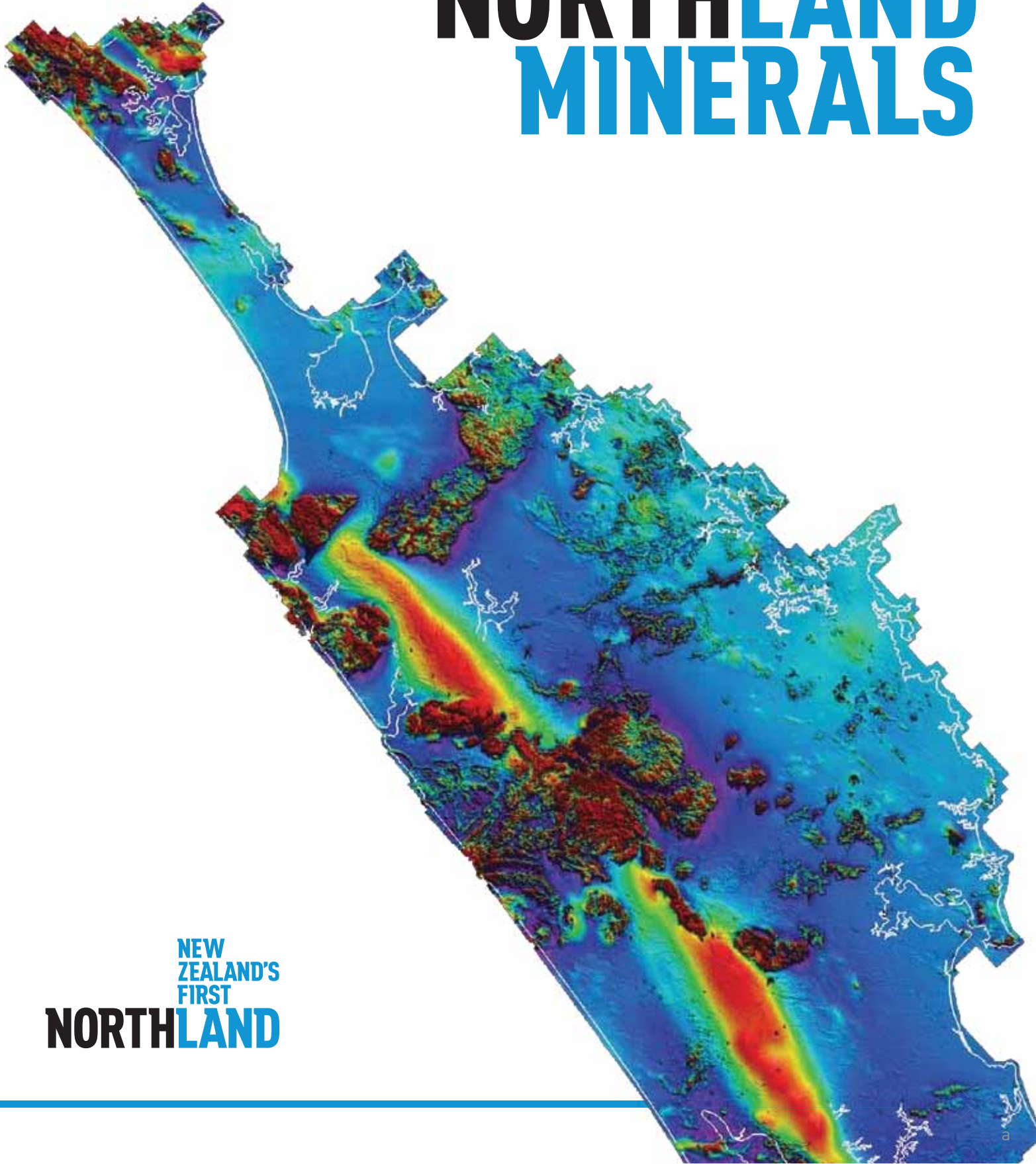

EXPLORE NORTHLAND MINERALS



NEW
ZEALAND'S
FIRST
NORTHLAND

PROJECT PARTNERS



COVER IMAGE: Striking image showing the magnetic anomalies of the Northland region, based on data from the airborne geophysical survey conducted in 2011; hot tones represent rocks with strong positive magnetism. [The data has been corrected for the dip of the Earth's magnetic field.]

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KIA ORA AND WELCOME TO NORTHLAND

As the Mayor of the Far North and Explore Northland Minerals spokesman, I am committed to increasing economic opportunities across our region and mining has our full support. It is with pleasure that we extend an invitation to the domestic and international mining communities to explore the commercial potential of Northland's minerals.

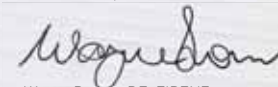
The Far North District Council initiated the Northland airborne geophysical survey in 2009 with seed funding, matched by the Northland Regional Council, and substantial overall project funding from the Crown. The survey results, which are previewed in this Information Memorandum, help us all understand the opportunities we can embrace over the coming decade.

Northland is a sub-tropical paradise rich with history and inhabited by a cosmopolitan mix of people. We are fortunate to have an established and unified team of Councils, Crown, Māori leaders and local investors who are committed to supporting exploration and ethical mining of the region. The Explore Northland Minerals group was established to provide a welcome environment to prospective investors, support the flow of information and provide clear channels to progress for all stakeholders.

We are also looking forward to welcoming our people back from foreign shores as new mining ventures allow us to offer employment opportunities to experienced New Zealand contractors and staff working in the mineral extraction sectors across the Tasman and elsewhere around the world.

We are confident that the unmatched economic and lifestyle opportunities in Northland will make it a top destination on your prospect list.

Haere Mai, welcome



Wayne Brown, BE, FIPENZ
Mayor, Far North District
Explore Northland Minerals spokesman



NEW OPPORTUNITIES IN NORTHLAND, NEW ZEALAND

IN AN INCREASINGLY GLOBALISED WORLD, INNOVATION AND IDEAS OFFER THE ONLY TRUE COMPETITIVE ADVANTAGE.

Distance is no longer a barrier to innovation, and there is virtually no limit to the profits that can be generated from a well-executed unique concept.

As a young, remote country, New Zealand has become adept at finding creative solutions to a range of problems. This culture of innovation, adaptability and risk-taking is propelling New Zealand into world leadership in many fields.

Both domestic and international enterprises are succeeding by taking advantage of New Zealand's unique capabilities, quality infrastructure, superb quality of life and business-friendly environment, rated by the World Bank as 3rd in the world for ease of doing business.

New Zealand's economy, culture and governance systems also rule out many of the problems that afflict overseas investments, such as unnecessary compliance costs or burdensome regulations. New Zealand offers a welcoming and efficient environment and is rated the 2nd best country in which to do business (Forbes 2011).

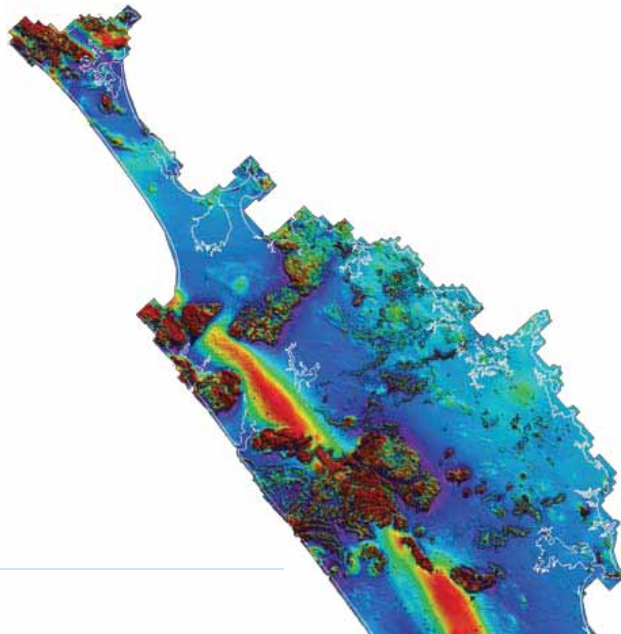
Northland has a geological history spanning more than 250 million years of sedimentation, tectonism and volcanism that has endowed it with a wide variety of mineral deposits. Recent mineral resource assessments and prospectivity studies have highlighted the unrealised mineral potential and encouraged central and local Governments to fund three new initiatives in 2011, to assist mineral exploration:

- A digital compilation of exploration and research data.
- New airborne geophysical surveys.
- A geological interpretation of the airborne geophysical survey data.

