

# UNITISATION AND THE LAW OF CAPTURE IN NEW ZEALAND

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## Abstract

This paper commences with a brief discussion of the nature and accumulation of petroleum which gives petroleum resources their special migratory nature akin to water.

The legislation providing for ownership of petroleum resources is then reviewed with a discussion as to whether it provides for the mobile character of the resource.

The law of capture in the United States, United Kingdom and Australia is examined with a discussion as to whether it applies in New Zealand. The implications of these conclusions for participants in exploration and development in New Zealand are discussed.

The provision for unitisation of petroleum mining licences/permits in the present legislation and the new Crown Minerals Act is described with comments on its difficulties and inadequacies.

Unitisation proposals in New Zealand and successful unitisation agreements in the United States and Australia are commented upon.

## Introduction

As will be apparent from the title, this paper deals with two separate but inter-related topics. Firstly, the question of whether a law or rule of capture exists in New Zealand, and secondly, with the subject of unitisation. No doubt most people, when they hear the title, will think of the Ngaere case and the factual and legal background to it. This paper has been scheduled following two previous ones concerning that case, but does not intend to dwell on it further. However, the case is notable because it is the only one so far in New Zealand where two or more licences exist in respect of one petroleum field or reservoir. It remains to be seen, after the government statement in the Budget speech announcing the sale of the Crown's onshore Taranaki licences, whether the two mining licences will remain in different ownership, and whether the situation giving rise to potential unitisation will continue to occur (1).

The Ngaere case raises for the first time in New Zealand what is in fact a common scenario elsewhere in the world. In the United States, Canada, the United Kingdom and, to a lesser degree, Australia, voluntary unitisation is a frequent occurrence. However, little or nothing has been written in New Zealand about unitisation or about the common law and statutory framework dealing with the rights of licensees regarding common petroleum deposits. It is even more appropriate that these matters be looked at afresh as a result of the Crown Minerals Act 1991. As from 1 October 1991, this Act will provide a new statutory framework dealing with the rights of the Crown and of licensees to petroleum in its natural state, and after extraction as a result of mining operations. We intend, then, to focus on the state of the law after the enactment of the Crown Minerals Act 1991. We

will not comment at length on the legal position existing under the Petroleum Act 1937 which differs in a number of ways.

The resource with which we are concerned in considering this question of the law of capture and unitisation is, of course, petroleum, although the characteristics of this resource are shared by others such as ground water and geothermal energy. The difficulties or problems inherent in the petroleum resource which give rise to rules such as the law of capture and to the necessity for unitisation, are shared to a greater or lesser extent by these other resources. Petroleum is a generic name for a number of naturally occurring hydrocarbons (other than coal) found in land (2). The scientific nature of this resource would be better described by other commentators at this conference. But for the purposes of this paper, we note that depending upon the conditions of the deposit, including temperature, pressure and chemical composition, petroleum can occur in gaseous, liquid or solid states. However, it is the liquid and gaseous states with which we are most concerned. Because of the fluid nature of petroleum in its liquid and gaseous forms, once a petroleum reservoir is disturbed by drilling, the pressure of the reservoir can cause the petroleum to flow through any permeable strata to the area of least pressure.

Extraction of petroleum from a naturally occurring reservoir must inevitably lead to a decline in reservoir pressure which, unless artificially maintained, must reduce the productive capacity of that reservoir. It follows that the means by which petroleum is extracted from a reservoir will affect the maximum ultimate recovery of petroleum from that reservoir. These natural characteristics of petroleum and the effect of extraction of petroleum from its reservoir

give rise to the legal problems with which this paper is concerned.

