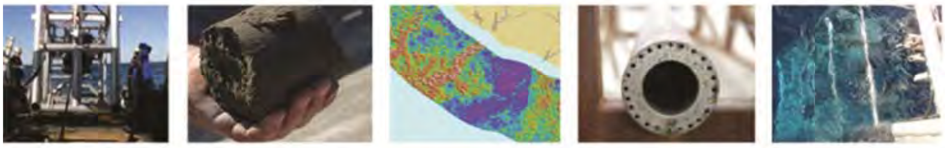
TTR is seeking that key stakeholders review the information provided in the stakeholder engagement package to obtain an understanding of the project and its predicted environmental effects. TTR will arrange meetings with key stakeholders to address any questions regarding the operation of the irons sands project and the results of the additional scientific information that has been commissioned. These meetings will commence in October 2015.

TTR is able to provide stakeholders with copies of the environmental assessments referenced in the stakeholder engagement package. However, the circulation of these assessments to key stakeholders will be contingent on agreement between TTR and respective key stakeholders regarding the protection of TTR's intellectual property.



TTRL OFFSHORE IRON SANDS PROJECT

PROJECT DESCRIPTION



1. INTRODUCTION

Trans-Tasman Resources Limited (TTR) is a privately-owned New Zealand registered company with its headquarters in Wellington. The company was established in 2007 to explore, assess and develop offshore iron sand deposits within New Zealand. It is committed to using world best practice to both maximise the efficiency of the sediment recovery and processing activities, while at the same time minimising any environmental effects.

2. THE PROJECT

TTR intends to seek marine consent from the Environmental Protection Authority (EPA) under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ Act) for the recovery of iron sand from an area of 65.76 square kilometres located outside the 12 nautical mile limit between Patea and Hawera (Figure 1).

TTR holds exclusive mineral rights over this area in accordance with Mining Permit 55581, which was granted by New Zealand Petroleum and Minerals in May 2014. The mining permit provides TTR with exclusive rights, under the Crown Minerals Act 1991 to recover iron sand from the area for 20 years.

TTR will be seeking all necessary marine consents under section 20 of the EEZ Act in order to authorise the iron sand recovery operation. The extent of the iron sand resource within the recovery area is shallow (generally no more than 11m deep below the seabed) but widely dispersed. The area provides sufficient space for project operations (including extraction, de-ored sediment re-deposition operations), anchor handling and potential grade control drilling.

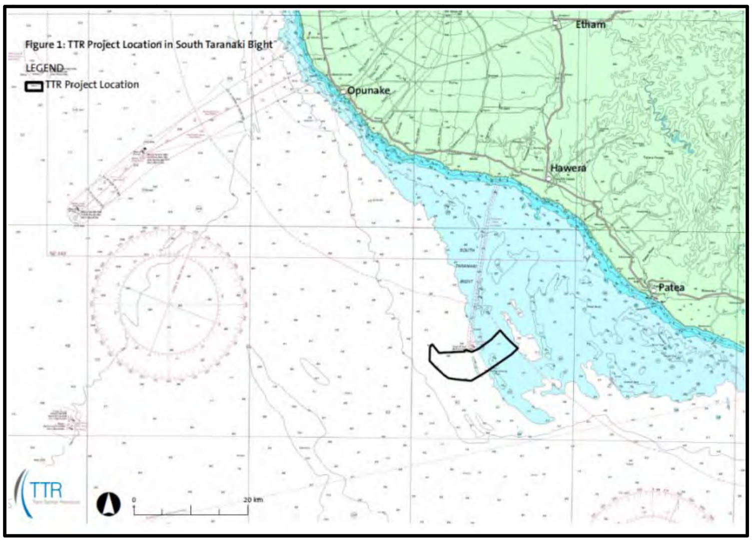
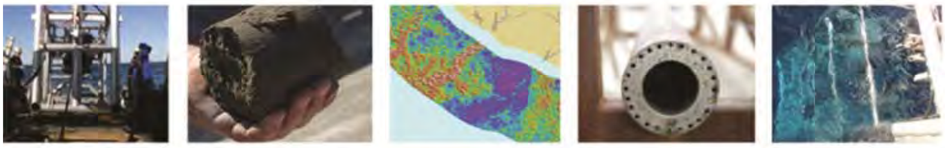


Figure 1: TTR Marine Consent Location in the South Taranaki Bight



3. PROJECT SCALE AND DURATION

The proposed operations are designed to recover, produce and export up to 5 million tonnes of iron sand concentrate per annum. To achieve this production the sediment extraction equipment will have the capacity to recover and process up to 8,000 tonnes of sediment per hour.

Operations will occur 24 hours a day, 7 days per week, with an estimated 28% downtime due to inclement weather, vessel operations, plant and equipment maintenance and anchor relocation.

TTR intends to apply for a marine consent with duration of 20 years in accordance with section 73 of the EEZ Act. This duration takes into consideration the time required to construct and commission a purpose built Integrated Extraction Vessel, as well as allowance for post operational monitoring.

4. IRON SANDS MINERAL RESOURCE

Iron sands generally form onshore beach and dune deposits, however extensive deposits also exist offshore of the west coast of the North Island. These deposits occur along 480km of coastline from Kaipara Harbour in the north to Wanganui in the south.

The iron sands targeted by TTR comprise a black, heavy, magnetic iron ore that originated as crystals in volcanic rocks largely derived from Mount Taranaki. Over thousands of years these rocks have been washed down by rivers, transported along the coast by shallow-marine long-shore currents, and subsequently concentrated offshore by historical wave and wind action into offshore remnant beach and dune lag deposits located 22-36km offshore in water depths of 20-42 metres.

5. SEDIMENT RECOVERY OPERATIONS

The iron sand recovery operations will involve five special purpose vessels designed to recover, process and handle the iron sand sediment. These vessels include the Integrated Mining Vessel (IMV), a purpose-built vessel that recovers, processes and transfers the iron sand concentrate; the Floating Storage and Offloading (FSO) vessels; an Anchor Handling Vessel (AHT); a Geotechnical Support Vessel and a re-fuelling vessel.