In addition to mineral exploration, the data will have wide applications in fields such as: geological mapping; geothermal exploration; soil mapping for forestry, agriculture and horticulture; identification of potential water-bearing structures; geological hazard assessment; and engineering and construction investigations. In addition to magnetic and radiometric data, the survey will also provide a digital elevation model that will be available for application by the various industry sectors.

A package of digital data from the airborne geophysical survey along with a geological interpretation is available from New Zealand Petroleum & Minerals (refer: Key contacts and resources). It includes geological maps, ground survey gravity data, airborne magnetic and radiometric data, and a compilation of exploration geochemistry. This data package is your ideal starting point to discover the resource potential of Northland.

We invite you to take the next step in interpreting this data for mineral prospectivity, to identify exploration targets, and to come and explore Northland. Central and local Governments welcome private company exploration investment and we encourage you to use this Information Memorandum to discover the new opportunities for you in Northland.



THE NORTHLAND LIFESTYLE



NORTHLAND – NEW ZEALAND'S WARMEST SUBTROPICAL REGION - STRETCHES FROM MANGAWHAI IN THE SOUTH TO THE COUNTRY'S NORTHERNMOST TIP, CAPE REINGA.

Whether it's indoors or outdoors, on the beach or at the theatre, Northland has an inexhaustible range of things to do, see and enjoy – ranging from untouched nature to nationally iconic and everything in between. Most Northlander's live within half an hour's drive of the coast, so swimming, boating, diving and fishing are national pastimes.

Northland's population density is one of the lowest in New Zealand - a population base of 157,000+ is spread through urban and rural communities on a land area of 12,640 km². About 70,000 employees work for over 20,000 businesses and Northland's gross (regional) domestic product of \$4.2 billion annually represents about 3% of the national total. Auckland, New Zealand's commercial centre and largest population base is right on our doorstep providing easy access to international-standard infrastructure and markets.

In the urban areas of Northland, the suburbs are made up of low-density housing with plenty of green spaces. The high-density housing estates of the northern hemisphere simply don't exist here. Both

rural and urban properties are likely to have a private outdoor space – one that will be large enough for children to play in, for your garden to grow and for your barbecue... a quintessential part of life in Northland.

The Northland region is 85 kilometres across at its widest point and 7.5 kilometres at its narrowest. The typical inland landscape is mainly rolling hill country with the main upland areas being the Maungataniwha, Tutamoe and Waimea ranges, peaking at around 780 metres above sea level. There are spectacular remnants of old volcanoes at several locations, including Whangarei Heads and around Whangaroa Harbour.

THE NORTHLAND ADVANTAGE



NORTHLAND IS THE FIRST REGION OF NEW ZEALAND. IN 1840, WE WERE THE FIRST TO CREATE A HISTORIC PARTNERSHIP BETWEEN OUR TWO PEOPLES, MĀORI AND PĀKEHA.

But we didn't stop there. Today we continue to be first - in our business opportunities, our balanced lifestyles and our strong sense of community. We have a lot of land, a lot of coast and a lot of diverse people with unique personalities, beliefs and reputations.

Northland extends a warm welcome to direct investment from companies and individuals, and has much to offer investors.

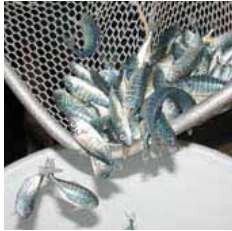
Some of the key benefits being:

- A large skill base trained for a range of key sectors in region;
- Infrastructure (utilities, rail, roads, port facility, etc) developed to ensure seamless delivery from Northland to international airports and ports;
- Dedicated government financial and logistic support for the recruitment and training of staff;

- Whangarei City, a 'service and support centre' to a range of sectors and industry;
- An unmatched lifestyle for staff located to Northland;
- Excellent port facilities, with considerable land for storage and the potential for expansion; and
- Purpose zoned/consented land available for development next to the port.

OTHER NORTHLAND INDUSTRY SECTORS

NORTHLAND SUPPORTS THE DEVELOPMENT OF INVESTMENT OPPORTUNITIES ACROSS A WIDE RANGE OF SECTORS. IN PARTICULAR, THERE ARE A NUMBER OF KEY SECTORS WITH AN ESTABLISHED INDUSTRY BASE, EXCELLENT SKILLED LABOUR FORCE, AND SUPPORTING INFRASTRUCTURE.



AQUACULTURE

New Zealand has thousands of kilometres of pristine, unpolluted coastline situated in the vast South Pacific Ocean. Its isolated position, far removed from intensive human activity, and many sheltered harbours and bays make New Zealand the perfect location for growing a diverse array of shellfish, finfish, seaweed and other aquatic and marine organisms.

Aquaculture currently contributes an estimated \$20 million annually to the Northland economy and directly employs around 300 people. Northland is notably home to NIWA, a world-leading fisheries and aquaculture research centre. Based at Bream Bay NIWA supports a growing aquaculture industry throughout the region including oyster, mussel and abalone farming, and the development of the world's first on-land kingfish farm.



ENERGY

New Zealand's only oil refinery, Refining NZ is located at Marsden Point next to Northport, Northland's deep-water port facility. Crude oil is shipped in to the facility and refined into high quality transport fuels, supplying nationally: all jet fuel; nearly 80% of diesel; around half of all petrol; 75-85% of bitumen for roading; all fuel oil for ships; and sulphur for farm fertiliser. The refinery currently employs over 3,000 staff and in 2011 the refinery celebrated 50 years of fuelling the country's needs and keeping New Zealanders on the move.

The Ngawha (geothermal) Power Station now has a consented production capacity of 25MW following the 2008 commissioning of the expansion to the original plant [equates to around 70% of all electricity consumed in the Far North District].

Significant advancements have been made to establish Northland as a net exporter of electricity, particularly around the 'renewables' such as wind and tidal power generation. Other generation alternatives also being explored are: peaker plants; micro-generators; landfill gas; bio-mass/forestry waste; co-generation and co-located industries; and solar photo voltaic.

ENGINEERING

There are in excess of 100 manufacturing engineering companies in Northland covering a broad spectrum of capacity and capability.

Culham Engineering, established in 1958 is one of the largest fabrication facilities in New Zealand, employs over 200 people and specialises in heavy engineering, petro-chemical and the marine/ship repair industries. Facilities include a Whangarei harbour-side 400 tonne slipway, shot blasting and painting facility, plus craneage and heavy haulage transport ranging from a 7 tonne road crane through to a 400 tonne Liebherr crawler crane. Major New Zealand-wide project experience includes: sports stadia redevelopment; infrastructure builds such as roading, bridges and city sewage plants; every major Refining NZ project since 1962; and cement plant upgrading.

McKay, established in 1936, is a multi-disciplined electro technology company providing extensive industrial and marine services to industrial and marine clients. They are ISO-9001 certified and have a comprehensive health and safety system with ACC WSMP accreditation. All aspects of electrical projects can be undertaken in-house: including electrical design and engineering; control and automation system design and integration; marine shore power converters; integrated monitoring; alarm and control systems; electrical and instrumentation installation; and world-class switchboard design and manufacture. McKay has worked with a wide variety of clients from many industries throughout New Zealand, the Pacific Islands and internationally such as: shipyards in the United Kingdom, UAE and USA; local government authorities throughout New Zealand; the New Zealand Defence Force; Fonterra; Refining NZ; and major wood processing plants throughout the region.



