In this paper I propose to do three things: to identify the very different implications of the different stages of the mining and the oil and gas sequence, to discuss the basics of the Crown Minerals Act and associated legislation, with particular reference to Māori interests, and to touch on a few points of comparison with Canada.

**The Sequence of Operations in Mining and in Oil and Gas**

There is an enormous diversity in the minerals industry and in the oil and gas industry. A mineral exploration company may be targeting particular metallic minerals, industrial minerals, construction materials, or coal. While we might think of something like gold as our target, there are important niches for more mundane substances like bentonite or gypsum. If something is found, then there are different kinds of mine that may be built; open pit or underground? Solution mining? A small alluvial gold operation may need a backhoe and a trommel and little more. In the oil and gas industry, targets are less diverse, but (for example) a shale gas play will require much more surface and subsurface activity than a light free-flowing oil field.

Geology is hugely important. It dictates where the targets are to be found, and how they can be developed. One of the implications is that a company has only limited control over its location; and land use planners cannot readily say in advance what lands should be allocated to mineral production.

It is useful to understand the sequence of mineral development. For hard rock minerals (not oil or gas) the sequence starts with strategy, where companies decide what type of target and geology they are good at. Reconnaissance is next, perhaps as desk work using the existing knowledge of an area. Wide-scale methods of exploration may follow, such as aerial geophysical surveying. From this work specific anomalies may be detected that merit closer investigation, by ground geology, geochemical sampling, and ground-based geophysical work. At some point most targets call for exploration by diamond drilling, to extract rock samples from bores that may be a couple of hundred meters deep. (Diamond drilling is therefore very different from oil and gas drilling.) Drilling intensifies and bulk samples may be taken. A company usually obtains a feasibility study that determines exactly what kind of mine can be developed, taking into account geology, metallurgy, environment, access, market, financial and social factors. If it is followed by a production decision then mine construction

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1 There is a useful graphic on this point, and much more, in K Ruckstuhl et al, Māori and Mining (Māori and Mining Research Team, University of Otago, 2013), p 38.
or development proceeds, followed eventually by production. Rehabilitation will accompany production and continue after it ends. In the oil and gas sector, exploration relies more on geophysical techniques. They may be followed by the drilling of an exploratory well that is a much more expensive proposition than a diamond drilling programme. On the other hand, a petroleum exploration well can be put into production relatively quickly if oil is discovered. A gas project depends on pipelines and markets, so is more complicated.

This sequence of development is variable and by no means universal. For example, coal and dimension stone (e.g., marble) require little expenditure on exploration. But understanding the existence of a sequence is very useful to understand the behaviour of companies and to understand what to watch for on behalf of communities and other affected parties. Among the insights that it produces are the following.

- Exploration is very different from development or production.
- Exploration is a process that is sometimes long drawn out. Often a company obtains results that may justify doing more work on the property but do not prove conclusively that a mine can be opened and operated profitably. The fact that some mineralization is found does not mean that there is enough or that it is at a sufficient concentration.
- Exploration is risky. In both hardrock and oil and gas, many exploration programmes fail to find a commercial deposit, and even fewer get brought into production.
- Banks do not lend for exploration work. Rather, companies raise funds on the stock exchange and through private equity investors. These investors are ready for exploration programmes that do not work out. They do not expect an income stream to appear. What attracts them is the possibility that if a project does work out then it may pay off very well. It is high-risk high-reward investment.
- Exploration companies without producing assets (“juniors”) are usually much smaller than “majors” that have multiple producing mines or oilfields. They are strongly oriented towards the needs of raising capital from specialist stock exchange investors.
- As a property progresses through the sequence, the risk and uncertainty is reduced, the area of interest shrinks, the environmental impact increases, the capital expenditure increases dramatically.
- A mining or petroleum company must usually make all of its capital investment in developing a project before any income starts to flow from it. Large projects require colossal amounts of capital – in the tens of billions of dollars – but generally do not employ large numbers of people.
- As well as the risk of not finding an economic deposit, companies also face price risks (commodity prices fluctuate a lot), technical risks in construction and operation, regulatory risks in failing to obtain permits such as environmental approvals, and (in some countries) political risks of delay or expropriation.