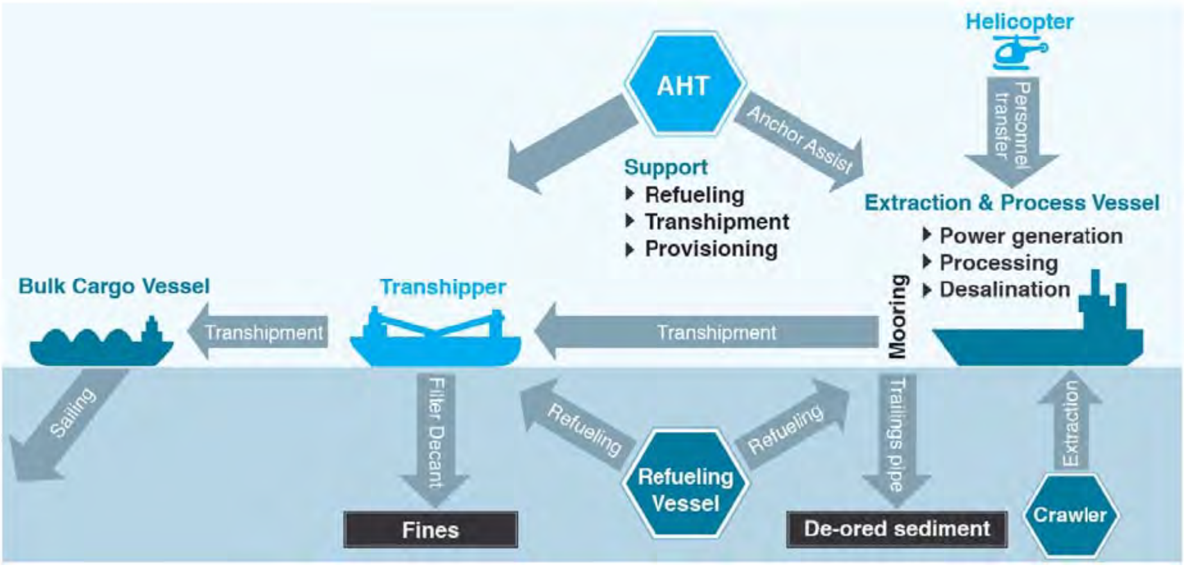


Figure 2: TTR Operational Layout

5.1 IMV (Main Extraction and Processing Vessel)

The IMV will be purposely designed to accommodate the extraction equipment (Crawlers) at the stern, with processing and utility modules integrated forward of the extraction module, above deck. It will have a weight of approximately 180,000 tonnes, a length of approximately 345m, a 60m beam and a draft design of 15m.

The IMV will provide the required storage buffer capacities for:

- All extracted material removed from the seabed by the crawler (extracted sediment);
- Iron sand concentrate;
- Freshwater from the reverse osmosis plant (Industrial Grade); and
- Fuel.

The IMV will be designed to operate in the conditions experienced on the west coast of New Zealand. It will be classed for worldwide operations in accordance with the maritime class, flag and port requirements and will meet the following capability requirements:

- Station keeping and tracking during the sediment extraction operation;
- Supporting and housing the extraction system, launch and recovery system, vertical transport system and auxiliary services;

- Supporting and housing a processing plant;
- Buffering and stockpiling slurries and concentrates to allow for a continuous process;
- Continuous offloading de-ored sediment;
- Periodically offloading concentrate to a dedicated transfer vessel;
- Housing a power generation plant capable of supplying sufficient power to drive the extraction system, launch and recovery system, vertical transport system, processing plant, desalination plant, product transfer and auxiliary services;
- Providing sufficient office space and accommodation for the maritime, extraction and processing system operational staff complements; and
- Supporting helideck(s) in order to facilitate personnel transfer.

The IMV will provide the platform for the following operational modules:

- Extraction (Crawler) Module;
- Beneficiation Module;
    - Screening;
    - Magnetic Separation; and
    - Grinding.
- Power Generation Module; and
- Desalination Plant.

The IMV will be fitted with a 4 point, dynamic positioned winch mooring system, allowing the IMV to be continually winched on a pre-determined extraction and associated deposition pattern. The operational procedure requires the IMV to follow the extraction crawler at an average rate of 70m/hr. At this speed a 900m x 600m block will typically be worked in around 30 days. The mooring configuration has been designed to allow access by transfer vessels without interrupting the extraction or beneficiation processes.