HORTICULTURE AND FOOD

Northland's subtropical climate and fertile soils provide an ideal environment for horticulture - the region's third largest primary industry sector. Horticulture contributes \$300 million to the Northland economy with more than 1,000 business owners employing over 2,300 people on a seasonal and fulltime basis. This vibrant and growing sector extends beyond crop-growing (e.g., avocado, kumara and citrus) to landscaping, amenity, arboriculture and nurseries.

There is also a growing number of passionate people developing and producing outstanding new 'added value' products. Leading edge research has led to the commercialisation of a number of health products in Northland. New Zealand's Manuka Honey, for example, contains high levels of an antibacterial substance used in wound dressings and indigestion treatments. Manuka Honey is most prominent in Northland, creating a growth industry open to partnerships and investment.



FORESTRY AND ADDED VALUE WOOD PROCESSING

Increasingly, consumers are demanding wood products that are a result of smart technology, safe and environmentally sustainable. New Zealand's wood processing industry delivers on these advantages. Our fast-growing Radiata pine forests are man-made, environmentally sustainable and scientifically managed. Our building products and solid wood components are internationally recognised for their quality, high performance and versatility.

Northland itself has a well-established forestry sector, with plantation forests spread throughout the region. Forestry is considered a sector with considerable growth potential because of its maturing forest estate. Forest based industries are currently the 3rd highest contributor to the Northland economy and 2,500 people are employed in related industries. Consequently, supporting industry knowledge and infrastructure in the region are excellent.

MANUFACTURING

New Zealand's largest cement manufacturer and supplier, Golden Bay Cement, has its only bulk manufacturing plant located at Portland and supplies to silos at 5 ports around the country and Auckland. The company has been involved and supplier to a broad range of major infrastructure projects; from motorways and bridges, large hotel and convention facilities, wind farms and sporting stadia.



PASTORAL FARMING AND PROCESSING

The combined pastoral farming sector - including dairying, beef, sheep and deer - is the largest contributor to Northland's GDP, just over \$1 billion annually. This sector is currently Northland's largest and with continued implementation of best practice, new technology, alternative land use and smart marketing this is predicted to continue. About 840,000 hectares of land are in pasture and Northland's subtropical climate provides an advantage not enjoyed by other regions. Northland's warm winters provide a competitive advantage to grow stock on during the lucrative winter and spring months.

Dairy giant Fonterra operates from two sites in the region - Kauri and Maungaturoto. Ballance Agri-Nutrients, a major supplier of fertiliser to rural industries is based in the Whangarei City. Two meat processing companies operate in Northland - AFFCO and Silver Fern Farms with plants in Moerewa and Dargaville respectively.

MARINE ENGINEERING

In New Zealand, you are never far from the sea (less than 175 kilometres) and the resultant high participation rate in leisure marine activities [one boat for every eight people, amongst the highest per capita in the world] has helped New Zealand to 'punch above its weight' in the marine sector. This marine industry provides many niche markets for high value goods and services and fosters and necessitates innovation that has wide-ranging application.

Boatbuilding has a long history in Northland and the region's marine construction and refits industry, clustered mostly around the Whangarei and Opua Harbours, consists of some 70 businesses contributing over \$600 million to the regional economy and currently employs around 500 people. These two harbours are also often the first entry points, and highly respected layover refitting and reprovisioning spots, for 'yachties' sailing to New Zealand and the greater South Pacific. The Northland businesses include a core group of boat and ship builders that build, repair and refit naval vessels, workboats such as fishing fleet vessels and barges, pleasure craft, and super yachts.



LABOUR AND RECRUITMENT

TRAINING AND RECRUITMENT SUPPORT

Central government agency, the Ministry of Social Development (MSD) offers a range of free services to help companies find and train full-time, part-time or casual workers to fill skill or labour shortages. They will create recruitment, training and support packages tailored to a company's specific needs. Industry partnerships with the Ministry are a way for industries, employers and government to work together to minimise skill and labour shortages and maximise job and career opportunities.

The Extractive Industries Training Organisation (EXITO) is one of thirty seven industry training organisations (ITO's) in New Zealand. Formed in 1996 by Government Statute, EXITO works with industry based experts, the New Zealand Qualifications Authority, the Tertiary Education Commission and training providers, to provide industry with work based training and career pathways. EXITO's main goal is to help companies achieve greater productivity and profitability through the ongoing development of employee skills and health and safety practices in the workplace.

SUPPORT FOR TRANSFERRED STAFF

Local government and the community welcome any staff temporarily or permanently transferred to Northland. There is support available to transferring staff, such as housing and transport information, advice on schools and tertiary facilities, and help where possible with other logistics.



LOCAL GOVERNMENT SUPPORT

Both regional (Northland Regional Council) and local governments (Far North, Whangarei and Kaipara District Councils) welcome international companies to the region and offer their assistance. Help is available in a number of key areas, including:

- Information to assist your investment decision.
- Introductions to our networks of professional and business contacts.
- Advocacy on your behalf to relevant national organisations.
- Co-ordination/facilitation of support from other organisations, [e.g., logistical and financial assistance to recruit and train the right people for your company].



CLIMATE

Northland has a sub-tropical oceanic climate with warm humid summers and mild wet winters. Due to its latitude and low elevation, the region has the country's highest average annual temperature however as with other parts of New Zealand, climate conditions are variable. In summer, temperatures range from 22°C to 26°C, occasionally rising above 30°C; in winter, maximum temperatures vary between 14°C and 20°C. The hottest months are typically January and February.

Ground frosts are rare due to the region being encircled by the moderating Pacific and Tasman waters. Typical rainfall for Northland is 1,500-2,000mm but varies at different altitudes; the region experiencing an average of 2,000 sunshine hours annually.

INFRASTRUCTURE

UTILITIES

A variety of public and private organisations provide a reliable supply of essential services. A deregulated energy sector and ample natural resources provide industrial users with internationally competitive energy, water and wastewater prices.

TELECOMMUNICATIONS

New Zealand has fully digital exchange networks, and high-capacity fibre-optic communications links into Australasia and the United States. Broadband connectivity is growing rapidly and New Zealand ranks 7th in the world for the number of internet users per capita. A number of major international communications companies are active in the New Zealand marketplace, including Vodafone, Alcatel and Australia's Telstra, along with Telecom NZ.

ROADS AND RAIL

New Zealand has a comprehensive network of roads and a large percentage of freight is moved by truck, with active coordination with rail services. All major population centres are connected by rail and there are frequent rail ferry services (freight, vehicle and passenger carrying) linking the two main islands. The rail freight network in Northland extends north from Auckland and terminates west of Kawakawa in the Far North.

AIRPORTS

International flights operate from a number of airports in New Zealand, including the largest in Auckland, only two hours by road from Whangarei. There are three commercial domestic airports in Northland - Whangarei City, and Kerikeri and Kaitiaki in the Far North - with regular services to Auckland.

PORT FACILITIES

The location of Northport at Marsden Point makes it the northern most multi-purpose port in New Zealand and the closest port to the majority of New Zealand's international markets. The port facility totals 58 hectares of land, with over 30 hectares paved for cargo operations. It has 7,000m² of undercover area available, with a height capacity of 8 metres for the storage of bulk break product. A further 180 hectares of land outside the port is available for port related ventures.