## Unitisation

The purpose of unitisation is ultimately to prevent waste, to avoid unnecessary competitive drilling, and to secure the maximum ultimate recovery of petroleum from the oil field(3). The idea of unitisation arose in the United States as a legislative response to common law rules dealing with ownership of oil and gas which had evolved there. In the United States there are no less than three differing theories about ownership of petroleum in its natural condition (4). Unlike in New Zealand, Australia and the United Kingdom, petroleum in its natural condition has not been nationalised by the state. In a number of states the accepted rule of law is that no one owns petroleum in its natural condition. In other states, a private landowner has rights to petroleum in place as if it were a solid mineral. And in others, a form of qualified ownership appears to exist. However, in all States the rule of capture is generally recognised. This provides that rights to petroleum (whatever their nature and extent) can be lost by migration of the petroleum in extraction by another person. It appears that the rule evolved from an analogy between petroleum and underground percolating waters (5). Earlier case laws in England and United States had established that no person could have any property rights over ground water until abstracted. Moreover no equivalent to the riparian rights doctrine applied to surface water (6).

A consequence of the application of the rule of capture in the United States was that private landowners who had access to a petroleum reservoir were put in a position where they could only acquire rights to it by extraction. The result was an incentive for each landowner to drill competitively and extract as much petroleum as possible within as short a time as possible. This competition resulted in depletion of the reservoir pressure and physical and economic waste of the resource.

A doctrine of "correlative rights" was developed in the United States to curtail the worst effect of this rule. This doctrine recognised a right to a fair opportunity to extract oil and gas and a right to protection against the conduct of others which would result in waste. However, the doctrine did not include a right to a proportionate share of the common reservoir(7).

As already noted, the legislative response was to put in place regulatory controls upon extraction of petroleum. These controls included requirements for well spacing, compulsory pooling, restriction on drilling near boundaries, and unitisation.

## Application of the Rule of Capture in New Zealand

Despite the fact that the Crown Owned Minerals Act 1991 provides for unitisation (as did the Petroleum Act 1937) and that under the legislation, the government can impose regulatory controls to decrease the worst effects of competitive drilling, the issue of whether a law of capture exists in New Zealand is still a relevant one. The rule of capture questions the extent of a permit holder's right to extract petroleum from within the permit area. Does a permit holder obtain a kind of proprietary right to the petroleum in place within the permit area? The answer to this question will affect the rights of permit holders to prevent drainage of a common petroleum

reservoir by another party, or to seek compensation by a right of action in tort or restitution if it could be shown that petroleum within the permit area was being extracted by a neighbouring permit holder.

Apart from United States case law, the influence of English common law concerning petroleum can be found in three decisions of the Judicial Committee of the Privy Council. In none of the cases involved was the rule of capture directly addressed. Rather, related issues were dealt with. Unfortunately, none of these decisions are particularly consistent and various commentators consider them to be of doubtful precedent value. They do not resolve problems about the status of the rule of capture or provide authority for the application of the rule in the United Kingdom or Australia<sup>8</sup>. Moreover, in the United Kingdom, Australia and New Zealand rules of common law (whatever they may be) have, to a large degree, been abrogated, and their development cut short, by legislative provisions. In the United Kingdom, in each of the Australian states, the Northern Territory and in New Zealand, there exists legislation which vests ownership of petroleum in its natural condition in the Crown. This legislation provides a licensing regime whereby the Crown can grant to licensees rights to extract petroleum and acquire ownership of it(9). As a result, any common law position regarding ownership of petroleum in its natural condition no longer has any direct application. Consequently, not only is there insufficient support for advocating the existence of the rule of capture as a rule of common law, but legislation vesting ownership in the Crown leaves little room for the application of the rule(10).

## Statutory Framework in New Zealand

In New Zealand, mining for petroleum as from 1 October 1991 is managed and regulated by a statutory code under the Crown Minerals Act 1991. Section 10 of that Act provides that, notwithstanding anything to the contrary, all petroleum existing in its natural condition in land shall be the property of the Crown. The Act covers all land in New Zealand and includes the foreshore and sea-bed to the outer limits of the territorial sea. The limits of the territorial sea are 12 miles seaward from the coast. Beyond these bounds the continental shelf is also governed by the provisions of the Crown Minerals Act, but Section 10 of the Act does not apply. As a result, beyond the 12 mile limit, petroleum is not vested in the Crown (it may in effect be *res nullius*, save for any potential Maori claims to the resource) but the Crown has the exclusive right to manage the resource and to grant permits which confer ownership of the mined resource upon the permit holder(11).