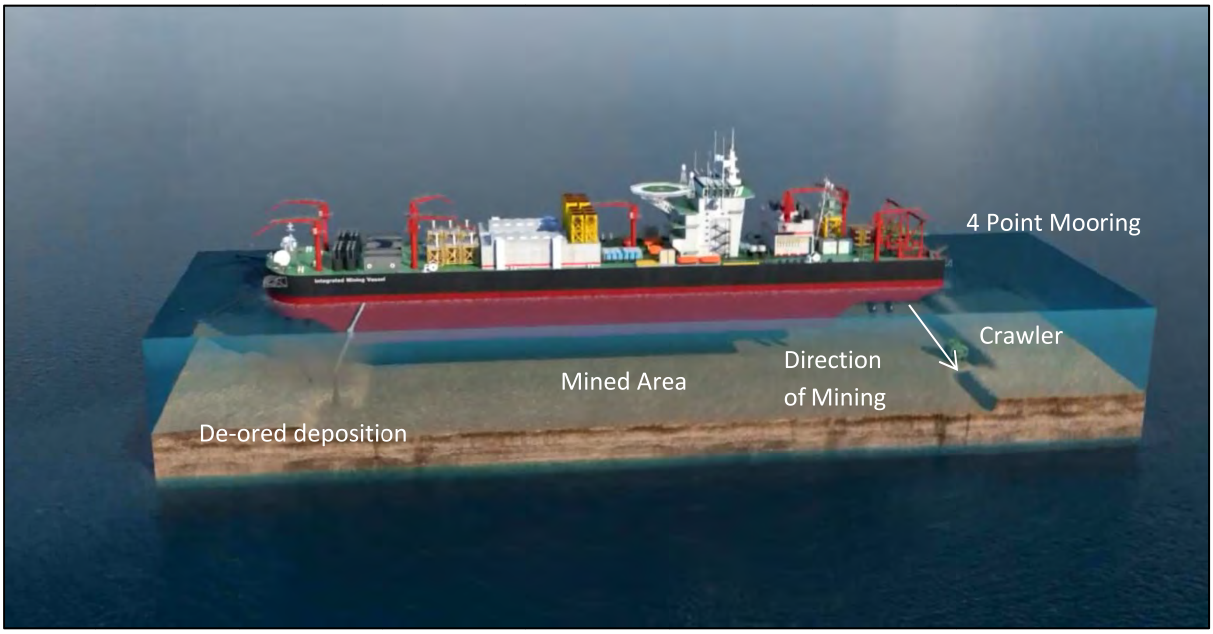


Figure 3: The Integrated Extraction and Processing Vessel.

Iron Sand Recovery

A submerged remote controlled crawler will be launched and recovered from the stern of the IMV, which will recover iron sand from the seabed in a single pass. The crawler extracts the seafloor sediment to a predetermined depth (up to 11m) and takes the full vertical face of the extractable sediment.

The crawler is operated remotely by an operator on the IMV via an umbilical which includes a power cable, various hydraulic hoses, and a 900mm diameter delivery hose. The key features of the crawler operation are as follows:

- IMV Connection: The crawler is lowered to the seabed and raised to the IMV via a retractable deck and lift mechanism from the stern of the IMV;
- Electrical: Power demand of the crawler is up to 5MW, with supply via an umbilical. A submersible electric motor will provide power for driving the main slurry pump. The dredge pump will be directly coupled to the electric motor and like all submerged mechanical, electrical and electronic equipment, will be pressure compensated to prevent water entering the housing;
- Manoeuvring: Manoeuvring of the crawler will be achieved via two hydraulic driven tracks attached to the chassis of the machine;

- Hydraulic System: The hydraulic design will use best international practice. Flexible hoses with stainless steel fittings will be used for all connections between the valve tanks, intermediate couplings and hydraulic cylinders. Hydraulic oil will be stored on the IMV with connection via the umbilical. Marine biodegradable hydraulic oil will be used to minimise the risk of adverse environmental effects should a spill occur. Hydraulic oil pressure in all feed lines will be closely monitored with automatic shut-off equipment in the event of pressure loss; and

- Sonar Imaging: The crawler will employ imaging sonar. Utilising an array of transducers, the crawler will typically provide the operator with 120 degree constant field of vision of the underwater scene ahead.

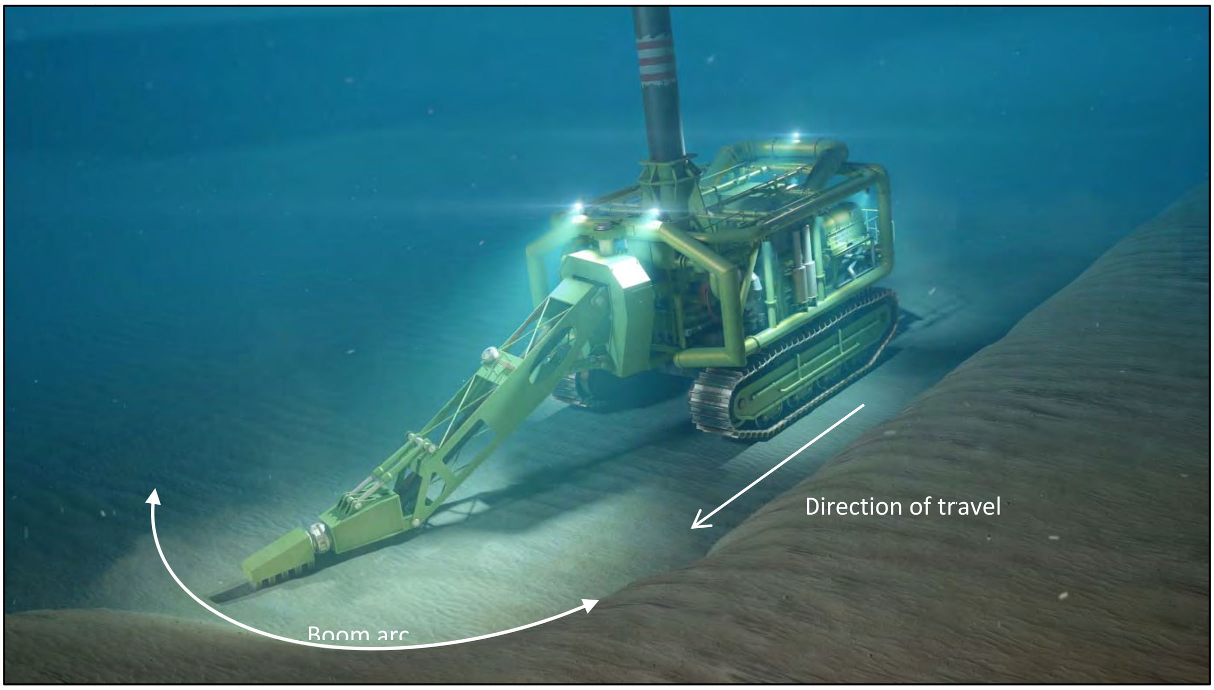
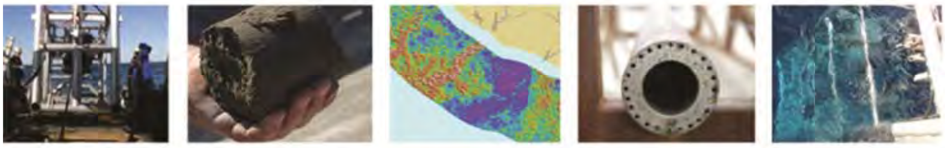