These characteristics affect the impact that mining and petroleum development can have on the environment and the community. For example, it is not really useful to ask an early-stage exploration company what kind of mine it will build because it will have no idea. On the other hand, its exploration activity is aimed at developing a producing mine if it is at all possible.
NZ Mining and Petroleum Law

Most of the relevant New Zealand law is found in the Crown Minerals Act 1991 (CMA), regulations made under it, and “minerals programmes” made under it. The Act applies to petroleum and other minerals, but there are separate regulations and programmes for the two classes of substance. The Act was amended in 2013, with many changes of detail and procedure, and new programmes were issued. A great deal of other law is relevant to a petroleum or mining operation, especially the Resource Management Act 1991 (the RMA) and the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (the EEZ Act) and the Health and Safety in Employment Act 1992.

Ownership

The first matter to consider is ownership or underlying rights to minerals. There are several different classes of minerals.

- Petroleum (ie oil and gas), gold, silver, and uranium under all lands is vested in the Crown by section 10 of the Act. This was contested by claimants in the Petroleum Report, but the Crown did not adopt the Waitangi Tribunal’s recommendation to find a Treaty interest.
- Pounamu in most of the the South Island is vested in Te Rūnanga o Ngāi Tahu under the Ngai Tahu (Pounamu Vesting) Act 1997.
- The Crown generally has rights to other minerals in or under Crown land such as national parks and stewardship land in the hands of the Department of Conservation. The same goes for submerged lands in the exclusive economic zone, continental shelf, and territorial sea, subject to the Marine and Coastal Area (Takutai Moana) Act 2011.
- Minerals in or under private land may be owned by the land owner, by another person, or by the Crown. It can often be difficult to find out because the answer may depend on statutes like the Land Acts of the nineteenth century and on particular land transactions, and because of variation in the exact terms in which minerals or specific substances were excepted from a Crown grant or like instrument.
- Māori land owners under Te Ture Whenua Maori Act 1993 generally hold rights to the minerals in their land except for the section 10 minerals. Special provisions give additional protection from mineral activity: certain lands protected from entry without consent, additional notice requirements, and protection for waahi tapu (section 51) and no Order in Council to force an access agreement (section 66(1)). The Maori Trustee has a role in some cases: section 80.

Permits

Much of the Crown Minerals Act is concerned with the granting of permits to give companies rights to Crown-owned minerals. There are prospecting, exploration and mining permits for the different stages of the minerals continuum (on which see below). The methods for the granting of permits is laid down in the minerals programmes. Exploration permits are usually the key entry point. In the petroleum sector, they can only be obtained in competitive

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2 There is a good up-to-date summary of mining and petroleum law with respect to Māori in K Ruckstuhl et al, above n 1, pp 29-35.

Petroleum Exploration Permit Rounds, which are held annually. The Minister through New Zealand Petroleum and Minerals (NZPAM) decides which areas or blocks to include in a round, and companies put in tenders or bids, usually bids for a staged work programme. The government looks for bids that will commit to the most active work programme. The underlying policy is one of maximizing exploration activity and knowledge of the publicly-owned resource. It is also a policy of “use it or lose it”; if a permit holder does not carry out the promised work then the permit is cancelled. If a company with a PEP makes a discovery, it usually upgrades to a Petroleum Mining Permit under section 36 of the Act, which gives the company a strong assurance that it will be able to do so. For minerals other than petroleum, exploration permits are more usually awarded by “acceptable work programme offer” which is in effect first-in-first-served. This is more suited to the variegated nature of non-petroleum mineral resources. However NZPAM is also trying out competitive tendering in the sector.