Section 8 of the Act effectively prohibits the mining for and extraction of petroleum except pursuant to a permit granted under the Act. This prohibition includes the Crown(12).

In effect, all rights exercisable in relation to naturally occurring petroleum, including those of ownership and management, are vested in the hands of the Crown. Any rights to extract and own petroleum that a permit holder may have will be derived from the Crown under the licensing regime of the Crown Minerals Act. The question is then: what rights have been conferred by the Crown upon the permit holder by means of the statute or the terms of the permit? The nature and extent of the rights conferred upon a permit holder are determinable by reference to the statute.

to any regulations made under it, and to the terms and conditions of the permit itself(13).

As a result of the Act, every permit holder is deemed to be the owner of all minerals lawfully obtained by or on behalf of the holder in the course of activities authorised by the permit(14). The holder of a permit has the right to mine the mineral for which the permit was granted, and according to the conditions stated in the permit(15). The right to mine means the right to extract petroleum existing in its natural state in land(16).

The terms of the Act are very similar to the various legislation granting rights to mine in Australia(17) and in the United Kingdom(18). Commentators have noted that under such legislation establishing the legal nature of rights to petroleum in place is "extremely difficult", or that the "position is equivocal" and ambiguous. It has been said that the most important words of the legislation, lead to the interpretation that the right a holder has is to petroleum within the permit area at the date of grant or to petroleum which happens to be there at the time of the conduct of the operations(19).

However, within the words of the Act itself, there is nothing that expressly limits a permit holder's right to extract petroleum from within the permit land even though the petroleum may have migrated beyond the limits of the permit. But that is not the end of the matter. The rights of a permit holder are subject to the conditions of that permit(20). The conditions to be imposed are at the discretion of the Minister, who must act in a manner consistent with the relevant minerals programme(21).

It therefore appears to be within the general power of the Minister to impose conditions to limit the permit holders right to mine those minerals naturally occurring in the land at the time of the grant of the permit. In effect, the opposite to a rule of capture.

It is interesting to note that the Department of Energy of the United Kingdom stated in May of this year that its policy is that:

"...it is only the oil which lies vertically below the licence which a licensee is entitled to extract from his licence.. For this reason restrictions are placed on drilling wells close to the boundary of a licence so that they cannot be used to drain oil from adjacent areas..... There is no doubt in the concepts of the department [sic] that a licensee is not entitled to the oil which may flow into their [sic] licence area from adjoining acreage - licensed or unlicensed - as a result of any action on the part of the licensees viz. production. **Any oil which flows into one licence area must come from another area - if licensed then some other licensee is entitled to it; if unlicensed then it is the property of the nation.** To put it briefly the law of capture does not apply in the UK..... The department believes it does not apply and will continue to act to ensure that no actions which may result in the capture of hydrocarbons from adjoining acreage can take place unless the agreement of the licensees of that adjoining acreage has been obtained."(22)

In summary then, under the provisions of the Crown Minerals Act alone and in the absence of conditions to the contrary in the permit, a permit holder may have a right to extract any petroleum under the permit area. A permit holder of an adjoining block may not be protected against drainage of the common petroleum reservoir where this is a result of lawful operations under another permit. But the

permit holder may be able to restrain unauthorised activity which has affected the reservoir and operations of adjoining permit holders which have been carried out contrary to good oilfield practices(23). However, it also to be open to the Minister to limit the rights of a permit holder to any reservoir, and to control and prevent, as the UK Department of Energy does, any capture or drainage from outside the permit area.

