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Natural Gas Storage Regimes In Canada: A Survey

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ISEEE Research Paper

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The Institute for Sustainable Energy, Environment and Economy (ISEEE) at the University of Calgary provides leadership for and coordination and management of major multidisciplinary and interdisciplinary research and teaching initiatives, focused on energy and environment.

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COMMENTS

This paper is posted as a working paper. Comments on the paper may be sent to Nigel Bankes at (ndbankes@ucalgary.ca).

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1.0 INTRODUCTION

This working paper examines the natural gas storage regimes in place in the different jurisdictions in Canada. The paper tries to answer the following questions for each jurisdiction:

- What does the regime say about the ownership of storage rights? Does it vest such rights in the Crown or does it recognize that storage rights might be privately owned? Is the ownership of storage rights associated with ownership of the surface or ownership of the mines and minerals?
- To the extent that storage rights are owned by the Crown, how does the Crown dispose of those storage rights? Are storage rights associated with the rights to produce petroleum and natural gas, or does the relevant legislation provide for a distinct form of storage tenure (or some combination of the two)?
- To the extent that storage rights are privately owned, does the province provide any mechanism for the compulsory acquisition of storage rights from a holdout? If so, is there a mechanism to provide compensation?
- What is the regulatory mechanism in place for the approval of natural gas storage projects? Does responsibility for approval lie with the provincial energy department or a regulatory tribunal?
- How does the regime deal with the potential for resource use conflicts (e.g. sterilization of other resources as a result of designating lands for storage)?

The paper does not refer in any great detail to the technical regulation of storage facilities. Many jurisdictions apply the most recent version of the Canadian Standards Association CSA Z341, *Storage of Hydrocarbons in Underground Formations*.¹ Since the paper focuses on the design of gas storage regimes the paper does not deal with the private contractual arrangements relating to the use of storage. Neither does the paper discuss the potential liability issues that might arise as between adjacent owners, such as

¹ Second edition, Z341 SERIES-06, available for purchase from the Canadian Standards Association. online: <<http://www.csa.ca/cm/home>>.

where a mineral rights owner or working interest owner adjacent to a storage project is allegedly producing stored gas. This is properly the subject of another paper.²

A significant issue in recent years has been the economic regulation of storage. Early development of storage in Canada, and especially in Ontario, was closely associated with regulated natural gas distribution utilities. As a result, it was perhaps only natural that such storage came to be regulated as a utility service. More recently, there has been a trend towards the development of unregulated or market-based storage³ and in some cases proposals to remove storage facilities from the rate base. The paper offers some coverage of these issues in the context of Ontario with some more limited reference to economic regulation issues in British Columbia and Alberta, but a more detailed and comprehensive discussion of these matters is again properly the subject of another paper.

Each of the provinces, except Newfoundland and Prince Edward Island, provide the basic elements of a gas storage regime. All of the provinces that have storage legislation have some experience with storage projects save Manitoba. Ontario has the most experience and the most transparent regulatory approach, featuring reasoned decisions of the Ontario Energy Board. Consequently, this paper offers more extended coverage of the law and practice in that jurisdiction. The analysis in this paper proceeds from west to east.

The concluding section of the paper offers a brief discussion of the storage rules in Yukon, the federal rules for the Northwest Territories and Nunavut, and for the east coast offshore. These rules have yet to be tested. In addition, this final section of the paper also addresses the potential role for federal regulation of storage operations where such

² These issues were to be raised in an application on behalf of the interest owners in the CrossAlta storage project before Alberta's Energy Resources Conservation Board. This was an application to shut in a well producing from a property adjacent to the storage area: ERCB Application No. 1601651. The application was set down to be heard on November 25, 2009 but the application was withdrawn on October 15, 2009 presumably on the basis of a settlement: see ERCB Decision 2009-068, CrossAlta Gas Storage & Services Ltd., Application for the Permanent Shut-in and Abandonment of the Crossfield East Basal Quartz A Pool, <<http://www.ercb.ca/docs/documents/decisions/2009/2009-068.pdf>>

³ For discussion see Ontario Energy Board, Natural Gas Electricity Interface Review, EB-2005-0551, Decisions with Reasons, November 7, 2006 [NGEIR Decision], online: <http://www.oeb.gov.on.ca/documents/cases/EB-2005-0551/Decision_Orders/dec_reasons_071106.pdf>.

operations form an integral part of an interprovincial work or undertaking (i.e. a federally regulated interprovincial or international pipeline).

The paper is intended for lawyers and policy makers engaged in the development of gas storage projects, but it should also be of interest to those thinking through the possible application of gas storage rules to the analogous situation of carbon capture and storage (CCS).⁴ The analogies of course are not precise: gas storage is intended to be cycled on a seasonal or more frequent basis, while CCS projects involve permanent disposal. Consequently, some would suggest that the better analogy for CCS is acid gas disposal (AGD) projects, since both involve disposal rather than storage, and both involve projects which aim to pressure up the storage formation, while in a gas storage project (or an enhanced oil or gas recovery project) the reservoir will be depleted upon abandonment.⁵ Nevertheless, we have longer experience with gas storage than with AGD and it is worth reflecting on that experience, particularly in terms of ownership and tenure. One of the conclusions of the paper is that there is considerable variety in the storage regimes of the provinces. Some provinces have moved quite aggressively to vest gas storage rights in the Crown (Quebec, New Brunswick, and Nova Scotia); others recognize the possibility of private ownership of storage rights (Alberta, Saskatchewan, Manitoba, and Ontario); while British Columbia takes a middle road and provides for Crown vesting of storage rights on a case by case basis. What are the lessons here for the development of CCS regimes? Is the variety a good thing? Is one model to be preferred and if so on what grounds? We have provided a summary of lessons learned for CCS projects in a companion paper.

⁴ In a previous article, Nigel Banks, Jenette Poschwatta, and E. Mitchell Shier, "The Legal Framework for Carbon Capture and Storage in Alberta" (2008) 44 Alberta Law Review 585 – 630, we explored the property, regulatory and liability issues associated with CCS projects and provided some limited discussion of the analogy between natural gas storage and CCS. See also Nigel Banks and Martha M. Roggenkamp, "Legal Aspects of Carbon Capture and Storage" in Redgewell *et al*, eds., *Beyond the Carbon Economy* (Oxford: Oxford University Press, 2008). Also see the Report by Working Committee 2 on storage, from the 24th World Gas Conference, 5-9 October 2009, Buenos Aires, which states that, according to an international survey of storage operators, the new technique of interest is, overwhelmingly, CO₂ sequestration, and reports on operators' readiness to implement that technology, at 2 and 20-22 of the "New Technologies" section, online: <<http://www.igu.org/html/wgc2009/committee/WOC2/WOC2.pdf>>.

⁵ See Nigel Banks and Jenette Poschwatta, "Carbon capture and storage in Alberta: learning from the acid gas disposal analogy" (2007), 97 Resources 1-6, online: <<http://www.ucalgary.ca/~cirl/html/resources.html>>.