Figure 4: Crawler Operation



Sediment Processing

The production of the iron sand concentrate from the recovered sediment only involves physical separation techniques and hence no chemicals are utilised. The general processing description is as follows:

- Initial Screening: The first process for the run of recovered sediment from the crawler is processed through screens, which is done to reject particles larger than 3mm. Sediment less than 3mm will then be fed under gravity to water-agitated storage tanks directly below the screen area for further processing. Oversize material will be fed via a chute to de-watering and de-ored sand handling areas, and then re-deposited on the seabed;

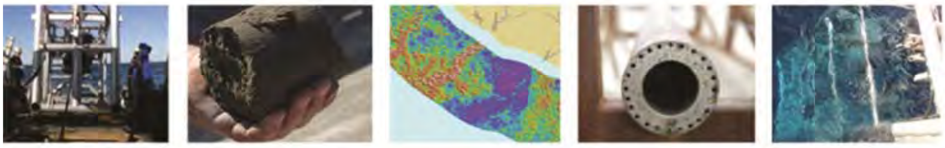
- First Stage Magnetic Separation: Sediment less than 3mm from vibrating screens will be pumped from the agitated storage tanks to the first stage of magnetic separation units (Medium Intensity Magnetic Separators or "MIMS"). This step will capture magnetic particles whilst rejecting the majority of the de-ored sand;

- Second Stage Magnetic Separation: Magnetic sediment from the first stage magnetic separation is passed through another set of magnetic separating units (Lower Intensity Magnetic Separators or "LIMS"). This refines the magnetic sediment whilst rejecting further non-magnetic material;

- Size Classification: Sediment from the second stage magnetic separation is screened into coarser sediment and finer sediment. This separation is done by a series of specialised stacked screening units, capable of dealing with the large amounts of fine sediment;

- Grinding: The coarser oversize sediment from size classification process is pumped to a grinding mill for the sediment to be ground into a smaller sized particle. This is done to liberate magnetic particles and improve the overall recovery of the iron sand;

- Final Magnetic Separation: The final magnetic separation will comprise further LIMS units to produce the final iron sand concentrate;



- Final Concentrate Handling: De-watered concentrate from the final magnetic separation process will be stored ready for transfer to the FSO. The FSO will connect to the IMV via a floating slurry pipe line and the de-watered concentrate on the IMV will be mixed with produced freshwater to form a slurry of 50% solids by weight. Freshwater is used to wash the concentrate to reduce the chloride level of the product. Once the slurry has been pumped to the FSO it will be filtered to a low moisture content using four hyperbaric pressure filters. Filtrate freshwater will be discharged to sea from the FSO; and

- Handling of De-Ored Sand: De-ored sand will be de-watered before disposal. Coarse and fine de-ored sand will be de-watered separately before being discharged under gravity via the de-ored sand deposition pipe. The deposition pipe will be controlled using sonar such that the discharge occurs at a constant height from the seabed. The discharge pipe will be controlled to maintain a height of 4m above the deposited de-ored sediment, this is to ensure the release of sediment into the water column is minimised.

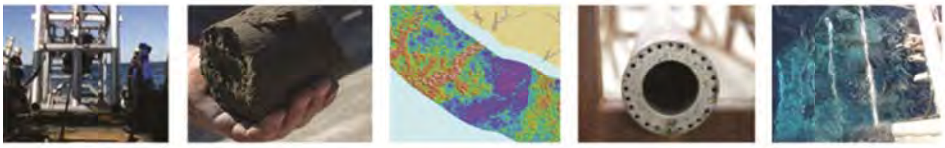
IMV Re-Positioning

The IMV will deploy 4 standard Stevpris-type anchors, each attached directly to the IMV by 90mm diameter, tensioned steel cables and a 50-100m length of anchor chain. The anchoring system will be designed to accommodate the dynamic loads of the IMV in the prevailing weather conditions in the South Taranaki Bight.

The IMV will use a winching system on the anchor lines to continuously re-locate itself relative to the location of the crawler, which will be working 600m x 900m blocks in a predetermined sequence (see Figure 5). The IMV will follow the crawler at a typical advance rate of around 70 metres per hour.

The IMV will winch itself along in tandem with the crawler as the recovery of iron sands occurs, relying on the four anchors, which will be positioned by the Tug. The IMV will also utilise a dynamic positioning system for supplementary control.

When transiting to the next extraction block, the AHT will assist in moving anchors to new positions.



5.2 Extraction Sequencing

The recovery of sediment from the seabed will be undertaken in a planned and considered manner, with a number of factors combining to ensure maximal operational efficiency while minimising effects on the environment. Prior to recovery operations occurring, close spaced grade control drilling will be undertaken in order to understand and document any variability in the sampling and the recoverable sediment, By understanding the variability of the sediment sizes and the chemistry of the sediment, the extraction operation can be “fine-tuned” on a site-specific basis to ensure optimal performance.

The IMV will be orientated on a pre-determined section or block of the seabed. These blocks are 900m by 600m and are oriented to ensure maximum stability of the IMV with the prevailing metocean conditions. This block size is determined by the anchor mooring configuration, in that this is the maximum distance the anchor can be spread before anchor relocation would be required. Once a block is extracted the IMV and the mooring anchors are relocated into a position adjacent to the previously used extraction block so de-ored sediment can be backfilled into the previously worked area.