Nevertheless, the Crown Minerals Act 1991 provides for unitisation in similar terms to those already existing in the Petroleum Act 1937(24). Unitisation is an internationally preferred method of developing a common petroleum reservoir because it best serves development and conservation objectives, while at the same time preserving the rights of all parties to a fair and equitable share of production(25). This is recognised by the Crown Minerals Act 1991 which gives the Minister powers to require unitisation. Similar powers are conferred upon the Secretary of State in the UK, although to date, this power has never been exercised and all unitisation schemes in the North Sea have been voluntary. No doubt the existence of the power to impose a scheme has been an important factor in encouraging licensees to reach a voluntary agreement(26).

## Unit Development

In New Zealand, the Minister can, by notice, require all the relevant permit holders to co-operate in the development of a scheme for the working and development of the oilfield as a unit if he is satisfied:

- (i) firstly, that a single oilfield is included within 2 or more petroleum permits; and
- (ii) secondly, that it is necessary in order to prevent waste, to avoid unnecessary competitive drilling, and to secure the maximum ultimate recovery of petroleum (Section 46).

These conditions must be satisfied in order for the Minister to exercise his or her powers, and the Minister must use his or her discretion in a manner consistent with the relevant minerals programme(27). There are a number of significant changes from the previous provisions of the Petroleum Act 1937. Firstly, it is no longer necessary that the Minister be satisfied that unitisation is in the national interest. Secondly, the unitisation scheme can be required if the Minister thinks that it is necessary in order to prevent waste and competitive drilling. (This is an addition to the already existing requirement which concerns the securing of the maximum ultimate recovery of petroleum). This means that it is not necessary for waste or competitive drilling to actually be occurring or to be about to occur. It is sufficient that they be reasonably likely to occur in the future. In addition, the notice requirement can now be instituted not just by the Minister, but at the request of one or more of the permit holders (Section 46).

These changes appear to allow for greater flexibility. They enable the unitisation notice procedure to be initiated by one permit holder who may be in a weaker position and who would otherwise suffer adversely if a unitisation scheme was not put in place. However, even though the situation may exist in which a field is not unitised and in which one licensee has the right to extract more petroleum than that originally in place in his or her portion of the field, this is not by itself enough to entitle the Minister to initiate a scheme.

Generally, the practice in the United Kingdom has been to unitise common oilfields prior to development. We understand that this is in contrast to onshore practices in

North America where unitisation more often takes place after production has commenced and in respect of secondary recovery only. Once again the approach of the UK Department of Energy is of interest. The Department does not generally allow permit holders of adjoining licences to develop their separate parts of the common oilfield independently(28).

Under the Crown Minerals Act 1991, it is at the discretion of the Minister whether to grant a permit or approve a work programme. Such approval is subject to the scheme being consistent with the minerals programme, or with recognised good exploration or mining practice(29). The Minister can, in other words, control the management of a field at two quite different junctures - either by the imposition of a unitisation scheme under s.46 on holders of mining permits or, alternatively, could achieve effectively the same result when exploration permit holders apply for mining permits after a successful discovery. It has been commented by a leading UK practitioner (Thomas Winsor) in this field that:

"...there are very few oil company executives in the UK who would be prepared to challenge the Minister's rejection of a development programme submitted to him for approval on the grounds that it has only been rejected or not approved because the Minister wants the applicants to agree a unitisation scheme with their neighbours. In the licensing regime we have in the UK, the Minister has a very wide discretion in the awarding of licences - a discretion much wider than his ability to reject any development programme - and in general terms a company's relations with the Department of Energy are very important"(30).

Winsor suggests that use of the licensing power in this way might not in fact be lawful - albeit that few in the oil business would seek to challenge such decisions. In New Zealand, the Minister's power to withhold approval of a work programme if it is "contrary to recognised good exploration or mining practice," or if it is inconsistent with the minerals programme, may point to a conclusion that it is quite proper for a mining permit to be refused until a unitisation programme is arranged(31).