1.1 The legal literature of natural gas storage in Canada

There is relatively little literature on the legal aspects of natural gas storage in Canada. An early focus was on the ownership of storage rights. Lyndon (1961) provides a synopsis of a report of the Underground Storage Committee to the Mines' Ministers' Conference in 1960.⁶ The authors of that report concluded that a reservation of the mines and minerals would "except from the title oil and gas or the strata or formation or reservoir in which the substances are found."⁷ But they went on to say that where non oil and gas strata were being used then "the owner of the lands other than the mines and minerals, would have to consent or grant another document for the use of such strata."⁸

At about the same time (1962), a Committee appointed by Ontario to advise on oil and gas resource matters for that province (the Langford Committee) issued a separate report on underground storage of natural gas.⁹ Chapter 5 of the Langford Report was devoted to legal issues. The Committee identified three types of legal issues for discussion: legislative issues, regulatory issues, and contractual issues.¹⁰

The key concerns of the Committee under the heading of legislative issues appear to have been constitutional in nature. The Committee wanted to ensure that storage remained under the control of the province and wanted to ensure that the benefits of storage accrued to the province rather than to the country as a whole. Ontario domestic customers should, in the opinion of the Committee, have first call on available storage.¹¹ The Committee also discussed under this head the manner in which the storage industry should be organized. It toyed briefly with an analogy to Ontario Hydro (a Crown corporation and then the monopoly generator of electricity in the province) but soon

⁶ J. Lyndon, "The Legal Aspects of Underground Storage of Natural Gas – Should legislation be considered before the problem arises?" (1955- 61) 1 Alberta Law Review 543 – 548.

⁷ Lyndon, *ibid.*, at 546.

⁸ Lyndon, *ibid.*

⁹ Ontario, *Report of the Committee on Oil and Gas Resources, (The Langford Committee Report)*, Part II, Underground Storage of Gas, June 1962 [Langford Report].

¹⁰ *Langford Report, ibid.* at 38.

¹¹ *Langford Report, ibid.* at 41.

recognized that there was little appetite for such an approach in the gas industry where the private investment model, through the vehicle of a regulated utility, seemed to offer a better strategy.¹² However, the Committee clearly believed that there was a role for regulation and in particular endorsed the idea that the provincial regulator, the Ontario Energy Board, should be able to authorize a storage project in a designated area (subject to the duty to compensate) even if not all owners consented.¹³ Thus the Committee recognized the need to deal with the potential holdout problem in putting together a storage project.

Under the heading of regulatory issues, the Langford Committee was principally concerned with ensuring that oil and gas operations (and the information collected in the course of those operations) were carried out in such a way so as not to prejudice the prospect of using depleted formations for storage operations in the future.¹⁴

Finally, on the contractual side of things, a significant issue for the committee was the contractual relationship between the storage operator and the owners. The committee was concerned that in some cases owners had given up storage rights without realizing it (thinking that they were merely leasing oil and gas exploration and production rights). The Committee considered whether it should be necessary for parties to deal with storage rights separately¹⁵ from other oil and gas rights. The Committee was reluctant to accept this, noting that there may be advantages in combining production and storage rights (having earlier noted the possibility of concurrent storage and oil production operations¹⁶) to facilitate long-term planning. Perhaps surprisingly, the Committee did not deal explicitly with the question of the ownership of storage rights. Rather, and as the last discussion suggests, the Committee seems to have proceeded on the basis that storage was owned by the owner of the petroleum and natural gas estate and not by the surface owner.

¹² Langford Report, *ibid.*

¹³ Langford Report, *ibid.* at 42.

¹⁴ Langford Report, *ibid.* at 44.

¹⁵ Langford Report, *ibid.* at 46. This brings to mind the practice of the western provinces (discussed *infra*) to require oil and gas operators to deal separately with surface rights.

¹⁶ Langford Report, *ibid.* at 41.

After these early beginnings there seems to be a long gap in the specialized legal literature¹⁷ until the 1990s. At that time Alberta introduced legislation to deal with the ownership of gas storage rights and the royalty treatment of gas in depleted reservoirs led to a number of articles authored by some of the parties involved in negotiations with the Crown, or by the key drafters of that legislation. Winter (1993), for example, provided a detailed analysis of the original natural gas storage agreement between the province of Alberta and the Alberta Energy Company in relation to the Suffield Mannville Storage project.¹⁸ Winter emphasizes the royalty issues associated with gas storage agreements; in particular, he notes that the Suffield Agreement varied the existing royalty regime for the treatment of stored gas so as to reduce the complexity that might otherwise be associated with multiple parties storing in the same facility. Acorn and Ekelund followed this in 1995 with a very valuable commentary on Alberta's amendments to its *Mines and Minerals Act* to address many of the legal issues associated with natural gas storage projects.¹⁹ While much of the Acorn and Ekelund article deals with reforms in the Alberta natural gas royalty regime (and here the article confirms Winter's comment that the province was moving generally to a position in which it was no longer deferring royalty on gas injected for storage purposes but was requiring that royalty be paid upon production and prior to injection²⁰), the second part of the article comments in detail on the property aspects of storage law. A crucial point of the amendments was to settle, once and for all, that storage rights in Alberta are owned by the party who owns the petroleum

¹⁷ There were short discussions of storage in successive editions of John Bishop Ballem, *The Oil and Gas Lease in Canada* (various editions) (Toronto: University of Toronto Press). In his first edition (1973), Ballem (at 97 – 98) noted that Ontario and British Columbia had taken the lead on issues of storage. He also suggested that an oil and gas lessee who did not receive a grant of “mines” would not likely obtain natural gas storage rights, but Ballem's principal concern seems to have been the rights of the lessee versus the rights of the owner, rather than the competing claims of the owners of the surface estate and mineral estate. Subsequent editions treat the issue in a similar manner: see the second edition (1985) at 103 – 105, and the third edition (1999) at 122 – 125 and the fourth edition (2008) at 144 – 147.

¹⁸ Colin Q. Winter, “Alberta Gas Storage Reservoirs: A New Direction for Royalty Administration” (1993) 31 Alta. L. Rev. 107. Winter reproduces the Suffield Agreement in an appendix to the paper. With this agreement, Winter suggests, the Crown moved from charging royalty on a first-in first-out system to a pay-as-you-go system, thereby making it easier for parties to trade and to account for their royalty obligations.

¹⁹ Glen Acorn and Michael W. Ekelund, “An Overview of Alberta's Recent Legislation on Natural Gas Royalty Simplification and Gas Storage” (1995) 33 Alberta Law Review 342; and see discussion in Part 4, *infra*.

²⁰ Acorn and Ekelund, *ibid.* at 355.

and natural gas rights rather than by the party who owns the surface rights.²¹ The authors note that the legislation also served to clarify how the Crown would dispose of its storage rights, suggesting that the principal vehicle would be by means of unitization agreements. There is further discussion of this important article in Part 4 on Alberta, *infra*. Since then there has been little new legal writing on storage issues in Canada.²² However, recent interest in carbon capture and storage has certainly triggered renewed interest in analogous operations like gas storage.²³

²¹ Acorn and Ekeland, *ibid.* at 362: “the time for putting this ownership problem to rest was long overdue”.

²² Robert J. McKinnon, “The Interplay Between Production and Underground Storage Rights in Alberta” (1998) 36 Alberta Law Review 400 (focusing on the ownership of injected gas and principally discussing relevant US case law).

²³ For example, Bankes et al., *supra* note 4.

2.0 NATURAL GAS STORAGE: GENERAL

2.1 Introduction

This section of the paper provides some general background on natural gas storage operations. It begins by examining the different purposes for which proponents might develop a storage project, either an upstream project close to production or a downstream project close to market.