The terminal is a flexible facility catering for large multi-purpose vessels; the current three berths are available for handling dry cargo vessels, with a total wharf length of 570 metres. There is 13 metres of water available at Chart Datum at berths 1 and 2, and 14.5 metres at berth 3. The port also has consent for a fourth berth and has potential to expand to a fifth berth if required. The port is capable of handling containerised freight but currently does not have container cranes, with ships using their self-loading capability accordingly.



SCENE SETTING

NORTHLAND HAS A DIVERSE HISTORY OF MINING AND A SIGNIFICANT ONGOING MINING INDUSTRY PRESENCE. DURING 2009 THE REGION PRODUCED 3.6 MILLION TONNES OF MINERALS WITH A VALUE OF \$35.1 MILLION (EXCLUDING THE VALUE OF CEMENT).

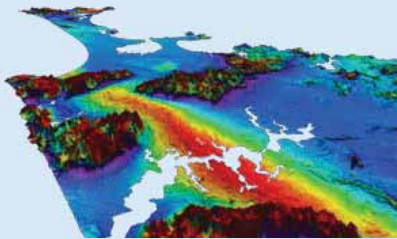


Figure 1

Mineral production in Northland is currently dominated by:

- limestone for the Golden Bay Cement plant at Portland which produces more than half of the cement used in New Zealand and also exports cement;
- high quality china clay, produced at Matauri Bay, for export;
- aggregate, being produced at more than fifty quarries throughout Northland;
- limestone, used mainly as fertiliser in farming, from more than twenty quarries; and
- sand, both from onshore and offshore resources, for building and industrial use.

The minerals sector is seen as having excellent potential for wealth generation. Access to geophysical data reduces the risks associated with mineral exploration by helping to better identify potential mineral-bearing structures. Ground exploration and disturbance is minimised by making exploration more focussed and cost effective.

An initial mineral resource assessment and an economic study (undertaken in 2007) highlighted Northland's mineral potential and the economic benefits of increased mineral production to Northland. The next step was to investigate the feasibility of an airborne geophysical survey as a means of further developing Northland's prospectivity to attract international mineral exploration investment. This aligned with the Government's research and investigation programme of New Zealand's on-shore mineral resources and prospectivity, and as a result the Ministry of Economic Development, Northland Regional Council, and Far North District Council commissioned and funded an airborne geophysical survey of Northland by UTS Aeroquest, and a geological interpretation of the resulting magnetic and radiometric data by GNS Science.

In addition to mineral exploration, the data will have wide applications in fields such as: geological mapping; geothermal exploration; soil mapping for forestry, agriculture and horticulture; identification of potential water-bearing structures; geological hazard assessment; and engineering and construction investigations. In addition to magnetic and radiometric data, the survey will also provide a digital elevation model that will be available for application by the various industry sectors.

Figure 1: Perspective view looking north, showing airborne magnetic data draped over topography with 5 times vertical exaggeration, Far North District of Northland.

AIRBORNE MAGNETIC SURVEYS

An airborne magnetic survey records changes in the Earth's magnetic field caused by different rock types. It is particularly sensitive to differences in the content of magnetic minerals such as iron-rich magnetite. Sedimentary rocks (greywacke and limestone) in Northland have lower magnetite content, while volcanic rocks (e.g., andesite and basalt) generally have much higher magnetite content. Airborne magnetic surveys distinguish between non-magnetic rocks such as greywacke and volcanic rocks such as andesite and basalt. The data generated enables the depth and extent of various layers of rock, often hidden by layers above and only exposed in a few sites or encountered in bores, to be more accurately recorded, reducing the uncertainty involved in geological mapping.

The Northland survey consisted of some 80,000 kilometres of airborne magnetic data. Magnetic features (termed anomalies, as they are distortions of the natural field) can be followed up with site-specific ground geophysical and geochemical surveys at low cost.

The geological 'grain' of Northland is oriented northwest-southeast, so the flight lines of the survey were aligned at right angles to this trend, and ran northeast-southwest. Obtaining subsurface information by drilling is expensive so when geophysical data is added to geological mapping and any other available sources of subsurface information, drilling can be much more effectively targeted, reducing cost.

The magnetic image of Northland is dominated by the Junction Magnetic Anomaly, a narrow band of old (Permian) igneous rocks, which although several kilometres below the surface, has a strong magnetic signal and is deeply coloured on the data image [see Figure 2]. Other prominent features are a series of positive anomalies, strongly coloured areas depicting massifs of basaltic volcanic rocks (Tangihua Complex) and the large positive anomaly beneath Kaipara North Head (Kaipara volcano). In contrast, broad areas of relatively weak magnetic character are predominantly associated with Waipapa terrane basement rocks and younger sedimentary rocks, including those of the Northland Allochthon. Depth slices of the magnetic data reveal the shallow nature of the Tangihua massifs [see Figure 2].

Figure 2

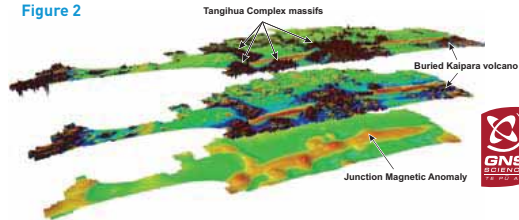


Figure 2: Perspective view of total magnetic data wavelength-filtered for depth ranges of 50-150 metres (top), 250-700 metres (middle), and 2,000 - 4,000 metres (bottom) showing magnetic anomaly source contributions at each depth.

Zooming in on the data reveals that even areas that appear to be magnetically relatively quiet at small scale have a wealth of information for interpreting geology, structure and demagnetisation related to hydrothermal alteration [see Figure 3].

RADIOMETRIC SURVEYS

Radiometric data are measured with a gamma-ray scintillation spectrometer which detects gamma rays emitted naturally by radioactive elements. Gamma rays are tiny bursts of very high frequency, high energy electromagnetic waves that are spontaneously emitted by the nuclei of some isotopes of some elements. They have much shorter wavelengths than most other electromagnetic rays and emanate from depths less than approximately 35 centimetres. The technique therefore has the ability to map soil and exposed bedrock.

All rocks, and materials derived from the rocks, are radioactive, containing detectable amounts of a variety of radioactive elements. Potassium (K), thorium (Th), and uranium (U) are the three most abundant, naturally occurring radioactive elements. Potassium is a major constituent of most rocks and is associated with many mineral deposits.

The potassium data shows positive anomalies associated with some clastic sediments and recent coastal sands, whereas contrasting radiometric responses in the thorium data distinguish the main units of the Northland Allochthon. Potassium enrichment accompanies some hydrothermal alteration and therefore a detailed interpretation of the potassium data may help identify new exploration targets.

However, there are limitations in the use of radiometrics in Northland for mineral exploration, because of the dense vegetation and the use of potassium fertiliser on pasture land. Nevertheless, there are applications in soil mapping (and agriculture, horticulture and forestry), identification of groundwater recharge areas, and geothermal exploration.

Several derived products from such surveying can provide important value-added information. These include total radioactivity, radioactive element ratios (U/Th, U/K and Th/K), and the ternary radioelement map which combine the results for all three elements.

DIGITAL ELEVATION MODEL

Flight elevation data collected during the survey has been processed to produce a digital elevation model that will be useful for a variety of applications such as terrain mapping for road planning, finding north facing slopes for horticulture, and slip hazard assessment related to steep slopes. The resolution is about 40 metres and although not high in detail, the digital elevation model provides a manageable data set that can be used for classification studies.



AVAILABILITY OF THE DATA

A package of digital data from the airborne geophysical survey along with a geological interpretation is available from New Zealand Petroleum & Minerals (refer: Key contacts and resources). It includes geological maps, ground survey gravity data, airborne magnetic and radiometric data, and a compilation of exploration geochemistry.