The minerals programmes try to make the application procedures clear and straightforward, but companies sometimes complain that it is a long and frustrating experience. Companies also complain about the expense of making applications and of maintaining their permits in force. In the amendments of 2013, Parliament introduced Tier 1 and Tier 2 permits in an effort to separate projects that need careful consideration (Tier 1) and those that are simpler, eg ordinary quarries or alluvial gold workings (Tier 2). All petroleum operations are in Tier 1.

Land Access

The Act provides, in sections 47 to 89, for companies to be able to obtain access to the land where Crown minerals may be found. It is relatively easy to obtain access for minimum impact activities such as exploration using hand-held equipment. For other activities, an “access arrangement” is required. In the case of a dispute over access in the petroleum sector, companies can obtain an override of a land owner’s refusal to grant an access arrangement. In the non-petroleum sector, it is much more difficult, if not impossible, for a company to do so. Parallel procedures are in place for access to Crown land. They have been amended after the “Schedule Four” controversy of 2009 and 2010.

Operations

The CMA imposes certain controls on the activities of a company that holds a permit. (This is in addition to the controls imposed under other legislation, such as the RMA or the Health and Safety in Employment Act.) Conditions are imposed as part of the permit. The permit holder must provide NZPAM technical reports and annual reports of activity. The holder of a Tier 1 permit must come to an annual review meeting with NZPAM, under section 33D. The purpose of the meeting is monitoring progress in the work programme and discussion with any regulatory agency that NZPAM invites to the meeting.) The Regulations under the Act impose further operational requirements. For non-petroleum minerals they are fairly general. However under the Crown Minerals (Petroleum) Regulations an operator is subject to a number of obligations to give notice of its intention to begin drilling a well, completing a well, well stimulation operations, and various other specified operations. However in most cases the control is relatively loose, as an obligation to give notice rather than an obligation to obtain consent. (This is contrast with the pattern of tighter petroleum regulation found in other countries such as Australia or Canada.) The amendments of 2013 make an effort to improve

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4 Minerals Programme for Petroleum 2013, 7.0.
5 Minerals Programme for Minerals (Excluding Petroleum) 2013, 6.0.
operational capacity, in requiring applicants for Tier 1 permits to satisfy the Minister that they have the capability and systems that are likely to be required to meet the health and safety and environmental requirements for the activities that they propose: section 29A(2). Sections 33A and 33B attempt to co-ordinate the CMA and the health and safety legislation better. (These amendments reflect efforts to improve regulation after the Pike River Mine disaster.)

Generally, it is arguable that more work is needed to regulate the details of petroleum and other mineral operations efficiently and effectively.

Finally, if minerals are produced from operations in a permit area, royalties are payable on the petroleum or other minerals extracted.

Provisions in the CMA Specific to Māori

A number of provisions of the CMA and its Regulations and programmes can be identified for relevance to Māori interests. (One should also note the significant provisions of the RMA in relation to Māori; they can often be at least as important as those of the CMA. The EEZ Act provides for Māori interests but with a substantially different Treaty clause.)

- CMA s 4 requires the Minister and all others exercising powers under it to have regard to the principles of the Treaty of Waitangi (Te Tiriti o Waitangi). Some of the principles that may be relevant here are a duty of the Crown to consult Māori (beyond ordinary duties to consider public submissions), a duty to ensure the protection of Māori interests in lands and resources, a duty to avoid prejudice to the redress of outstanding Treaty claims, and a general duty of partnership which requires both parties to act reasonably and in good faith.