2.2 Purposes of Storage

Natural gas storage serves a number of functions within an overall scheme for the production, transmission and distribution of natural gas from the wellhead to the ultimate consumer. Storage may be located at any point along that chain at the upstream end (upstream storage) or at the distribution end of the system. In Canada, most storage facilities are located close to the ultimate market and thus at the distribution end of the chain (especially in Ontario), but there is significant upstream storage in both British Columbia and in Alberta.²⁴

Upstream storage serves a number of different functions. It can be combined with petroleum recovery to help maintain reservoir pressure. It can be used to balance production in relation to fluctuating demands, and it can be used to allow producing wells to maintain a relatively constant production rate to avoid damaging the reservoir. Furthermore, upstream storage can be used to meet contractual commitments and can also be used to hedge the market by injecting gas when prices are low in hopes that it

²⁴ The Energy Resources Conservation Board of Alberta draws a distinction between “production-motivated” storage and “commercial operations”. The Board suggests that: “Production-motivated schemes are usually characterized by the temporary storage of gas occurring at or near the producing pools. They can allow for the more efficient use of production and processing facilities and may also be of benefit in market-related situations. Commercial gas storage schemes are designed to provide an efficient means of balancing supply with a fluctuating market demand. These schemes store third-party nonnative gas, allowing marketers to take advantage of seasonal price differences, effect custody transfers, and maintain reliability of supply. Gas from many sources may be stored at commercial facilities under fee-for-service, buy-sell, or other contractual arrangements.” Board Directive 65, Resources Applications for Conventional Oil and Gas Reservoirs, online: <<http://www.ercb.ca/docs/documents/directives/Directive065.pdf>>, Unit 4.3.

may be produced and sold when prices recover, either on a seasonal basis or over some longer or shorter period.²⁵

Downstream storage serves additional purposes. Distributors are particularly reliant on storage in order to supply adequate gas, on the best possible terms, notwithstanding fluctuations in demand.²⁶ Storage ensures adequate gas inventory to meet potential emergency demands—in the event of pipeline breach, for example,²⁷ or other interruption in supply.²⁸ More predictable (and inevitable) are seasonal fluctuations in demand for natural gas, with demand in most cases at its lowest in summer, and peaking in winter, when demand may exceed the maximum flow of a pipeline and the distributor draws on stored inventory in order to provide adequate supply. In addition to this seasonal cycle, natural gas demand may also fluctuate daily or even hourly, throughout the year, for other reasons including the recent proliferation of gas-fired electric plants (with increased summer demand—from air conditioners, for example—and shorter-term fluctuations),²⁹ and gas market trading as the spot price of gas changes. In general, underground natural gas storage is a less expensive means of managing supply and demand than: (a) increasing the capacity of a supply pipeline in order to meet peak loads (since this will

²⁵ In the U.S., the Federal Energy Regulatory Commission's Order 636 (1992) opened up the natural gas market to deregulation so as to make storage available not only for operational requirements of pipelines supplying utilities, but to anyone seeking storage for commercial purposes or operational requirements. See the website of the Natural Gas Supply Association online: <<http://www.naturalgas.org>> [NGSA website]. For another example of the use of natural gas storage in an upstream context see Application by Shell Canada to the ERCB for approval of Three Creeks ... Underground Gas Storage Scheme, September 2009. In this application Shell seeks approval to store sour gas produced as a product of thermal heavy oil production in the Peace River Area. Shell wanted to be able to store some of that gas to maximize subsequent use of the gas for boiler fuel, thereby reducing sulphur emissions.

²⁶ *Current State of and Issues Concerning Underground Natural Gas Storage*, Federal Energy Regulatory Commission (FERC), Staff Report, September 30, 2004 at 2, online: <<http://www.ferc.gov/EventCalendar/Files/20041020081349-final-gs-report.pdf>> [FERC Staff Report]. In a European Union context, as dependency on imported gas increases, so too does the need for storage as a seasonal balancing tool, especially if imports are not diversified and are vulnerable to disruption—see Ramboll Oil & Gas, *Study on natural gas storage in the EU*, Draft Final Report, October 2008, prepared for EU DG TREN C1 at 28, 32) [*EU Gas Storage*], online: <http://ec.europa.eu/energy/gas_electricity/studies/gas_en.htm>. For a discussion of the value of storage in the context of a regulated utility see EUB Decision 2002-072, Re ATCO Gas, Transfer of Carbon Storage Facilities, July 30, 2002.

²⁷ See the discussion in S.D. McGrew, “Selected Issues in Federal Condemnations for Underground Natural Gas Storage Rights: Valuation Methods, Inverse Condemnation and Trespass” (2000-2001) 51 Case W. Res. L. Rev. 131 at 131 – 2.

²⁸ For example as a result of political issues in transit countries: a major issue for Europe (*EU Gas Storage*, *supra* note 26).

²⁹ NGSA website, *supra* note 25.

mean that the pipeline will run at less than capacity most of the time),³⁰ and (b) surface storage (i.e., large steel tanks).³¹

Finally, it seems fair to say that the availability of storage is crucial to the functioning of a short term and highly liquid gas market. Aggregations of storage and transmission capacity allows centres such as Dawn (Ontario)³² and AECO (Alberta) to serve as gas hubs where spot prices may be quoted.

2.3 Features of a storage reservoir

Underground natural gas storage sites are situated in porous rock zones (or leached cavities) overlain by impermeable rock and / or water barriers.³³ The capacity and deliverability of the storage site, as well as market location, are key factors in determining a site's suitability for underground storage.³⁴ Total capacity refers to the maximum volume of gas that can be contained within a reservoir, usually expressed in terms of cubic feet—thousands of cubic feet (Mcf) or billions (Bcf). The size of a geological formation is a key factor in total capacity, as is the volume of injectable space in that formation (i.e. its porosity). A large capacity can figure importantly in achieving economies of scale in the operation of a storage facility.³⁵ However, the breakdown of that total capacity figure into each of: (1) physically unrecoverable gas, (2) cushion gas, and (3) working gas provides the crucial determinants of a formation's performance as a storage facility. Physically unrecoverable gas refers to gas that cannot be recovered when the pressure differential in a reservoir becomes insufficient to push gas out.³⁶ Cushion or base gas refers to the gas that has to remain in a reservoir as "permanent inventory" in

³⁰ Further: "... the costs of building 'excess' capacity in pipelines increases radically with pipeline length... the longer the pipeline the higher the benefits from optimizing the utilization of the pipeline and the higher the loss will be if the pipeline is built with excess capacity" (*EU Gas Storage*, *supra* note 26 at 51).

³¹ Langford Report, *supra* note 9 at 35.

³² NGEIR Decision, *supra* note 3 at 7 – 8.

³³ Langford Report, *supra* note 9 at 18; FERC Staff Report, *supra* note 26 at 5.

³⁴ See the Energy Information Administration (Official Energy Statistics from the U.S. Government) website, "The Basics of Underground Natural Gas Storage" online:

<http://www.eia.doe.gov/pub/oil_gas/natural_gas/analysis_publications/storagebasics/storagebasics.html> [DOE Basics].

³⁵ *EU Gas Storage*, *supra* note 26 at 144.

³⁶ NGS website, *supra* note 25.

order to maintain adequate pressure, to prevent water encroachment, and to facilitate delivery until the end of operations, at which point a portion may be extractable.³⁷ Working gas or deliverable gas refers to that gas that can be recovered and made available to the market.³⁸ Cushion gas is one of most expensive elements of a storage project (since it represents an up-front capital cost). The more cushion gas that is required to sustain pressure and deliverability, the higher the cost, but also the less volume capacity available for working gas.³⁹ The term “capacity” as used in relation to a storage facility usually refers to working gas capacity. Storage sites may have widely varying ratios between these categories depending on particular geological and operational characteristics.