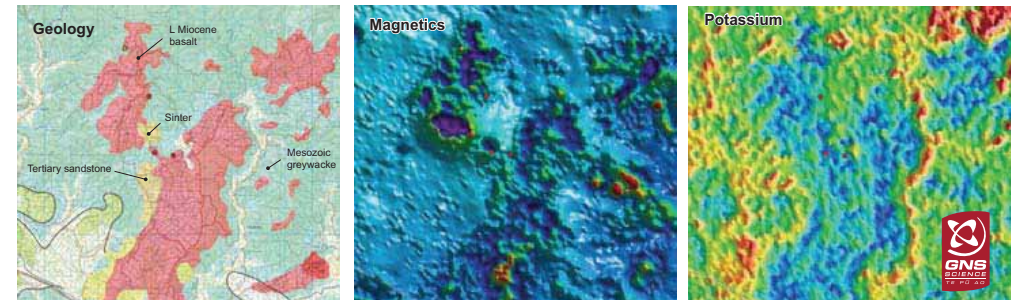
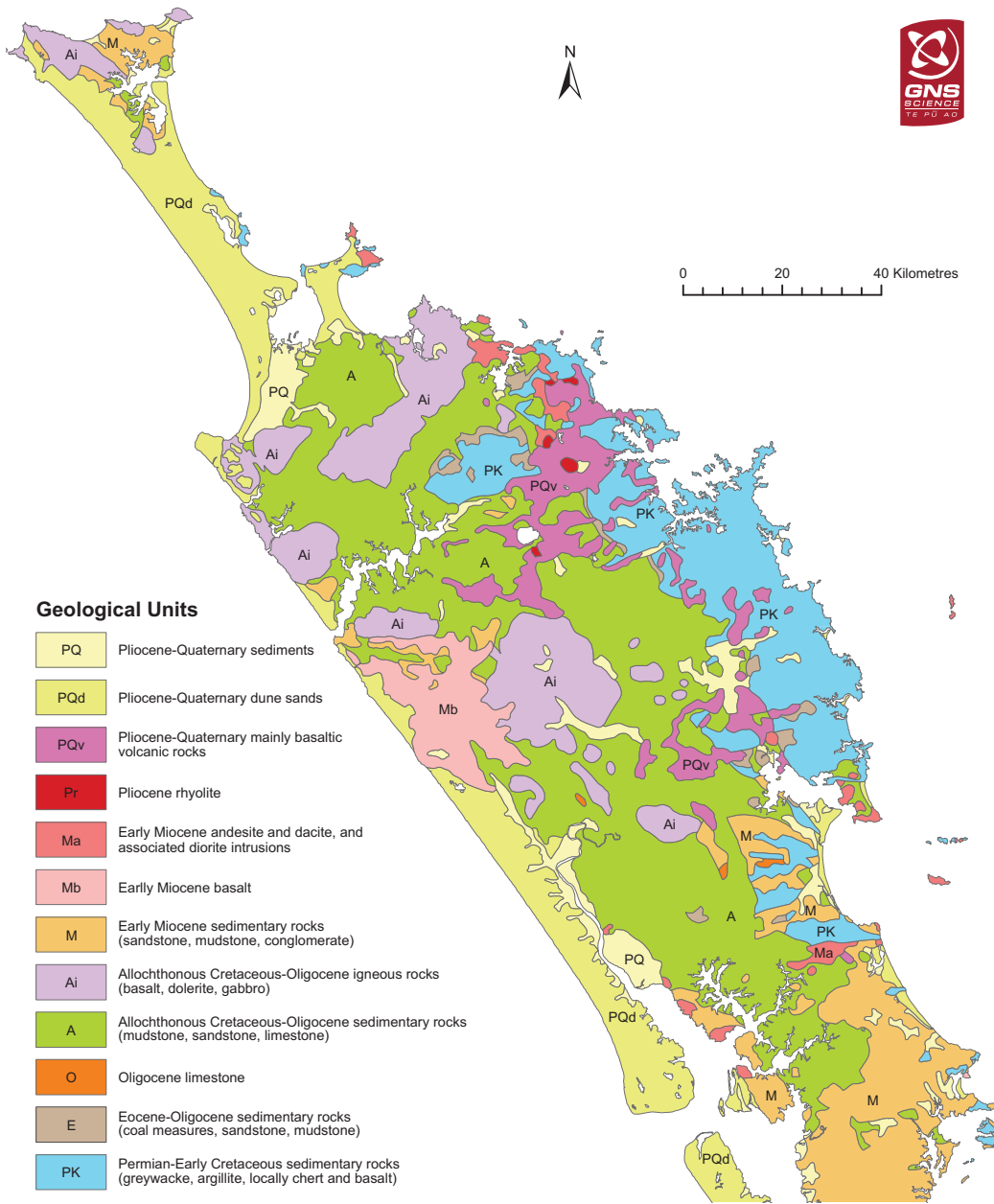


Figure 3: The data reveals that even areas that appear to be relatively magnetically quiet at small scale have a wealth of information for interpreting geology, structure and demagnetisation related to hydrothermal alteration. These images of the Puhipuhi area include silver-gold (orange dots) and mercury (red dots) locations from a mineral deposit database.

Figure 4: Geology of Northland



GEOLOGY

THE NORTHLAND REGION IS GEOLOGICALLY VERY COMPLEX (FIGURES 4 AND 5). THE PENINSULA IS UNDERLAIN BY PREDOMINANTLY SEDIMENTARY ROCKS, BUT WITH SOME EMBEDDED VOLCANIC MATERIAL, LAID DOWN ALONG THE EDGES OF THE AUSTRALIAN AND PACIFIC CONTINENTAL PLATES BETWEEN 290 AND 145 MILLION YEARS AGO.

Tectonic movement around the edges of Gondwanaland has shuffled fragments of the basement rocks from different places to lie side by side under what is now Northland and the adjacent seabed.

There are five basement terranes or fragments under Northland, only three of which are exposed at the surface:

- Caples terrane, a form of greywacke with basalt and tuff, is found in the vicinity of Puketi and Omahuta Forests.
- Waipapa terrane is the greywacke, argillite, minor chert and basalt found along the eastern side of Northland from Whangaroa to Bream Tail.
- Mount Camel terrane, found at Three Kings Islands, Henderson Point, Houhora Heads and the northern part of Karikari Peninsula, consists of old volcanic rocks and sandstone

Buried deep beneath younger rocks are:

- Murihiku terrane – conglomerate, sandstone and mudstone similar to that under the western side of the North Island is present at depth off the west coast of Northland and probably under the western half of the region; and
- Dun Mountain-Maitai terrane – probably a narrow band of mineralised old igneous rocks and associated sedimentary rocks of the same kind as those found in a narrow band extending down the western side of the North Island, across to Nelson and again in Otago.

Layers of sedimentary rocks were then laid down on these basement rocks including, but not present in all localities, coal, sandstone, mudstone and crystalline limestone, as seen at Waro.

An active plate boundary adjacent to Northland about 24 million years ago not only triggered the Northland Allochthon but also resulted in the formation of large andesitic and basaltic volcanoes, mainly offshore in the vicinity of Waipoua-Maunganui Bluff, Kaipara North Head, Whangaroa Harbour, Whangarei Heads and elsewhere.