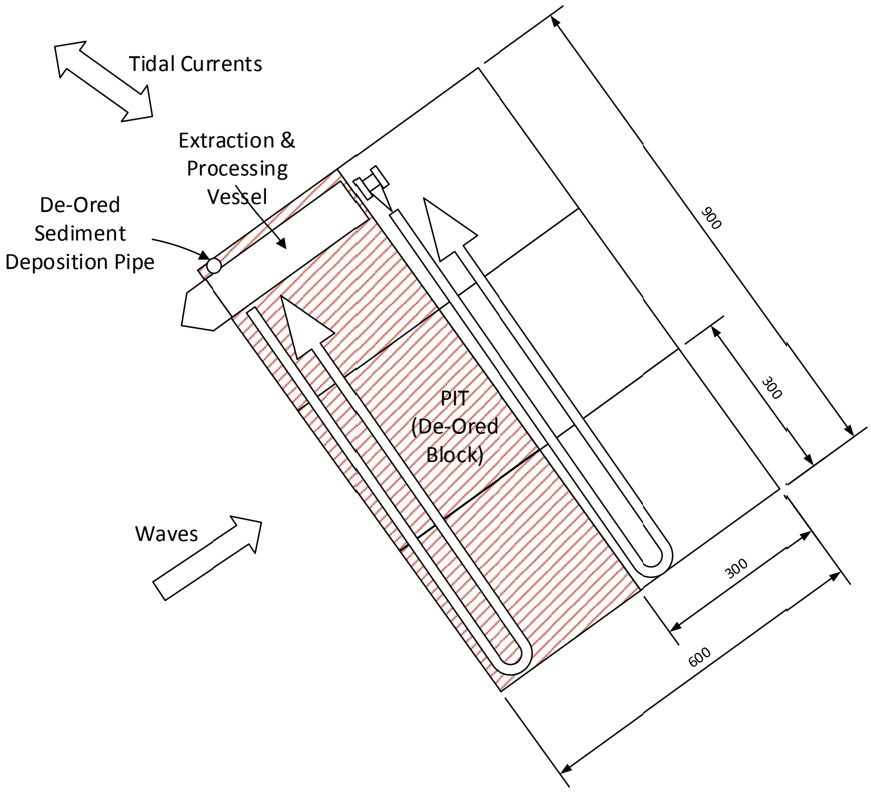


Figure 5: Extraction Sequencing

5.3 Associated Operational Activities

- Grade Control Drilling and Geophysical Surveying: These operations will be undertaken by an expert geotechnical team which will be set up to undertake various pre and post extraction activities utilising specialised equipment;

- Environmental Monitoring Activities: These operations will also be undertaken by the geotechnical team which will have the equipment to undertake continuous surveys such as sidescan sonar, multi-beam and the checking and servicing of environmental monitoring devices;

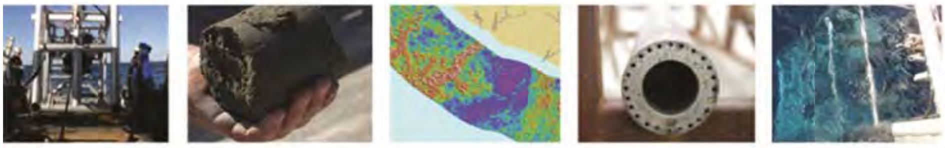
- Anchor Handing Tug Operations: The AHT will be a used to assist the IMV when re-positioning of the mooring anchors is required, as well as general resupply to the vessels, refuelling support and general support;

- Trans-Shipment Activities (Ore transfer): FSO vessel will be used to transfer the iron sand concentrate from the IMV, dewater and store, and then transfer onto the larger iron sand ore carrier vessels. Trans-shipment activities will occur within the South Taranaki Bight as close as practicable to the extraction operations. In times of adverse weather events the trans-shipment of dry ore onto the ore carriers will take place in Admiralty Bay at the head of Pelorus Sound;

- Fuel Transfer Operations: These are to be undertaken by a dedicated bunkering vessel which will resupply the offshore vessel with heavy fuel oil;

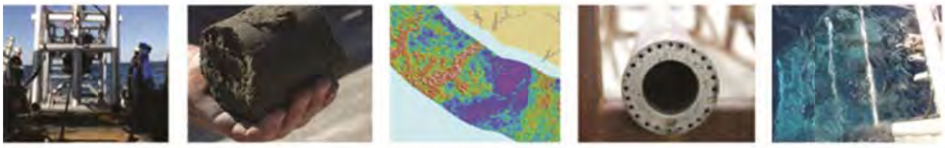
- Re-Supply Operations: Will be undertaken by the AHT vessel; and

- Crew Transfer Operation: These activities will be undertaken by helicopter, similar to servicing arrangements for the offshore petroleum industry in the Taranaki Region.



TTRL OFFSHORE IRON SANDS PROJECT

SUPPLEMENTARY SCIENCE SUMMARY



1. NEW SCIENTIFIC INFORMATION

The DMC that considered TTR's original application for marine consent noted the uncertainties around the scale of the predicted effects on the environment, particularly the assumptions with regards to the extent and density of the plume, the effects on primary productivity, and the scale of impacts on existing interests - specifically iwi and commercial fishing interests (EPA, 2014). In light of this, TTR has undertaken an extensive programme to supplement and update its modelling and assessment on the extent and density of the plume that will be generated during the recovery of iron sand.

The objective of the programme undertaken by TTR has been to provide additional, refined technical information about the extent and density of the sediment plume. To undertake this programme of work TTR has augmented local expertise by retaining world-leading experts in sediment modelling, optics and primary production from the United States of America and United Kingdom. An overview of the assessments undertaken by TTR's scientific team is summarised below.

1.1 Plume Modelling

The international experts retained by TTR have undertaken detailed peer reviews of the original models developed by NIWA, and also undertaken further testing on the re-deposition of sediment material in order to enable more accurate modelling of the extent and density of the plume. In particular, the peer review and testing by HR Wallingford Ltd (**HRW**) has allowed for more accurate modelling of the plume in relation to the following:

- Flocculation - the original plume model neglected flocculation, a mechanism whereby fine sediment combines into faster-sinking aggregate;

- Sediment settling rates - the extent to which the fine suspended sediment would settle to the bottom and be trapped in the matrix of discharged sand is predicted to occur to a greater extent than previously assumed; and

- Sediment re-suspension - the testing by HRW found that the shear stress required for re-suspension of freshly deposited material was in the range 0.2–0.3Pa rather than the 0.1Pa (minimum value), as originally assumed by NIWA.