Permeability (the rate at which natural gas can flow through a porous formation) and pressure determine the rate at which a storage facility can accept and yield natural gas (injectivity and deliverability). Deliverability is expressed in terms of the amount of gas that can be withdrawn on daily basis (Mcf/d, or Bcf/d).⁴⁰ Maximum deliverability is achieved by reaching both maximum storage pressure and maximum “gas-in-place” volume (gas present) in the storage facility. These are mutually informing points (injecting more gas requires and creates increasingly more pressure) and will vary according to formation type, porosity, depth, and other conditions such as the character of surface facilities.⁴¹ Deliverability decreases throughout a withdrawal period because as gas is withdrawn, pressure decreases.⁴² Formations that can withstand higher pressures have a greater gas capacity (compression capability) and higher potential deliverability. The shape of a formation contributes to its character in these respects: a relatively deep dome formation over a relatively compact area may be capable of higher pressures, higher capacity, and greater deliverability than a formation which, though otherwise

³⁷ See “Underground Natural Gas Storage”, Report by Simmons & Company International, June 28, 2000, online: < <http://www.simmonsco-intl.com/files/63.pdf> > [Simmons and Co] at 13.

³⁸ DOE Basics, *supra* note 34 at 4.

³⁹ FERC Staff Report, *supra* note 26 at 19.

⁴⁰ DOE Basics, *supra* note 34 at 4.

⁴¹ *EU Gas Storage*, *supra* note 26 at 144; FERC Staff Report, *supra* note 26 at 6.

⁴² NGS website, *supra* note 25.

having the same geological character and volume, is relatively shallow and spreads over a wide area.⁴³

Cycling refers to the completion of the process of gas injection and withdrawal. Cycling times are determined by the facility's physical capabilities (injectivity and deliverability) but will also reflect the purpose for which gas is being stored, whether that is to meet seasonal or shorter demand fluctuations. Shorter cycling times—and thus multiple cycles per year—offer increased flexibility and deliverability and also lower the per unit costs of operating a storage facility.⁴⁴

There are three main types of naturally occurring geological formations used for underground natural gas storage: depleted oil and gas reservoirs, salt caverns, and aquifers.⁴⁵ So far as we are aware, there are no aquifer storage projects in Canada. Geological opportunity—the actual occurrence and location of a formation—is the primary determinant of patterns of storage development, but the intended function of storage is also relevant in assessing what particular type of formation will be most effective.⁴⁶ For example, for seasonal gas demands, depleted fields and aquifers will likely operate most economically; for gas demands that require higher withdrawal rates, salt caverns offer greater deliverability and may achieve the lowest per unit costs.⁴⁷

2.3.1 Depleted reservoirs

Depleted reservoirs are the most common type of storage facility. Depleted reservoirs are usually relatively shallow, large-volume formations (larger than both salt caverns and

⁴³ Langford Report, *supra* note 9 at 18.

⁴⁴ It is also “operationally improper” to simply let gas sit in a storage field, as this can result in a loss of pressure and of gas (FERC Staff Report, *supra* note 26 at 6).

⁴⁵ A storage facility has also been developed in an abandoned coal mine, in the U.S. (DOE Basics, *supra* note 34 at 1).

⁴⁶ *EU Gas Storage*, *supra* note 26 at 148.

⁴⁷ *EU Gas Storage*, *ibid.* at 152. A combination may be most desirable (at 15): “where depleted fields and aquifers have larger storage capacity but provide less flexibility in terms of withdrawal rate compared with salt cavities... [the former are] more suitable for fulfilling the role of storage as seasonal balancing tool. while the salt cavities are more suitable as high-frequency market-balancing tools”.

aquifers). They are geologically secure and known, in the sense that they have already effectively contained hydrocarbons and have already been surveyed and developed.⁴⁸

Roughly 50% of the capacity of a depleted reservoir (and typically approximately 30% of its overall capital cost)⁴⁹ is taken up by cushion gas.⁵⁰ That portion of gas which will remain physically unrecoverable may already exist in the formation, and thus may not figure as a development need.⁵¹ Reservoir injectivity and deliverability are similar to those of aquifers, and lower than those of salt cavern facilities.⁵² A reservoir cycle is typically seasonal, with one injection period (April to October in the northern hemisphere) and one withdrawal period (November to March) per year—though some facilities may also be used for some peak-day demands.⁵³

Depleted reservoirs can be the least costly of the three main types to develop, operate, and maintain. A depleted reservoir will already have been surveyed, and will have existing wells, gathering systems, pipeline connections, and extraction and distribution (though these may require modification for a new storage operation).⁵⁴

The extent to which it is less expensive to develop a depleted reservoir rather than another type of formation will depend on how the field was originally developed.⁵⁵ Some reservoirs may have suffered from poor procedures in drilling, operating and abandonment, which increases the cost of their adaptation for storage purposes. Depleted

⁴⁸ *EU Gas Storage*, *ibid.* at 134; FERC, Staff Report, *supra* note 26 at 5; Simmons and Co, *supra* note 37 at 3.

⁴⁹ *EU Gas Storage*, *supra* note 26 at 13.

⁵⁰ FERC Staff Report, *supra* note 26 at 5.

⁵¹ NGSA website, *supra* note 25.

⁵² *EU Gas Storage*, *supra* note 26 at 135.

⁵³ FERC Staff Report, *supra* note 26 at 5.

⁵⁴ DOE Basics, *supra* note 34 at 1; FERC Staff Report, *supra* note 26 at 5; Simmons and Co, *supra* note 37 at 3. Further, storage development in the U.S. has developed a trend toward re-engineering existing (especially “high-quality”) storage reservoirs to improve cycling capability and reduce cushion gas requirements (through horizontal drilling, unclogging wells, using fracturing technology to keep clays from sealing off parts of reservoir) rather than developing new storage (FERC Staff Report, *supra* note 26 at 9, 14, 16, 19). In Europe, the biggest expansion in recent storage development has been in depleted reservoirs (*EU Gas Storage*, *supra* note 26 at 16).

⁵⁵ Langford Report, *supra* note 9 at 19.

reservoirs are often old and may require substantial well maintenance and monitoring.⁵⁶ The increasing interest in underground natural gas storage will therefore likely bring obligations as well as benefits to upstream operators, who will be expected to recover oil and gas in such a way as not to destroy or impair the potential for subsequent use of those reservoirs for storage, and to minimize the expense and planning required for storage by employing proper (and more costly) procedures in drilling, operating and abandoning wells.

2.3.2 Salt caverns

Salt caverns are underground cavities created by solution mining (leaching) of salt formations. These formations occur in two forms: salt domes, which are highly gas retentive and resilient to degradation, and salt beds, which are wide and thin (and thus more prone to degradation and with higher development costs).⁵⁷ Salt cavern storage facilities must be located close to water resources for the initial leaching process, and incur high development and operational costs.⁵⁸ However, because salt caverns also tend to have the highest injectivity and deliverability of any of the three main types of storage formations, they are considered to be the most versatile mode of storage, and have the potential to achieve low per unit storage costs.⁵⁹

Salt caverns are typically much smaller in volume than depleted reservoirs or aquifers. Base gas requirements, however, are lowest among the three types of formations (20-30%),⁶⁰ and the injection and deliverability rates are “ultra-high”.⁶¹ Working gas in a salt cavern can be cycled up to 10-12 times a year,⁶² and these facilities are typically used for

⁵⁶ Simmons and Co, *supra* note 37 at 4.