- The duty of consultation is made the subject of rules and procedures in the minerals programmes: Minerals Programme for Minerals (Excluding Petroleum) 2013 2.0; Minerals Programme for Petroleum 2013, 2.0. The Programmes specify when Minister or NZPAM will consult – on various applications for permits, on plans for a PEP Round. Iwi and hapū can ask for areas of land to be excluded from a permit, from an area available for alluvial gold mining, or from a PEP Round. Iwi and hapū are therefore consulted on most permit applications or the procedures that will lead to permit applications. Greenpeace of NZ Inc v Minister of Energy and Resources [2012] NZHC 1422 considered minerals programme provisions similar to the current ones. The Court found that the government had consulted extensively in developing the Minerals Programme and had offered to meet in advance of the block offer of 2008, and held that Te Whanau-a-Apanui had been offered ample opportunity to be consulted and heard on its concerns for its taonga. [136], and that the Crown had not breached its Treaty obligations. [140]

- Crown Minerals Protocols have been made between NZPAM and different iwi and hapū under various deeds of settlement: Minerals Programme for Minerals (Excluding Petroleum) 2013 2.11 and Sched 2; Minerals Programme for Petroleum 2013, 2.9 and Sched 1.

- A number of areas of land have been identified as being of particular significance for the mana of iwi and cannot be included in permits: CMA s 14(2)(c); Minerals Programme for Minerals (Excluding Petroleum) 2013, Sched 3; Minerals Programme for Petroleum 2013 3.1.

- The holder of a Tier 1 permit must report annually to NZPAM on its engagement with iwi or hapū whose rohe includes the permit or are otherwise affected by the permit: section 33C. (Regulations may require the same of Tier 2 permittees, but do not so require at present.)
Land access protections for Māori land noted above: section 51, 66.

Waitangi Tribunal Determinations

The Waitangi Tribunal has made several reports on minerals. The Petroleum Report (Wai 796, 2003), noted above, analyzed the Petroleum Act 1937 which declared that all petroleum is vested in the Crown. The government did not accept the Tribunal’s argument for what it called a “Treaty interest” arising from the expropriation. The Report on the Management of the Petroleum Resource (Wai 796, 2011) found a number of systemic flaws in the present regime that caused Māori interests to be minimized. Advisory committees, full protection for Māori land, and a requirement to act in accordance with the principles of the Treaty, are examples of the changes that the Report recommended. Another relevant Report, concerning goldfields and mineral development, is the Hauraki Report (Wai 686, 2006).

Canadian Comparisons

There are striking comparisons to be made between New Zealand and Canada. Indigenous people in Canada have considerable experience of dealing with petroleum and mineral activity on a large scale. Some indigenous peoples have done well out of oil and gas on their reserves, or have bargained effectively for good-quality “impact and benefit agreements” for their communities. Under modern land claim settlement agreements, some indigenous people have obtained significant mineral assets and significant regulatory authority over resource development. Recently, the Tsilhqot’in First Nation of British Columbia won an important victory in obtaining rejection of Taseko Mines Ltd’s proposed New Prosperity Mine, saving a lake of great significance to them. Responsible members of the mineral industry are putting a great deal of effort into better relationships with aboriginal communities. All too often, however, first nations have paid a high price for the effect of mining and oil and gas activities on their traditional lands. At present, First Nations are strenuous in their opposition to the Northern Gateway pipeline project that would move petroleum from the Athabasca oil sands to a Pacific sea port at Kitimat.

Key legal concepts such aboriginal title are shared by the New Zealand and Canadian legal systems. Most recently a First Nation, the Tsilhqot’in again as it happens, scored a historic victory with the first substantive affirmation of aboriginal title to a tract of land. The Supreme Court of Canada has also recently affirmed the duty of a provincial governments to take care of harvesting and other treaty rights in treaty areas. However, it is important to see that such treaties in Canada were different from the Treaty of Waitangi; most Canadian treaties were surrenders of aboriginal title in exchange for modest benefits. What is significant in Canada is the recognition and affirmation in the Constitution of the existing aboriginal and