The increased definition in the elements listed above on the predicted plume extent and density can be demonstrated by comparing the median near-surface results for the most inshore and offshore mining locations in the modelling done in 2014 to that done in 2015. This is demonstrated in Figures 1 to 4 below (noting in particular that the shading represents any modelled concentration that is above zero, irrespective of whether it is even discernible – the grey shading in the figures represents a concentration of less than 0.2 milligrams of sediment per litre of seawater. Note also that one teaspoon of this sediment weights around 15 grams, so the grey line represents about 1/75,000th of a teaspoon of sediment in a litre of seawater:

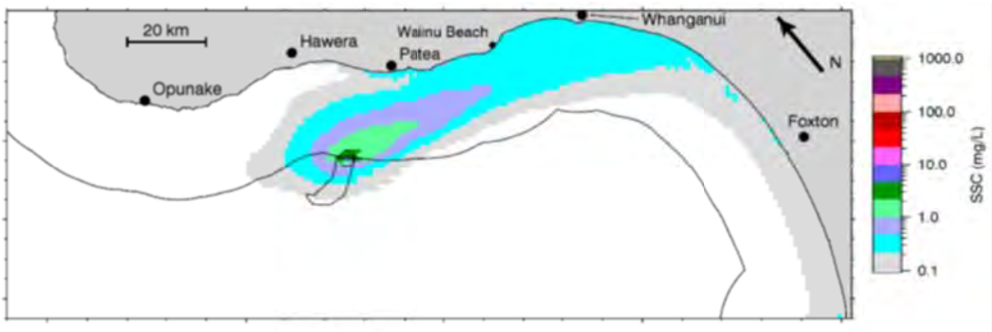


Figure 1 Inshore Sediment Release Median 2014

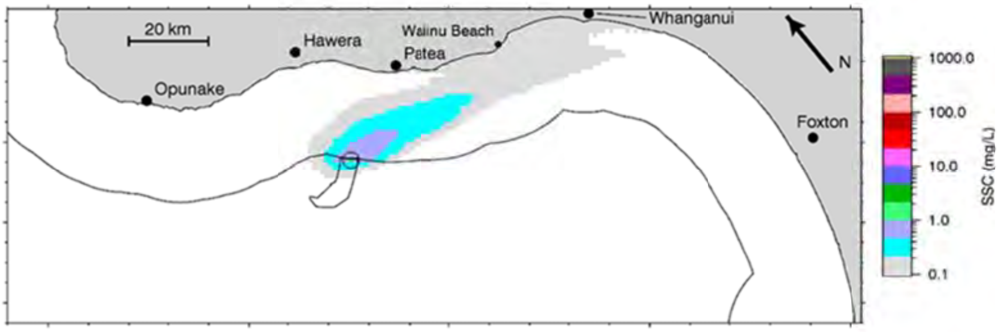


Figure 2 Inshore Sediment Release Median 2015

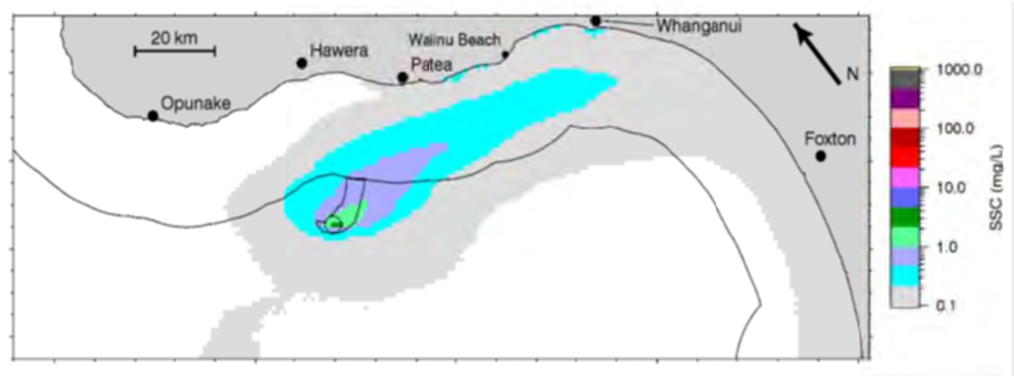


Figure 3 Offshore Sediment Release Median 2014

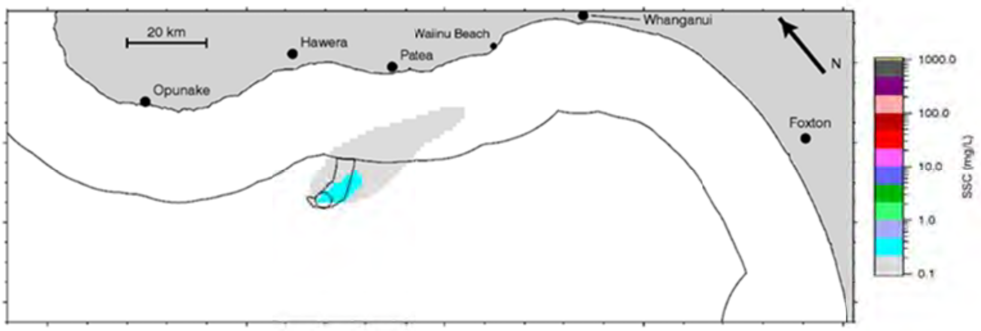


Figure 4 Offshore Sediment Release Median 2015

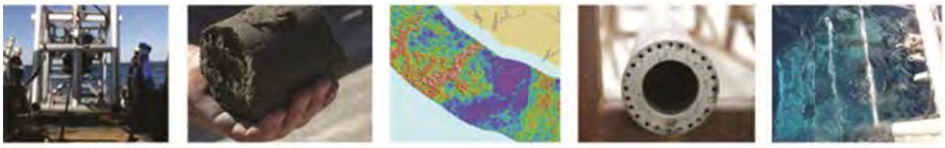
Figures 2 shows the extent of the plume is reduced in the 2015 model and the near surface, suspended source extends to the east-southeast. Between Patea and Whanganui the suspended concentrations are substantially less than naturally occurring background concentrations (100 times less). The highest surface concentrations occur at the source location and are approximately 1.45mg/l (median), or approximately 1/10,000th of a teaspoon per litre. Approximately 20km ‘downstream’ from the source location the surface concentrations reduce to around 0.35mg/l (median) or approximately 2/100,000th of a teaspoon per litre.