⁵⁷ FERC Staff Report, *supra* note 26 at 6; NGSA website *supra* note 25.

⁵⁸ *EU Gas Storage*, *supra* note 26 at 136.

⁵⁹ *EU Gas Storage*, *ibid.* at 143.

⁶⁰ This may approach 0% in an emergency (Simmons and Co, *supra* note 37 at 4).

⁶¹ FERC, *supra* note 26 at 4; DOE Basics, *supra* note 34 at 1; Simmons and Co, *supra* note 37 at 4. A salt cavern can begin delivery on as little as one hour’s notice (NGSA website, *supra* note 25).

⁶² FERC Staff Report, *supra* note 26 at 4. Reported elsewhere is a typical cycle period of 10-30 days (*EU Gas Storage*, *supra* note 26 at 135). Another document states that salt caverns can be cycled 4 to 5 times per year (Simmons and Co, *supra* note 37 at 4).

short peak-day deliverability purposes—e.g. for fueling electric power plants, or for exploiting short-term price gains in the natural gas market.⁶³

Salt caverns are the most expensive to develop on a capacity basis: leaching and brine disposal costs are high,⁶⁴ as are operational costs (because of higher operational pressures, the corrosive environment, and the increased environmental regulation that such storage may be exposed to).⁶⁵ Higher-volume salt caverns are especially vulnerable to problems arising from the high operating pressures and the costs (including environmental) of leaching and brining.⁶⁶ However, the cushion gas requirements of a salt cavern are low, and cushion gas is one of most expensive elements of a storage project.⁶⁷ Also, salt cavern formations have extremely high gas retention, and therefore little waste gas.⁶⁸ Finally, because salt caverns achieve high injectivity, deliverability, and cycling (much higher than those of aquifers or depleted reservoirs), the cost per storage unit is lower.

2.3.3 Aquifers

Aquifers are porous, permeable rock formations that act as natural water reservoirs, with contents ranging from fresh water to nearly saturated brine.⁶⁹ In the course of developing an aquifer for natural gas storage, gas is injected into the formation from the top, displacing water downward.⁷⁰

Aquifer volume, injectivity, deliverability, and cycling tend to be similar to those of depleted reservoirs, though deliverability may be enhanced using an active water drive.⁷¹

⁶³ FERC Staff Report, *supra* note 26 at 5. The report on gas storage in the EU predicts an increase in demand for high-frequency short-term storage “as markets integrate” (*EU Gas Storage*, *supra* note 26 at 68).

⁶⁴ *EU Gas Storage*, *supra* note 26 at 141.

⁶⁵ *EU Gas Storage*, *ibid.* at 136.

⁶⁶ *EU Gas Storage*, *ibid.* at 151; DOE Basics, *supra* note 34 at 5.

⁶⁷ FERC Staff Report, *supra* note 26 at 19.

⁶⁸ NGS website, *supra* note 25.

⁶⁹ FERC Staff Report, *supra* note 26 at 5.

⁷⁰ Simmons and Co, *supra* note 37 at 4.

⁷¹ DOE Basics, *supra* note 34 at 1.

Aquifer stored gas may be cyclable more than once per season.⁷² Aquifers have higher cushion gas requirements (50-80%) than other formations.⁷³ Like depleted reservoirs, aquifers are usually employed for seasonal demands though they may also be used to meet some peak load requirements.⁷⁴

Aquifer storage facility development is more costly than that of a depleted reservoir: the former requires more infrastructure investment (including powerful injection equipment);⁷⁵ a longer development period (geology will not be known); more cushion gas (both a higher percentage relative to working gas, and because there will be no original gas in cavity to function as cushion gas, a high percentage of which will be permanently unrecoverable—also because of lower retention capabilities);⁷⁶ closer management of injection and withdrawal (for example, although injected gas has already been processed, on extraction from an aquifer it will typically require further dehydration).⁷⁷ On the other hand, though aquifers tend to be more expensive to develop and maintain than depleted reservoirs, an advantageous location close to a market may offset development costs.⁷⁸ Also, if an aquifer storage facility achieves multiple cycles per year, per unit storage costs will be reduced. Finally, although aquifers are considered the least economically attractive formation for natural gas storage, they may be the only geological formation available for development.⁷⁹

2.3.4 Gas storage facilities in Canada

A study published in 2000 estimated Canadian underground natural gas storage capacity at approximately 500 bcf (15% of contemporaneous total U.S. working gas capacity) with

⁷² Simmons and Co, *supra* note 37 at 4.

⁷³ FERC Staff Report, *supra* note 26 at 5.

⁷⁴ FERC Staff Report, *ibid.* at 5, 6.

⁷⁵ *EU Gas Storage*, *supra* note 26 at 137.

⁷⁶ *EU Gas Storage*, *ibid.* at 137; Simmons and Co, *supra* note 37 at 4.

⁷⁷ NGSA website, *supra* note 25.

⁷⁸ FERC Staff Report, *supra* note 26 at 6; Langford Report, *supra* note 9 at 37.

⁷⁹ FERC Staff Report, *supra* note 26 at 6; *EU Gas Storage*, *supra* note 26 at 136; DOE Basics, *supra* note 34 at 4. It is observed, however, that most existing aquifers were developed when the price of gas was low enough to bear such heavy cushion gas requirements, and this will not always be the case, even given an advantageous location with no geological alternatives (NGSA website, *supra* note 25).

facilities comprising mainly depleted reservoirs.⁸⁰ A 2007 survey specified Canadian capacity as 583.8 bcf, consisting of 44 depleted reservoirs, and 8 salt caverns,⁸¹ while the National Energy Board's 2009 report on *Canada's Energy Infrastructure* reported as follows:⁸²

Currently, the working gas capacity of all storage facilities in Canada is estimated at over 18.5 billion m3 (654 Bcf). In Canada, the majority of gas storage is split between Ontario and Alberta. In Alberta, storage facilities are owned by utilities, midstream companies, pipelines and producers. Storage facilities in Ontario were developed and are owned primarily by utilities. Over the next few years, additional high-deliverability storage will be developed in Ontario in response to gas-fired power generation requirements. Ontario also draws upon gas storage in Michigan, through several pipe connections between the state and the province. Michigan has a total of 30 billion m3 (1 060 Bcf) of storage capacity.

At the time that we were preparing this manuscript (Fall 2009) depressed natural gas prices resulted in record storage levels in both Canada and the United States.⁸³

The following parts of the paper examine the natural gas storage regime as it has developed in different jurisdictions.

⁸⁰ Simmons and Co, *supra* note 37 at 10.

⁸¹ Canadian Underground Natural Gas Storage Statistics 2007, American Gas Association, online: <<http://www.aga.org/NR/rdonlyres/8439B684-61F0-46B4-A385-6A1D6A90FF52/0/0902Table45.pdf>>.

⁸² National Energy Board, *Canada's Energy Future: Infrastructure Changes and Challenges to 2020*, October 2009 at 20 – 21, online: <<http://www.neb.gc.ca/clf-nsi/nrgynfntn/nrgyrprt/nrgyfr/2009/nfrstrctrchngchllng2010/nfrstrctrchngchllng2010-eng.pdf>>.