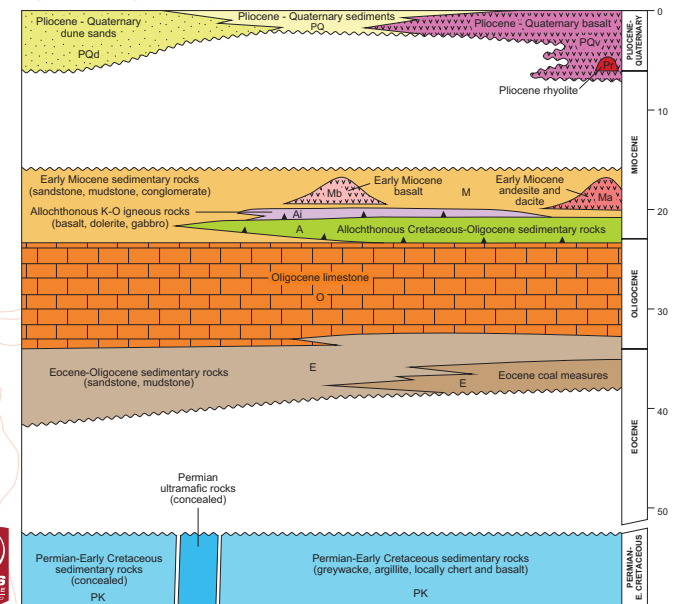
Between 23.5 and 21.5 million years ago the Northland Allochthon, best described as a series of tectonic thrust sheets, up to 4 kilometres thick, comprising displaced sedimentary and igneous rocks, slid across the Northland basin from the northeast. It was caused by the Pacific Plate passing down under the Australian Plate, scraping off sedimentary and igneous rocks which were thrust over the rocks of the deep-water Northland basin, almost as far as the present day position of Auckland.

Periods of volcanic activity from 20 million years ago until very recently have produced fourteen or more volcanic rocks ranging from silica-rich rhyolite to iron-rich basalt, adding plateaux, peaks, lava flows and cones to the landform.

Fluctuating sea levels and variations in the supply of sand from central North Island and Taranaki rivers, as well as the Taranaki coast, have together built peninsulas and sand dune systems, further shaping the region and creating mineral resources.

To further complicate our understanding of the geology of the region, a generally warm, moist climate and freedom from recent glaciation has resulted in weathering of rock to a considerable depth. Deposits of alluvium, sand, peat, lava flows and other volcanic material, have further masked underlying rocks.

Figure 5: Geological history of Northland



INDUSTRIAL MINERALS

NORTHLAND HAS PRODUCED SILICA SAND AND IS PRODUCING CHINA CLAY AND LIMESTONE ON A SIGNIFICANT SCALE. POTENTIAL IS RECOGNISED FOR A RANGE OF OTHER MINERALS INCLUDING CLAY MINERALS, DIATOMITE, FELDSPAR AND ZEOLITE.

CLAYS

Northland contains many deposits of halloysite and kaolinite clays produced by subtropical weathering and hydrothermal alteration of volcanic rocks.

Halloysite clay is produced from mines at Matauri Bay and nearby Mahimahi. The clay was formed by subtropical weathering of rhyolite domes, and is composed of halloysite (50-65%). This high purity halloysite product has exceptional whiteness and brightness, an overall fine particle size, coupled with low levels of impurities like iron. It is exported to more than twenty countries for the manufacture of high-quality ceramics, principally porcelain, but also fine bone china and technical ceramics. Up to about 80,000 tpa (tonnes per annum) of raw clay is mined from the Matauri Bay and Mahimahi deposits with 50% of plant feed from each.

At Maungaparurua, relatively soft halloysite-rich clay occurs in an upper 8-30 metres (averaging 15 metres) thick zone, 600 to 700 metres in diameter. Drilling has resulted in a resource estimate of 8 Mt of clay that could yield 2.25 Mt of premium product. Drilling at several other clay prospects has indicated resources of halloysite at Te Pene, Ocean Beach (Whangarei Heads), and Pukekaroro Hills (Kaiwaka). Eastern Northland also has deposits of kaolinite formed by hydrothermal alteration and weathering of volcanic and sedimentary rocks, and fireclays associated with coal measures. Kaolinite has been mined for pottery clay and for the manufacture of industrial refractory products.

SAND

Beach and dune sands on the east coast between Whangarei Heads and Warkworth contain 50 to 75% plagioclase feldspar. At the northern end (Marsden Point) of the Ruakaka Flats, a strip 240 metres wide, 7 metres deep, and 12 kilometres in length is estimated to contain 50 Mt of sand and would yield, at 60% recovery, 30 Mt of saleable minerals. At the southern end of the flats, where the sand dunes are more than 12.2 metres high, and 30.5-45.7 metres deep, the total quantity of sand present is assumed to exceed 350 Mt.

In the past, sand from offshore Pouto (Kaipara Harbour) has been used as a source of feldspar in glass manufacture.

At Parengarenga Harbour on the east coast, Kokota Sandspit, which forms the south head of the harbour, has been estimated to have resources of 30 - 80 million m³ of high quality silica glass sand. High-quality quartz sand also occurs at Ngakengo Beach, just to the north of Parengarenga Harbour entrance, and on the east coast of the Aupouri Peninsula, south of Parengarenga Harbour, and inland on parts of the peninsula itself. Total resources have been estimated at about 120 Mt on the northern part of Kokota Spit, with a regional resource of about 1,500 Mt.

In Kaipara Harbour, high level Early Quaternary coastal sands from the eastern shores of the harbour are worked to provide industrial sand for the Auckland market (e.g., wallboard, cement making, and foundry sand). There is possibly 10 Mt of silica sand in the Kaipara Harbour area which extends to the south into the adjoining Auckland region.

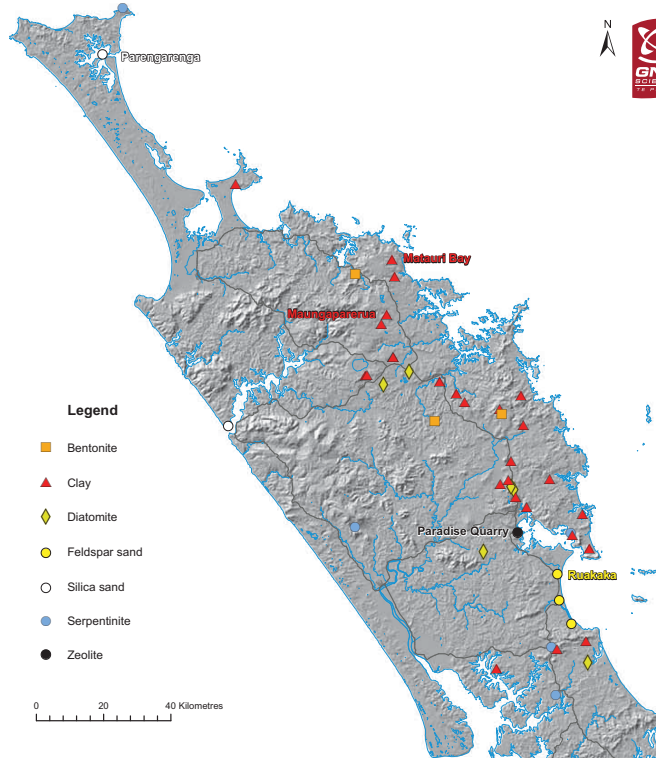
ZEOLITE

Veins of zeolite occur throughout the Tangihua Complex volcanic rocks and associated sediments at North Cape and elsewhere, and in Miocene marine tuffs formed by the alteration of volcanic glass. Southeast of Whangarei, a 5 metre thick, hard, altered, siliceous tuff consists of mordenite and lesser amounts of quartz and chlorite. In the Kaipara Harbour area, tuff beds contain erionite and minor chabazite and clinoptilolite.

OTHER INDUSTRIAL MINERALS

Potential exists for the discovery and development of other industrial minerals in the region. Those recorded include bentonite, diatomite, fireclay, and barite. Several serpentine deposits have been worked as a source of magnesium for agriculture.

Figure 8: Occurrences of non-metallic mineral deposits in Northland



MINING LEGISLATION

MINERAL RIGHTS IN NEW ZEALAND ARE GRANTED UNDER THE CROWN MINERALS ACT 1991, WHICH IS ADMINISTERED BY NEW ZEALAND PETROLEUM & MINERALS (REFER: KEY CONTACTS AND RESOURCES).