For the furthermost offshore mining location within the mining area, Figure 4 shows the plume is located further offshore but follows a similar path to the east-southeast, but with the concentrations being significantly lower still.

1.2 Optics

With respect to the predicted changes to the optical properties in the South Taranaki Bight, the previous modelling by NIWA has been updated in response to the results of the new sediment transport modelling. The main conclusions of the optical modelling based on iron sand recovery at two different representative locations (Site A, which is located at the inner limit of the proposed operations, close to the 12 nautical mile limit and Site B, which is located at the outer extent of the proposed operation) are:

- The optical effects of the iron sand recovery operations are likely to cease very quickly after the operations cease;
- There is substantial natural variability in optical properties in the modelled area, with greater turbidity at the coast;
- The optical effects of the plume decrease away from the iron sand recovery operations;
- The optical effects of the plume will be greater in the offshore area than in the nearshore area, with effects being minimal close to the coast (i.e. within approximately 5km of the coast);
- Average light in the water column averaged over the domain of the sediment model (an area of 13,000km^2) is predicted to be reduced by only a small amount - approximately 1.9% based on ore recovery at Site A and 1.6% based on ore recovery at Site B; and
- The total amount of light received by the seabed in the domain of the sediment model is predicted to reduce by 23% (Site A) and 16% (Site B), and this reduction will occur primarily east of the proposed iron sand recovery operation.



1.3 Primary Productivity

The potential effects of the project on primary productivity have now been recalculated as follows:

- Light in the water column, integrated over the modelled area and averaged by year, is predicted to reduce 1.9% at Site A and by 1.6% at Site B;
- The total amount of light at the seabed, over the whole modelled area averaged over a year, is predicted to reduce by 24% at Site A and by 15% at site B;
- The project will reduce energy flow to the seabed ecosystem, averaged over the modelled area, by 5.8% at Site A and by 4.1% at Site B;
- The project with reduce water column primary production, averaged over the modelled area, by 1% at Site A and 0.8% at Site B; and
- The project will reduce benthic primary production, averaged over the modelled area, by 19% at Site A and 13% at Site B.

The analyses of the field data, coupled with modelling of the character of the sediment plume from iron sand recovery operations, its trajectory and duration, and its optical effects, and the analyses of these effects on primary production in the modelled area strongly support the conclusion that the overall effects of iron sand recovery operations on short-lived organisms (i.e. those living less than a year or two) will be indistinguishable within natural oceanographic variability. Effects at local scale proximal to the iron sand recovery operations will be limited to decreases in microphytobenthos production and organic carbon availability to benthic consumers. This may exceed natural variability and may propagate locally to organisms that feed primarily on microphytobenthos and in turn to their predators.

1.4 Marine Ecological Effects

TTR has also commissioned NIWA to provide an assessment of the effects of the proposed iron sand recovery activities on key zooplankton, fish, seabird and marine mammal species - taking into account the spatial and temporal scales relevant to different components of the ecosystem. This assessment has also taken the latest sediment transport and optical modelling results into consideration.

The assessment of the spatial and foraging ecology of the key fauna occurring in the South Taranaki Bight has identified that the environmental effects will be negligible for all zooplankton, seabird, and marine mammal species, and most fish species. For coastal kaimoana species, the proposed iron sand recovery activities should not add significantly to the levels of suspended sediments currently experienced inshore in frequently turbid waters.

The assessment did identify that eagle ray may be affected by iron sand recovery activities. Although the area potentially impacted by iron sand recovery comprises less than 1% of the area of distribution of eagle ray in Fisheries Management Area 8, approximately 8% of its core area of distribution (>50% occurrence) overlaps with the area where suspended sediment concentrations will be elevated above 3mg/l. Using this threshold, a minor to moderate proportion of the eagle ray stock could be affected by mining through displacement of fish, or decrease in prey abundance or availability.

During summer and autumn eagle rays tend to concentrate inshore in water less than 10m deep where background suspended sediment concentrations may naturally reach over 100mg/l. This means that eagle rays may be tolerant to significantly higher suspended sediment concentrations than the threshold of 3mg/l used to assess the impact of the proposed iron sand recovery activities.

This is a substantially reduced level of effect than may have been inferred from the previous application, and in TTR's opinion should give stakeholders and iwi considerable confidence that this project can proceed in an environmentally appropriate and sustainable manner.

2. OVERALL SUMMARY

The new modelling and scientific assessments undertaken by internationally recognised experts fundamentally recasts understanding of the scale and extent of the potential environmental effects associated with the recovery of iron sand from the seabed of the South Taranaki Bight. In this regard, it can be demonstrated that the plume associated with iron sand recovery will produce changes in sediment concentrations that are within the range of natural variability at the scale of the modelled domain or the wider South Taranaki Bight and will not result in any ecologically significant adverse effects on primary productivity or fixed carbon flux to marine ecosystems at the large scale. Significant localised effects may occur but these would be patchy and episodic in nature and the ecosystem would recover once the recovery activities progress or stop.