⁸³ Dina O'Meara, "Natural Gas Storage Sets Records", *Calgary Herald*, October 2, 2009, E4 referring to 3.589 tcf in storage in the US and "nearing" 600 bcf in Canada.

3.0 BRITISH COLUMBIA

3.1 Introduction

The legal position in relation to natural gas storage in British Columbia is anomalous. The province's *Petroleum and Natural Gas Act*⁸⁴ (PNGA) has a relatively clear legislative framework for developing storage projects but the only significant storage project in the province, the Aitken Creek Gas storage facility in the northeastern part of the province, is a depleted reservoir which was originally developed (and is continued) on the basis of a production tenure rather than a separate storage tenure. The Aitken Creek storage is at the upstream or production end of the system; there is no significant storage close to market in the Lower Mainland area⁸⁵ and there has been significant public resistance to allowing exploratory drilling in the Fraser Valley to help identify possible natural gas production or storage sites. For example, faced with a proposal from a consortium known as the Fraser Valley Gas Project to drill three deep exploratory wells during the 1980s, the government of the Province of British Columbia appointed David Anderson (who was subsequently to become a federal liberal MP and Minister of the Environment) in May 1990 to conduct a formal public inquiry under the terms of the provincial *Inquiries Act*.⁸⁶ The subsequent report documented the various public concerns including the effect of well drilling on groundwater supplies, potential concerns with

⁸⁴ R.S.B.C. 1996, c. 361 [PNGA], Part 14, and Petroleum and Natural Storage Reservoir Regulation, B.C. Reg. 350/97 [Storage Reservoir Regulation].

⁸⁵ National Energy Board, *The British Columbia Gas Market, An Overview and an Assessment*, April 2004, online: <<http://dsp-psd.pwgsc.gc.ca/Collection/NE23-117-2004E.pdf>>, noting (at 16): "Natural gas storage is extremely limited in B.C. and consists of one underground storage production area facility, Aitken Creek Storage (Aitken Creek), in northeast B.C. and a small liquefied natural gas (LNG) facility on Tilbury Island in the Lower Mainland used by Terasen to meet the peaking needs of its own system. There is no large underground market area gas storage facility in the Lower Mainland. Upstream storage facilities, while beneficial for producers and shippers, have limited usefulness for downstream consumers during times of pipeline constraint which typically occur during peak demand periods when storage is most critical." The report goes on to note that gas distributors may be able to make some use of storage in the US in Washington and Oregon by swapping gas in storage at those facilities with gas that would otherwise flow across the international border at Sumas/Huntingdon.

⁸⁶ Commission of Inquiry into Fraser Valley Petroleum Exploration (B.C.) and D. Anderson, *Report of the Commission of Inquiry into Fraser Valley Petroleum Exploration* (Victoria: The Commission, 1991) [The Anderson Report]. See also, Ministry of Energy, Mines and Petroleum Resources, *Fraser Valley Drilling: Response to the Report of the Commission of the Inquiry into Fraser Valley Petroleum Exploration* (Toronto: Micromedia Ltd., July 4, 1991). The response did not deal with natural gas storage issues.

respect to seismic activity, and the possible effects of a gas storage project on surface property values. While some of these concerns were directed at any oil and gas exploration, it is clear that many of the concerns specifically related to natural gas storage. Anderson's own conclusions suggested that many of these concerns were, based on experience elsewhere, seriously overstated.

In recent years there has been significant controversy as to whether Aitken Creek should be treated as a public utility, and, if so, as to the degree of economic regulation that should be associated with such a designation.⁸⁷ We discuss this issue briefly at the end of this section.

This section begins with an account of BC's early legislation, the *Underground Storage Act*⁸⁸ (later renamed the *Petroleum Underground Storage Act*)⁸⁹, followed by its amendment in 1988 to incorporate the storage regime within the *PNGA*. We then turn to discuss a significant provincial policy paper on gas storage (1995) before turning to examine the manner in which the Aitken Creek storage project came to be approved.

3.2 The 1964 *Underground Storage Act*

British Columbia's original storage legislation, the *Underground Storage Act* of 1964, established five different steps for the recognition and creation of a natural gas storage facility: (1) designation by the Lieutenant Governor in Council that the Act applied to that area of the province,⁹⁰ (2) application for an exploration licence (s.3), (3) application by a licensee to have an area declared to be a storage area and for the declaration of a storage reservoir (s.5), (4) declaration of an area as a storage area and a reservoir as a

⁸⁷ The BC Utilities Commission decided by way of a letter decision (Letter No. L-47-06, August 25, 2006) that Unocal as owner/operator of Aitken Creek fell within the definition of a public utility. This triggered Unocal's application for an exemption from the Act. We have drawn heavily on the public filings in this application in writing the account that follows. The filings are available, on the BCUC website, online: <<http://www.bcuc.com/ApplicationView.aspx?ApplicationId=136>> [Unocal filings]. See, in particular, Exhibit B-5.

⁸⁸ S.B.C. 1964, c.62.

⁸⁹ R.S.B.C. 1979, c.325 [*PUSA*].

⁹⁰ *PUSA*, *ibid.*, s.2. The *Act* was not a law of general application. It only applied to those areas designated by the Lieutenant Governor in Council.

storage reservoir⁹¹ by the Lieutenant Governor in Council on the recommendation of the Minister (ss.6-7), and, (5) application for, and grant of, an exclusive storage right for a period not to exceed 21 years (but subject to extension) (ss.8-9).

The legislation also contained the basic prohibition that (except as otherwise authorized by statute), no person shall (s.4(3)) “carry out exploration of any land or its subsurface to determine the suitability of the subsurface for underground storage of hydrocarbons”. On the face of it, this prohibition, and indeed the entire statute, potentially,⁹² applied to publicly and privately owned storage rights.

The *PUSA* did not regulate drilling operations for storage purposes but left this to the *Petroleum and Natural Gas Act*. Neither did the *PUSA* deal expressly with the question of the ownership of storage rights. Thus, the *Act* did not contain a statutory vesting clause and did not deal with the question of whether the minister really could grant exclusive storage rights with respect to a storage reservoir where such rights might be privately owned. The *Act* dealt with Crown surface rights expressly⁹³ and private surface rights more indirectly by incorporating⁹⁴ the terms of Part 3 of the *PNGA*, (the surface rights provisions), thereby allowing a licensee or the holder of a storage right to use the compulsory acquisition provisions of that part of the *Act*. The *Act* dealt expressly with prior rights⁹⁵ and with one other possible resource use conflict (that with mine workings⁹⁶), but the Minister would also have ample discretion to resolve potential conflicts with oil and gas operations as part of the approval of an area as a storage area\storage reservoir.

⁹¹ The *Act* defined a storage reservoir as “a naturally occurring underground cavity or system of cavities or pores, or an underground space or spaces created by some external means, that may be used for the storage of a hydrocarbon and designated as a storage reservoir by the Lieutenant Governor in Council”. The first part of the definition embraces depleted reservoirs, the second part (“created by external means”) would include salt caverns.

⁹² I say “potentially” simply because, as noted above, the legislation only applied to “designated” parts of the Province.

⁹³ *PUSA*, *supra* note 89, s. 3(5) authorized the Minister to provide a licence for entry.

⁹⁴ *PUSA*, *ibid.*, s.11.

⁹⁵ *PUSA*, *ibid.*, s.4(1) provided that a licence “is subject to all rights existing prior to the issuance of the licence”.

⁹⁶ *PUSA*, s. 4(2).