A company or person wanting to undertake prospecting, exploration or mining of a Crown owned mineral needs to hold a permit granted under the Act.

Crown owned minerals include all naturally occurring gold and silver, substantial amounts of coal and other metallic and non-metallic minerals, and all petroleum.

The Crown Minerals Act 1991 however is only one part of the wider regulatory framework for minerals. While the acquisition of a permit under the Act is necessary, it is not sufficient to commence exploration or mining activities. Environmental approvals and land owner access arrangements are also required.

CROWN MINERALS ACT 1991

The Crown Minerals Act 1991, minerals programmes and associated regulations, govern the allocation and management of rights to Crown-owned minerals and the payment of royalties to the Crown for the use of those minerals.

While the Act provides the legislative framework, the minerals programmes establish the policies, procedures and provisions to provide for the efficient allocation of rights to Crown-owned minerals and a fair financial return to the Crown. The regulations provide specific requirements for permit application processes, reporting and notification obligations, and fees payable.

Māori are New Zealand's indigenous (First Nations') people. In managing rights to crown owned minerals the Government is committed to dialogue with local Māori (iwi and hapū), who already enjoy a good relationship with local government, and give the peoples view full consideration.

Three types of permit may be obtained, allowing for a varying intensity of activities in the search for and extraction of minerals:

PROSPECTING PERMITS are issued for the purpose of identifying land likely to contain exploitable minerals and are initially granted for up to two years and may be extended for a further two years. Usually the work undertaken is low impact, such as literature research, geological mapping, rock chip and soil sampling, and aerial surveys.

EXPLORATION PERMITS are intended for more detailed work. Permits are granted for the purpose of identifying minerals deposits or occurrences and evaluating the feasibility of mining a deposit. Activities include geological, geophysical and geochemical surveys, drilling, bulk sampling and mine feasibility studies. An exploration permit can be granted for up to five years. A further five year extension may be granted if justified for further exploration purposes, in conjunction with a minimum 50% surrender of permit area. Where a discovery has been made, an appraisal extension may be granted, for all the land comprised in the permit to which the discovery relates, for a period sufficient to enable the permit holder to carry out the appraisal work for the discovery.

MINING PERMITS are granted to enable extraction of minerals. The nature and extent of the deposit must be clearly established from prior exploration. A mining permit can be granted for up to forty years.



ENVIRONMENTAL CONSENTS

Effects of exploration or mining on the environment are regulated through the Resource Management Act 1991. This Act aims to promote sustainable management of natural and physical resources through the assessment of the potential effects of an activity.

Regional and district councils administer the Act and grant resource consents for all activities that have an effect on the environment, in accordance with regional and district planning instruments (refer: Key contacts and resources). Mining and exploration activities are treated no differently to other activities that have a similar impact.

Resource consents are typically required for activities such as taking or diverting water, or discharging contaminants into water, air or onto the land. Some exploration activities, in particular minimum impact activities, are often predetermined as permitted activities. The use of land for a mining operation (open pit or underground) also requires resource consent approval.

HEALTH AND SAFETY LAND ACCESS

Mining safety is administered by the Department of Labour under the provisions of the Health and Safety in Employment Act 1992, two mining-specific regulations, and explosives management under the Hazardous Substances and New Organisms Act 1996.

The mining regulations are: the Mining Administration Regulations, which prescribe the qualifications required for managing mines and quarries; and the Health and Safety in Employment (Mining – Underground) Regulations 1999, which prescribe standards for record-keeping, notifications, monitoring, and some practice requirements.

The granting of a permit under the Crown Minerals Act 1991 does not confer a right of access to any land. Other than for minimum impact activities, access to land for exploration and mining is determined by individual permit holders negotiating directly with affected land owners, including Māori land owners, and occupiers. Access arrangements of more than six months duration are binding on subsequent owners of the land if notated on the land title.

In the case of Crown-owned land, such as public conservation estate, applications for access are assessed and determined by the Minister responsible for that land.

For minimum impact activities, access can be gained to most classes of land by giving the landowner ten days written notice prior to commencing activities. Some exceptions include gaining access to the conservation estate or residential areas, for which the owner's written consent is required.

To undertake minimum impact activity on Māori land, the permit holder must first make reasonable efforts to consult with the owners of the land (who can be identified by the registrar of the Māori Land Court), and give ten working days' notice to the local iwi authority of the land to be accessed.

WHAT IS THE NEW ZEALAND ADVANTAGE?

- 1st in the world for protecting investors (World Bank).
- 3rd in the world for ease of doing business (World Bank).
- 2nd in the world for economic freedom (Fraser Institute).
- 16th in the world for best jurisdiction for investment (Fraser Institute).
- An extensive network of free trade agreements that includes China, ASEAN countries, and Australia.
- A business-friendly taxation system that supports capital expansion, research and development and international investment.
- Proactive Government support for international investors to relocate and/or collaborate with New Zealand companies.

THE NEW ZEALAND INVESTMENT CLIMATE

NEW ZEALAND OFFERS A NUMBER OF BENEFITS FOR CORPORATE INVESTORS:

EASE OF DOING BUSINESS

New Zealand ranks 3rd in the world for ease of doing business, according to the World Bank Doing Business report 2011. Starting a business in New Zealand takes just one day, while registering a property takes just two. New District Court rules have been introduced to make the process for enforcing contracts user friendly. New Zealand also has a business-friendly taxation system that supports capital development, research and development and international investment.

ABUNDANT RESOURCES

New Zealand has abundant water and arable land, and a temperate climate that supports sustainable food production. We have a stable supply of gas and electricity with up to 75% of our electricity being generated by renewable energy sources in any given week. Overall energy self-sufficiency is around 90%, with coal exports balancing dependency on imported oil. Hydroelectric schemes, geothermal stations and wind farms are increasingly supplementing natural gas for energy generation.

SAFE, STABLE AND SECURE BUSINESS ENVIRONMENT

New Zealand ranks 1st in the world for protecting investors (World Bank, Doing Business report 2011); 1st equal in the world for lack of corruption (Transparency International, Corruption Perceptions Index 2010); and 1st in the world for absence of protectionism (IMD, World Competitiveness Yearbook 2010). New Zealand has a strong banking sector that weathered the global economic crisis well. The parents of the four largest banks are Australian-owned and are all in the top 20 of the Global Finance World's Safest Banks index.

EFFICIENT, MARKET-ORIENTED ECONOMY

With more than a decade of economic restructuring, New Zealand has a stable and internationally competitive economy. The privatisation of several utilities and state services, has given rise to one of the most efficient and competition friendly economies in the world. Furthermore, a free and independent media in New Zealand ensures a high level of transparency in the corporate and government decision-making processes.

New Zealand boasts sound macroeconomic foundations:

- A relatively strong fiscal position and a commitment to reduce net debt to 20% of GDP by the early 2020's.
- Legislative requirement are in place to maintain public debt at prudent levels.
- Among the top 20 rated sovereigns in the world.
- A low-inflation environment, with independent monetary policy and a focus on price stability. We have a long-standing flexible exchange rate. There are no exchange controls or restrictions on repatriation of funds.

BANKING

The Reserve Bank of New Zealand supervises New Zealand's banking system, with its main function being to implement Government monetary policy according to annual directives. It also registers and supervises other banks. New Zealand has an open door policy on bank registration. There are several major trading banks and numerous other banking institutions. Many of the big international banks are represented in New Zealand through agents or sales offices.

SIMPLE TAX SYSTEM

New Zealand has a competitive and low-compliance tax system. We are 3rd lowest in the OECD for time taken for taxpayers to comply with tax obligations (World Bank Doing Business, Paying Taxes 2010). In 2009, the corporate income tax rate was reduced from 33% to 30%.