## The Development Scheme

The purpose of the "development scheme" is to promote the working and development of the oilfield as a unit by the permit holders in co-operation. Such a scheme would, no doubt, need to address:

(i) Firstly, most of the matters that the usual joint venture operating agreement would deal with, including development of the field and the participatory interests of all of the relevant permit holders.

(ii) Secondly, the unitisation of the field.

Generally in the United States these two parts are dealt with under two separate agreements (a) the Unit Agreement which deals with the unitisation and the question of the participatory interests of the parties; and (b) the Unit Operating Agreement, which deals with the operational matters(32). The usual practice in Australia and the United Kingdom is for both parts to be amalgamated in the one document; the Unit Operating Agreement(33).

It is not intended to comment extensively on the form of such agreements, for this would amount to a topic in itself, beyond the scope of this paper. Generally, however, such an agreement will largely replace any existing operation agreements for the separate permits in respect of the unit

area. It will govern the operation of the unitised field and will usually contain restrictions on any other operations carried on within the unit area. However, any operations outside that unit area may continue to be covered by the permit operating agreements.

A unit agreement will generally include clauses dealing with the following matters:

Definitions

-Unit Area

-Unitised Zone or Unitised Reservoir

Duration

Creation and Effect of Unit

Trade Participations and Unit Interests

Redetermination

Consequential Adjustments Following Redetermination

Unitised Substances

Enlargement of Unit Area

Unit Operator

Unit Operating Committee

Programmes and Budgets

Non-Unit Operations

Sole Risk

Costs and Accounting

Default

Abandonment

Confidentiality

Assignment and Withdrawal

Many of these clauses are similar to the equivalent clauses found in ordinary joint venture operating agreements(34).

One of the more important of these matters, and the one which distinguishes this agreement from an ordinary operating agreement, is that which determines "tract participations and Unit interests"; that is, each participant's interest in the unitised field. In brief, the calculation of each participant's unit interest is usually an extremely complex and lengthy task, involving an assessment of the reserves in place within each permit area. This must also be one of the more important matters which the Minister needs to focus on in deciding whether to approve a development scheme, if he or she has required the permit holders to prepare one under Section 46 of the Act.

Section 46 does not itself provide criteria by which the Minister should assess the scheme to decide whether to approve it or not. But the Minister will be bound by the relevant mandatory considerations set out in Section 22; that is, the Minister must decide whether the scheme is consistent with the policies, procedures and provisions of any relevant minerals programme. In addition, it follows from the rest of the section that the scheme must be "fair and equitable" to all the permit holders. In most cases this matter will be concerned with the question of reserves of petroleum within each permit. But other factors which must have a bearing include whether one permit holder has undertaken greater development costs, or will provide more facilities(35).

## Conclusion

The new Crown Minerals Act 1991 leaves little room for the application of rule of capture, even if it exists as a rule of common law in New Zealand. But the Act leaves open the question of the extent of a permit holder's right to extract petroleum from within the permit area. However, the Minister, under the Act has power to impose conditions on

a permit which limit the holder's right to only that petroleum in place within the permit area at the time of the grant of the permit. In effect, a situation contrary to the rule of capture. Regardless of this, the Minister has two other mechanisms to alleviate the worst effects of competitive drilling. Firstly, the Minister may withhold approval of a work programme. And secondly, if the permit holders show no intention of co-

operating in the joint development of the reservoir, the Minister has the power to impose a unit development scheme. In New Zealand, a policy has not had the opportunity to develop due to the non-existence of cross-boundary reservoirs. It remains to be seen whether the Minister in New Zealand will adopt the firm approach taken by the United Kingdom Department of Energy.