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6 For example, legislation enacted pursuant to the Nunavut Land Claim Settlement Agreement: Nunavut Land Claims Agreement Act, SC 1993 c 29. Nunavut Tunngavik Inc holds title to minerals in 38,000 km² and makes its own decisions about the allocation of rights to them: www.ntilands.com/minerals.
8 Tsilhqot’in Nation v British Columbia, 2014 SCC 44.
9 Grassy Narrows First Nation v Ontario (Natural Resources), 2014 SCC 48.
treaty rights of the aboriginal peoples of Canada. Legal decisions, especially *Delgamuukw v British Columbia*\(^\text{11}\) and *Haida Nation v British Columbia (Minister of Forests)*\(^\text{12}\) have confirmed that the protected rights include minerals, and are found in land covered by surrenders of aboriginal title as well as land not so affected. The courts have decided that this protection includes a duty of consultation, so the result is similar to one of New Zealand’s Treaty principles though by a different legal route. *Haida Nation* held that the Crown must engage in consultation where proposed Crown conduct could adversely affect claims to Aboriginal interests in land, with a view to accommodating, where appropriate, claimed interests before authorizing any activities that may adversely affect those interests. The nature of the consultation required would vary with the strength of the aboriginal claim and the potential for adverse effect. *Ross River Dena Council v Government of Yukon*\(^\text{13}\) has held that free entry, characteristic of many of Canada’s mining laws, is incompatible with the duty to consult. Free entry, coming down from the days of the gold rushes, allows an explorationist to enter land and stake his or her mineral claim by his or her own actions, only later reporting the acquisition to the government recorder. (New Zealand lost this characteristic years ago, in favour of the present system of discretionary allocation of rights by a minister.) The mining legislation of many provinces and territories in Canada will need to be amended if not rewritten.

*Platinex Inc v Kitchenuhmaykoosib Inninuwug First Nation*,\(^\text{14}\) touched on above, sought to follow *Haida Nation* in relation to hard-rock mineral exploration in Northern Ontario. The Judge initially issued an interim injunction against exploration, and tried to bring about effective consultation, but without success. Six leaders of the First Nation then spent six months in jail for defying a court order to stop obstructing the exploration program; a high price to pay to protect one’s homeland. Striking in the long and bitter dispute was any sign of activity from the federal or provincial governments, which had primary responsibility for the honour of the Crown and the duty to consult. It is deplorable that the First Nation and the company were left to slug it out on their own. The lands were eventually reserved from mining, and the company sued the government for creating the proble. It accepted $5 million in settlement, glad no longer to be a litigation company. Since *Platinex*, and probably because of it, the Ontario legislature has made far reaching changes to the province’s Mining Act.\(^\text{15}\) Aboriginal rights and consultation were the focus of a new purpose clause, a mandatory prospector’s awareness program, withdrawal of sites of aboriginal cultural significance from mineral activity, and a new scheme of exploration plans and permits that claim holders must obtain. In addition, a new statute, the Far North Act\(^\text{16}\) creates an entirely new system of statutory planning for the public lands of northern Ontario. It sets aside one of the largest protected areas in the world, and produces a land use planning system that brings in considerable First Nations participation. A joint planning body and community based land use plans are profided for, seeking a partnership on an equal basis between the government and

\(^{10}\) Constitution Act 1982 ss 25 & 35. The treaties in question are not like the Treaty of Waitangi, but were mostly surrenders of aboriginal title to land in exchange for reserves, for hunting, trapping and fishing rights, and other modest recompense.


\(^{13}\) 2012 YKCA 14.


\(^{15}\) SO 2009 c 21, amending the Mining Act RSO 1990 c M.14.

\(^{16}\) SO 2010 c 18.
First Nations. However the aboriginal position, expressed by the Nishnawbe Aski Nation, has been one of strong opposition, because the Act was unilaterally imposed and because it required 50% of Nishnawbe Aski homelands to be permanently “parked.” In addition, First Nations do not acquire any special development rights to the off-reserve territory left over after the parks.

It is obvious that there are numerous useful points of comparison between New Zealand and Canada about different approaches to the problems raised by mining and oil and gas projects, recognizing, of course, the unique circumstances of every project and every community. Because of Canada’s size and diversity, there is a rich array of experiences from which to draw useful insights.