3.3 The storage regime under the current *Petroleum and Natural Gas Act*

The *PUSA* was repealed in 1987 and a somewhat revised version was incorporated into what is now Part 14 of the *Petroleum and Natural Gas Act* (ss. 126 – 132). This new Part was amended in 1998 to take account of the creation of the BC Oil and Gas Commission⁹⁷ and in 2008⁹⁸ to extend the concept of storage to include storage for the purposes of disposal. Hence, the definition of storage reservoir now reads as follows:⁹⁹

... a naturally occurring underground reservoir that is capable of being used for the introduction, disposal, storage or recovery of petroleum, natural gas, water produced in relation to the production of petroleum or natural gas, waste or any other prescribed substance;

This provision is broad enough to embrace acid gas disposal or carbon capture and storage projects to the extent that the substances that are the subject of such schemes are “prescribed” by regulation.

Section 126 continues the basic prohibition of the earlier legislation to the effect that no person may engage in any geophysical exploration for storage without obtaining a licence. The Division Head has broad discretion in determining whether or not to grant a licence and the terms and conditions of any such licence.¹⁰⁰

⁹⁷ *Oil and Gas Commission Act*, S.B.C. 1998, c. 39.

⁹⁸ *Oil and Gas Activities Act*, S.B.C. 2008, c.36, s. 152(g).

⁹⁹ *PNGA*, *supra* note 84, s.1. Note that this definition is now confined to naturally occurring reservoirs; it would not include a salt cavern.

¹⁰⁰ The legislation continues the idea that a licensee may not carry out exploration within 3 km of a mine or an existing storage reservoir without express permission; and see s.6 of the Drilling and Production Regulation, B.C. Reg. 362/98. Also relevant is the Storage Reservoir Regulation, *supra* note 84. The regulation does not apply to the Fraser Valley (s.3). Section 4 of the Regulation provides that the applicant under each of ss. 126, 130 and 131 should include “the information specified in section 12 of the British Columbia Oil and Gas Handbook”. The Handbook appears to have been withdrawn and replaced by a set of Guidelines including a Guideline on storage (discussed *infra*). This Guideline does not specifically refer to a section of the *Act* but it does refer to a licence for storage which suggests that it is directly relevant only to s.131. Certainly some of the information required or referred to by the Guideline goes far beyond what would be available to an applicant for an exploration licence.

Section 127 also continues the idea of government designation of a storage area (by the Lieutenant Governor in Council on the recommendation of the Minister of Energy, Mines and Petroleum Resources) although the section does not draw a clear connection between designation and an application on the part of a licensee. Section 128, however, introduces a significant innovation in the *Act* and seeks to clarify the ownership of storage rights. Thus s. 128 (entitled “vesting of storage reservoir”) provides that:

(1) Ninety days after designation of land as a storage area, a right, title and interest in a storage reservoir in or under the storage area and in any water inside the storage reservoir is vested in the government free of encumbrances unless, before the expiry of the 90 days, the Lieutenant Governor in Council rescinds the designation.

(2) A right, title or interest in anything other than water that is found, naturally occurring, inside the storage reservoir is not vested in the government merely because of the vesting under subsection (1).

(3) If a right, title or interest in land has vested in the government under subsection (1), that interest, for the purposes of the application of section 23 (2) (a) of the *Land Title Act*, is deemed to be held by the government pursuant to a subsisting exception and reservation contained in the original grant of that land from the government.

In short, Crown vesting is a necessary consequence of a designation order unless the designation is revoked.¹⁰¹ And a vesting order will necessarily divest any other owner of storage related property rights (but no other rights). Section 129 goes on to provide that:

A person who had a right, title or interest in land that vested in the government under section 128 may apply under section 16 (1) (c) for compensation for the loss of that right, title or interest.

¹⁰¹ The language of the vesting does not further describe the nature of that right (other than to note that it is free of encumbrances). We are simply left to infer that it is an exclusive and perpetual right. The vesting extends to water and presumably this includes the right to use the water for storage purposes (i.e. storage\disposal by dissolving the gas stream in solution).

As explained further below, the section is deliberately agnostic as to whom such a person might be. In particular, the section takes no position on whether applications might be forthcoming from surface owners or mineral rights owners.¹⁰² Presumably, any party bringing such an application would have the onus to establish that it previously owned storage rights that the Crown had acquired through the vesting effect of the designation order. The Crown might resist that application by showing that storage rights were already vested in the Crown by virtue of its ownership of the mines and minerals. It is the genius of this legislation that it postpones the debate on ownership until the first decision on an application. At the same time, it offers a developer sufficient security to go ahead, confident that the vesting gives it, through the Crown, a clear title.

The reference to s.16 provides the Mediation and Arbitration Board (established by the *Act*, principally for the purposes of dealing with surface rights compensation matters) with the jurisdiction also to deal with applications under this section. A compensation order made by the Board would need to take account of the following heads of compensation referred to in s. 21(1):

- (a) the compulsory aspect of the entry, occupation or use,
- (b) the value of the land and the owner's loss of a right or profit with respect to the land,
- (c) temporary and permanent damage from the entry, occupation or use,
- (d) compensation for severance,
- (e) compensation for nuisance and disturbance from the entry, occupation or use,
- (f) money previously paid to an owner for entry, occupation or use,
- (g) other factors the board considers applicable, and
- (h) other factors or criteria established by regulation.

¹⁰² There are private mineral owners in the Peace District of British Columbia and in the Lower Mainland and on Vancouver Island.

These factors are clearly designed to deal with the typical surface rights application. There is a considerable body of surface rights jurisprudence and practice both within British Columbia and the prairie provinces on the application of these heads, but little if any experience dealing with how these heads might be applied to the compulsory taking of privately owned storage rights.¹⁰³ So far as we are aware, the Board has not been seised with any application under s.16(1)(c) of the *Act*.¹⁰⁴

It is important to emphasise that there is one further significant difference between an ordinary surface rights compensation award and an award that might be made in the case of storage. In a typical surface rights setting, the surface rights are acquired by the private operator who also pays the compensation. In the case of an application under s.16(1)(c) the application for compensation would be brought by the person claiming the storage rights, but the defendant will be the Crown since it is the operation of s.128 that vests the storage rights in the government.¹⁰⁵

The Hon. Jack Davis, then Minister of Energy, explained the purpose of these provisions in speaking to the Bill at Second Reading. He observed that the sections were designed to clarify the ownership question. Although Davis framed the issue in terms of a possible claim by a *surface* owner, the language of the Bill and the subsequent *Act* is clearly broad enough to embrace an application from an owner who claims storage rights on the basis of a mineral title rather than on the basis of a surface title. Indeed, as noted above, one of the innovative and attractive features of the legislation is that it is quite agnostic as to ownership.¹⁰⁶ Davis explained as follows:

¹⁰³ The only Canadian experience that we are aware of dealing with compensation orders for storage rights is in Ontario. See discussion of that practice, *infra*, Part 7.

¹⁰⁴ An email inquiry to the Board on July 15, 2009 elicited the following response from the current Chair, Cheryl Vickers: “It certainly hasn’t happened since I’ve been chair of the Board (July 2007) and I am unaware of any applications of this nature before that.”

¹⁰⁵ In Ontario, see Part 7, *infra*, the operator is responsible for compensation.