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## References

- (1) Budget 1991: Hon. R. Richardson, Minister of Finance, 30 July 1991, 52.
- (2) Crown Minerals Act 1991, s.2.
- (3) Crown Minerals Act 1991, s.46(1).
- (4) Crommellin: The US Rule of Capture: Its Place in Australia [1986] AMPLA Yearbook, p.265-7.
- (5) Crommellin: op. cit. n.4, 267.
- (6) Crommellin: op. cit. n.4, 267.
- (7) Kuutz E "Correlative Rights of Parties Owning Interests in a Common Source of Oil or Gas (1966) 17 Institute of Oil and Gas Law 217, 225, 236.
- (8) Daintith T.C. & Willoughby GDM: United Kingdom Oil and Gas Law, para. 3-002; Crommellin op. cit. n.4, 270-6; Gerlach S: Comment on the US Rule of Capture: Its Place in Australia [1986] AMPLA Yearbook 282.
- (9) Petroleum (Production) Act 1937, s.(1)(i) (UK); for Australian states see Lang and Crommellin: Australian Mining and Petroleum Laws, para. 220; Crown Minerals Act 1991, s.10 (NZ).
- (10) Daintith & Willoughby op. cit. n.8, 1-233; Milliner, R.I.: Comment on the Law of Capture: Its Place in Australia (1986) AMPLA Yearbook, p.271, 293, 294, Lang & Crommellin op. cit. n.9, 220.
- (11) Territorial Sea and Exclusive Zone Act 1977, s.3; Continental Shelf Act 1964, ss.3, 4; but see Daintith & Willoughby op. cit. n.8, para. 1-232 who argues that even though the resource is not vested in the Crown, the Crown has some form of proprietary right.
12. Crown Minerals Act 1991, s.3.
- (13) Rights of licensees holding licences granted under the Petroleum Act 1936 will be determined by the provisions of that Act: Crown Minerals Act 1991, s. 107.
- (14) Crown Minerals Act 1991, s.31.
- (15) Crown Minerals Act 1991, s.30(3).
- (16) Crown Minerals Act 1991, s.2(1) "petroleum".
- (17) s.52 Petroleum (Submerged Lands) Act 1967 (Cth); s.30(1) Petroleum Act 1958 (Vic); s.31(4) Mining Act 1929 (Tas).
- (18) Schedule 5, c.1.2, Petroleum (Production) Regulations 1982.
- (19) Crommellin op. cit. n.4, p.280; Daintith & Willoughby op. cit. n.8, para. 1-231, 1-234.
- (20) Crown Minerals Act 1991, s.30(1).
- (21) Crown Minerals Act 1991, s.25(1), 22(1).
- (22) I.W.G. Hughes, Department of Energy: Department of Energy View on Unitisation; Conference on Unitisation of Oil and Gas Fields, London, 21 May 1991.
- (23) Daintith & Willoughby op. cit. n.8, para. 1-234, note 3; T.P. Winsor, 'Unitisation - The Legal Problems', Conference on Oilfield Unitisation, London, 24 May 1989 at p.3.
- (24) Crown Minerals Act 1991, s.46 c.f. Petroleum Act 1937, s.40.
- (25) Milliner op. cit. n.10, p.296 and n.25.
- (26) M.Taylor: The Legal Background and Structure of Unitisation Agreements: Conference on Unitisation of Oil and Gas Fields, London, 21 May 1991, 1.
- (27) Crown Minerals Act 1991, s.22(1).
- (28) Taylor, Winsor & Tyne: Joint Operating Agreement: Oil and Gas Law, Chapter 6 generally and pp. 65-6.
- (29) Crown Minerals Act 1991, s.43(1), (2).
- (30) Winsor op. cit. 23 at p.5.
- (31) The Minister may also withhold approval if it is inconsistent with the minerals programme which must provide for the efficient allocation of rights in respect of minerals and which could itself provide for a general policy in respect of unitisation.
- (32) American Petroleum Institute has prepared a model form of both agreements.
- (33) Taylor, Winsor & Tyne: op. cit. n.28: 66; Mathews J., Unitisation: AMPLA 15th Annual Conference (1991), p.10.
- (34) Taylor, op. cit., 26: 8

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