In New Zealand there is:

- No payroll tax.
- No social security tax (voluntary KiwiSaver was introduced in 2007).
- No capital gains tax. We have recoverable Goods and Services (VAT) Tax, and tax-deductible business expenses (including research and development) and depreciation.

LEGISLATIVE FRAMEWORK

A large number of investments do not need approvals beyond the normal legislative business framework for New Zealand-based companies. The Overseas Investment Act 2005 regulates the acquisitions by overseas entities of 25% or more ownership or control interests in sensitive New Zealand land and significant business assets.

There are three categories of sensitive New Zealand assets:

1. Sensitive land, for example, farm land, historical landmarks, regional parks;
2. Significant business assets: assets (shares or business) of more than \$100 million; and
3. Fishing quota.

KEY CONTACTS AND RESOURCES



FAR NORTH DISTRICT COUNCIL – welcomes investors to the Far North and available to provide practical help and support; offers a business navigation service through Council processes to ensure that information and decisions are made in timely manner; contact Council's Economic Development Office for assistance.

w: www.fndc.govt.nz
e: ask.us@fndc.govt.nz
p: +64 9 401 5200



NORTHLAND REGIONAL COUNCIL – one of the region's primary environmental guardians; aims to protect Northland's land, water, coast and air while allowing for sustainable development; responsible for promoting the region's economic, social and cultural wellbeing.

w: www.nrc.govt.nz
e: mailroom@nrc.govt.nz
p: +64 9 438 4639



NEW ZEALAND PETROLEUM & MINERALS – manages the New Zealand Government's oil, gas, minerals and coal resources, known as the Crown Mineral Estate; advises on policy, operational regulation and promotes investment in the minerals estate; Government's main mineral resource agency with a comprehensive exploration database and drill core and samples library.

w: www.nzpam.govt.nz
e: nzpam@med.govt.nz
p: (International) +64 3 962 6179
(within New Zealand Freephone) 0508 263 782



ENTERPRISE NORTHLAND - the region's economic development agency actively assisting companies or individual investors to relocate their businesses to Northland establishing greenfield operations and investing in and working with Northland companies.

w: www.enterprisenorthland.com
e: info@enterprisenorthland.com
p: +64 9 438 5110

COMPANIES OFFICE – government agency responsible for the administration of corporate body registers, including the (New Zealand) Companies Register.
w: www.business.govt.nz/companies
p: (International) +64 3 962 2602
(within New Zealand Freephone) 0508 266 726

DEPARTMENT OF LABOUR – administers mining safety in New Zealand.
w: www.dol.govt.nz
e: info@dol.govt.nz
p: +64 9 969 2950

DIRECTORY OF IWI AND MĀORI ORGANISATIONS – Te Kāhui Māngai provides information on iwi (tribes) in New Zealand, including their rohe, hapū, marae and representative organisations.
w: www.tkm.govt.nz

EXITO – Industry Training Organisation for the extractive industries; assists by setting skill standards, developing national qualifications, identifying and managing training needs, providing skills leadership and investing in industry training.
w: www.exito.org.nz
e: info@exito.org.nz
p: +64 9 368 4890

GNS SCIENCE – New Zealand's leading provider of Earth, geoscience and isotope research and consultancy services; prime source of information on the geology of New Zealand's mineral deposits and their setting.
w: www.gns.cri.nz
p: +64 4 570 1444

IMMIGRATION NEW ZEALAND – provides facilitation services for businesses sourcing or relocating international staff.
w: www.immigration.govt.nz
p: +64 9 914 4100

INTERNAL REVENUE DEPARTMENT – website provides information about individual and business taxation in New Zealand, including all the necessary procedures and forms.
w: www.ird.govt.nz
p: +64 4 978 0779

KAIPARA DISTRICT COUNCIL – local territorial authority north of the Auckland region, adjoining the Far North District on the West Coast and Whangarei on the East Coast; provides a case management service to assist businesses invest in the area.
w: www.kaipara.govt.nz
e: council@kaipara.govt.nz
p: +64 9 439 3123

LINZ – Land Information New Zealand; New Zealand government department responsible for land titles, geodetic and cadastral survey systems, topographic information, hydrographic information, and managing Crown property.
w: www.linz.govt.nz
e: customersupport@linz.govt.nz
p: (International) +64 4 460 0110
(within New Zealand Freephone) 0800 665 463

MĀORI LAND COURT – Te Kooti Whenua Māori maintains the records of title and ownership information of Māori land and makes available Māori land information held by the Court (Māori Land Online website)
w: www.justice.govt.nz/courts/maori-land-court
e: mlctaitokerau@justice.govt.nz
p: +64 9 983 9940

MINISTRY OF ECONOMIC DEVELOPMENT – focus on sustainable economic development; website provides information about all aspects of New Zealand's economic development policies including legal framework, regulation of specific markets, policy-making and implementation.
w: www.med.govt.nz
p: +64 4 472 0030

MINISTRY OF SOCIAL DEVELOPMENT – offers a range of free services to help companies find and train full-time, part-time or casual workers to fill skill or labour shortages.
w: www.msd.govt.nz
p: +64 4 916 3300

CONTINUED ON NEXT PAGE



KEY CONTACTS AND RESOURCES CONTINUED

NEW ZEALAND LAW SOCIETY - can help should you need to use legal or other expert advice and to locate a suitable law firm.

w: www.lawsociety.org.nz
e: inquiries@lawsociety.org.nz
p: +64 4 472 7837

NEW ZEALAND MINERALS INDUSTRY ASSOCIATION – an incorporated society supporting the explorers and producers of New Zealand’s mineral resources.

w: www.minerals.co.nz
e: nzmia@xtra.co.nz
p: +64 4 473 7556

NEW ZEALAND TRADE AND ENTERPRISE - the national economic development agency; a specialist investment team within facilitates international investment into New Zealand by providing information to prospective investors and assisting them with setting up a new operation in New Zealand; network of 9 New Zealand and 37 international offices.

w: www.nzte.govt.nz

NORTHPORT - the northern most multi-purpose port in New Zealand and the closest port to the majority of New Zealand’s international markets.

w: www.northport.co.nz
p: +64 9 432 5010

NZX – New Zealand stock exchange; operates the New Zealand securities, derivatives and energy markets, builds and maintains the infrastructure on which they operate, and provides a range of information and data to support market growth and development on a global scale.

w: www.nzxgroup.com
e: info@nzx.com
p: +64 4 472 7599

OVERSEAS INVESTMENT OFFICE – part of Land Information New Zealand and administers the New Zealand Government’s foreign investment policies; core work to assess applications for consent from foreigners who intend making substantial investments in New Zealand.

w: www.linz.govt.nz
e: oiio@linz.govt.nz
p: +64 4 462 4490

STRATERRA – an incorporated society launched in 2008 offering a collective voice for the New Zealand minerals and mining sector.

w: www.straterra.co.nz
p: +64 4 473 7361

TERRALINK INTERNATIONAL – New Zealand’s most trusted land and property information provider; holds, maintains and manages New Zealand’s most comprehensive, accurate and up-to-date land and property database.

w: www.terralink.co.nz
e: info@terralink.co.nz
p: [International] +64 4 915 6000
[within New Zealand Freephone] 0508 483 772

THE KNOWLEDGE BASKET – provides online access to a database of New Zealand Acts, Regulations, Bills etc.
w: www.knowledge-basket.co.nz
p: +64 9 621 0476

WHANGAREI DISTRICT COUNCIL – welcomes investment in the District and provides practical help and support for anyone looking to live, work, play and invest in Whangarei; contact the Council’s Economic Development team.

w: www.wdc.govt.nz
e: mailroom@wdc.govt.nz
p: +64 9 430 4200





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- 