TTRL OFFSHORE IRON SANDS PROJECT

ECONOMIC IMPACT ANALYSIS

SUMMARY

1. Introduction

Martin Jenkins was engaged to undertake an economic impact analysis of Trans-Tasman Resources Limited's (TTR) proposed iron sands project on the local (South Taranaki/Whanganui), regional (Taranaki/Whanganui), and national (New Zealand) economies. The economic impact is assessed by applying regional Input-Output Multipliers to TTR's projected operational expenditure in several industry areas in order to measure the direct, indirect and induced GDP and employment impacts.

The economic impact analysis shows that TTR's proposed iron sands project will have a positive economic impact on the South Taranaki, Whanganui and New Plymouth districts as well as contributing to the New Zealand economy through royalties, taxes and export earnings. The project complements existing industries in the region and will encourage high value economic activity in an area facing economic decline.

2. Project

The iron sands project aims to extract iron ore from iron sand on the Taranaki Bight, in an area which is from 22 to 37 kilometres off the coast of South Taranaki. The iron ore will then be exported to international markets. TTR has a 20 year mining permit and the project is expected to extract 5 million tonnes of iron ore per annum.

About $133 million of operational annual expenditure will be spent in New Zealand. Of that, about $73 million is expected to be spent in the Taranaki/Whanganui region, with $35 million spent directly in the South Taranaki and Whanganui districts each year.

2.1 Study area

The analysis looked at the economic activity within three study areas – local, regional and national. The local study area consists of South Taranaki and Whanganui. It is where the iron sands operations will occur. The regional study area is made up of four local authorities - South Taranaki, Whanganui, Stratford, and New Plymouth. A large portion of expenditure will be within this regional study area. The national study area is New Zealand.

3. Local development

The main area of activity is likely to be in South Taranaki and Whanganui. This is a relatively small economy in a rural area where the effects of a project will have a noticeable impact on the local economy, particularly as new jobs are generated. While there is oil and gas and extraction activity in South Taranaki, much of this is serviced out of New Plymouth, limiting the benefits to the local region.

TTR has indicated that it is looking to have as much positive impact on the local area as it possibly can. This includes establishing support functions in the rural area (rather than basing it in New Plymouth), utilising local services where possible (i.e. engineering services), and working with the community to encourage participation from the local workforce.

TTR recognises the benefits to the operation and to the region from employing local people where feasible. Investing in training to employ local people will benefit the individuals, the community, and ultimately the project itself.

TTR envisages that, at project initiation, approximately 30 percent of all TTR employed persons would be New Zealand citizens with approximately 10 percent of those being from local South Taranaki and Whanganui communities. It is TTR's aspiration that after five years of operation, sufficient technology and skills transfer has taken place that 80 percent of the people employed directly will be New Zealand citizens and that a significant proportion of those would be from South Taranaki/Whanganui communities.

To achieve this, TTR is exploring the possibility of basing a training school in South Taranaki, working with an ITP and regional businesses to assess the viability.

Long term, main contractors and service suppliers will also be required to ensure a progressively increasing local quota with regards to people employed within their organisation working on the TTR operation. These contractors and service suppliers will also be required to include local firms on tender lists.

The Geotechnical Services Vessel would be based out of Whanganui harbour, with its supporting onshore activities also based in Whanganui, providing much needed activity in the local area. A potential opportunity exists to develop a heli-port in Hawera or Opunake, which would provide services to offshore activity.

4. The economic impact

The analysis is underpinned by projected operational expenditure from the project in several study areas and applying established regional Input-Output Multipliers to measure the direct, indirect and induced GDP and employment impacts.

The total economic impact of the iron sands project on the local, regional and national economies is shown in the following table. Expenditure and GDP are per annum, while Employment is the number of jobs supported.

Total impact by study area	Expenditure $m	GDP $m	Employment FTEs
Local	45.1	18.6	299
Regional	115.7	50.6	705
National	349.1	159.0	1,666

Source: Martin Jenkins

<u>Local (South Taranaki/Whanganui)</u>

The iron sands project is expected to generate about $18.6 million in GDP and employ 299 people in the South Taranaki/Whanganui economy each year over 20 years.

<u>Regional (Taranaki/Whanganui)</u>

The iron sands project is expected to generate about $50.6 million in GDP and employ 683 people in the Taranaki/Whanganui economy each year over 20 years.

<u>New Zealand</u>

The iron sands project is expected to generate about $159 million in GDP and employ 1,666 people in the New Zealand economy each year over 20 years.

The project will also contribute to government income through royalties and taxes and to New Zealand's export earnings. At a conservative price of US$40/tonne and a NZ$/US$ exchange rate of $0.65, the project would contribute $6.15 million in royalties and about $312 million in export earnings each year. Government would also collect taxes from the venture.

The price of iron ore is unlikely to affect the economic impact analysis. The bulk of the economic impacts arise from the expenses associated with the project. Price rises will lead to greater royalties, taxes and profits, but these are less important contributors to economic impact than operational costs. If iron ore prices fall, the royalties, taxes and profits will decline, but the economic impact will continue to occur until the price falls below the break-even point for a prolonged period forcing the project to cease operations.

5. Wider benefits

The iron sands project will have a significant effect on the South Taranaki and Whanganui economies. It would add to the diversification of economic activity in the region, which is heavily reliant on the oil and gas and dairy sectors. This would improve the resilience of the region, where the key sectors are prone to global commodity prices and cycles. At the same time, the services required by the project are complementary to existing services demanded in the region, ensuring that local businesses will participate in and benefit from the activity. The location of the project in South Taranaki and Whanganui would encourage much needed activity in an area that is not performing well economically.

We at TTR are well aware of the potential to make a meaningful contribution to the local economy. We recognise that a local focus will make for a more stable and successful business. We are seeking to encourage and support as much local engagement as reasonably and financially possible, both with regards to our own activity and also the services we purchase from out-of-region providers. Own activities include encouraging servicing activity within the area, exploring the potential for setting up a training facility, and local labour content targets. Our main suppliers will also be set local labour content targets.