¹⁰⁶ The Anderson Report, *supra* note 86, perhaps surprisingly, does not contain an extensive analysis of the ownership of storage rights. Such discussion as there is occurs in Chapter 14, entitled “Public Participation – Process and Issues”. In this chapter the Commission deals with risk analysis and the perception of risk and examines the entrenched opposition of an NGO, Friends of the Fraser Valley, to the proposed drilling. Anderson contrasts this position with the position of landowners in the Valley, up to 60% of whom were likely to own the subsurface rights based on the date of the original Crown grants. The general tenor of the discussion (and see especially at 152) suggests that Anderson was proceeding on the basis that storage

[The Bill] rolls the existing legislation relating to the storage of oil and natural gas into the *Petroleum and Natural Gas Act*...

There has been a problem with respect to underground storage. The question as to who owns the voids or caverns—if I can put it that way—underground is not clear in the existing legislation. Ownership is clarified in the new legislation: it is vested in the Crown. If there is any claim launched by a surface owner with respect to that ownership matter, there is provision for reparations to the surface owner. It's difficult to imagine what those claims might be, but nevertheless provision is made in the legislation which protects the surface rights owner if a valid claim can be made...¹⁰⁷

In addition to the storage exploration tenure provided for by s.126 and the vesting and compensation provisions, this Part of the *Act* also provides for Crown leases of storage reservoirs (s.130) as well as licences to operate a storage reservoir. Section 130 deals with the storage lease and contemplates that an application for a storage lease for “a

rights were held by the owner of the subsurface rights. He suggests that a government decision to refuse to allow exploratory drilling might trigger a claim to compensation. Anderson does refer generally to the role of the Mediation and Arbitration Board, and the report does contain a discussion of Crown petroleum and natural gas tenure (Appendix H), but remarkably enough there is no discussion of what is now Part 14 of the *Act* dealing specifically with storage, even though, as noted above, this part was introduced in 1987.

¹⁰⁷ British Columbia, Legislative Assembly, *Hansard* (March 1, 1988) at 3190 (Hon. Mr. Davis). And further: “This legislation is timely for several reasons. There are several companies poised to undertake exploratory work in the lower mainland. One of them has already started drilling a well near Birch Bay, just south of the international boundary line. Two others have been buying up leases, preparing to undertake extensive exploratory work. The likelihood of these companies finding natural gas is slight: a one-in-ten or one-in-twenty possibility. What they are looking for really is what they refer to as competent reservoirs. They are looking for geological formations which perhaps contain water now but which could be used for the storage of natural gas brought down by Westcoast Transmission from the Peace River area. If storage capacity is found in the lower mainland, it will be a boon primarily to the consumers of natural gas in the lower mainland area. If the storage is adequate, the distributing company - now B.C. Hydro Gas - will be able to negotiate a much lower rate for mainline transportation, will take gas during the summer months from the Peace River area and store it, and will draw steadily on the pipeline rather than intermittently and primarily during the winter months. Because the transportation charge is much reduced, the cost saving can and will be passed on to the consumer, and the cost saving could be in the order of 5, 10 or 15 percent”.

storage reservoir that is owned by the government”¹⁰⁸ may be made either by the storage exploration licensee or by the holder of another form of Crown petroleum and natural gas tenure (a natural gas permittee, a drilling licensee, or a lessee). The Minister has considerable discretion in deciding whether or not to grant such an application and as to the terms and conditions of any resulting lease. The *Act* is silent on the question of duration and so this too is left to the Minister. The Regulations fix the rental at \$7.50 ha per year.¹⁰⁹

The regulatory issues associated with the approval of a storage operation are dealt with by the Oil and Gas Commission¹¹⁰ rather than by the Department. A storage licence issued by the Commission under s.131 provides the regulatory authority to operate the storage; this is a necessary companion to the proprietary rights conferred by the lease. No person may develop or use a storage reservoir without a licence (s.131(1)) and the Commission has considerable discretion to grant or refuse an application, to determine appropriate conditions, and to set the duration of any such licence. The Commission has issued a Guideline for applicants.¹¹¹ The Guideline suggests that an application should include information on: the need for the project, project description and title holder, geological and engineering data including information on the nature and size of the trap and operating pressures, market matters including statements from possible users, and the nature of any surface facilities. The Guideline refers to both depleted reservoir projects and aquifer projects.

It is apparent that Part 14 of the *Act* on storage is not a complete code. Other sections of the *Act* will also be triggered in addition to the surface rights provisions already mentioned in the context of compensation. For example, an exploratory well drilled to

¹⁰⁸ Presumably whether by virtue of the operation of the vesting provision or otherwise.

¹⁰⁹ Storage Reservoir Regulation, *supra* note 84, s.7.

¹¹⁰ BC Oil and Gas Commission, online: <<http://www.ogc.gov.bc.ca/>>.

¹¹¹ Guideline for Application for a Licence for Underground Storage of Hydrocarbons, online: <http://www.ogc.gov.bc.ca/arb/arb_print.asp_aoid=53.html>. The Guideline suggests that it only applies to northeastern BC.

help identify a storage site would require a well authorization under ss.83 and 85 of the *PNGA*, as would an injection\withdrawal well.¹¹²

3.4 Provincial policy paper (1995) on natural gas storage

After the introduction of the legislation, the Province did further work to develop a policy framework on natural gas storage during the mid-1990s and issued a discussion paper: “Natural Gas Underground Storage Policy for Northeast British Columbia”.¹¹³ The paper provides valuable guidance as to how the government saw the legislation being applied. Here we summarize what the paper had to say about: (1) the value of storage, (2) ownership issues, (3) the form of tenure for a storage project (storage rights vs production rights and duration), and (4) protective corridors for storage projects.

The paper contained the frank acknowledgement that it was focused on upstream storage given that “Efforts to explore for storage opportunities closer to domestic and export markets, and in more densely populated regions of the province have met with sufficient public resistance to forestall further serious consideration ...”.¹¹⁴ But the paper still acknowledged the value of upstream storage on the grounds that such storage might:¹¹⁵

- allow optimal utilization of production, processing and transportation facilities;
- reduce production variations otherwise occurring in response to seasonal fluctuations in gas demand;

¹¹² The *Act* defines a “well” as “a hole in the ground ... (b) made or being made by drilling, boring or any other method to explore for, develop or use a storage reservoir for the storage or disposal of petroleum, natural gas, water produced in relation to the production of petroleum or natural gas, waste or any other prescribed substance, (c) used, drilled or being drilled to inject natural gas, water produced in relation to the production of petroleum or natural gas or other substances into an underground formation in connection with the production of petroleum or natural gas, (d) used to dispose of petroleum, natural gas, water produced in relation to the production of petroleum or natural gas, waste or any other prescribed substance into a storage reservoir....”

¹¹³ The paper (16pp) (hereafter “Provincial Policy Paper”) is available as part of Unocal’s Aitken Creek filings, *supra* note 87; that copy of the paper is undated but the paper requests comments by January 1996 suggesting that it was circulated in late 1995 for comment.

¹¹⁴ Provincial Policy Paper, Unocal filings, *ibid.*, section 3.0, Underground Storage Prospects in British Columbia..

¹¹⁵ Provincial Policy Paper, Unocal filings, *ibid.*

- increase security of supply from interruptions to upstream gas movement;
- augment enhanced oil recovery and gas cycling schemes;
- provide opportunities for improved gas recovery from marginal pools; and
- improve overall provincial gas deliverability.

On the matter of ownership, the paper suggested that the province had concluded that ownership of storage space was uncertain but that three possible parties might be able to make a claim: the Crown, the surface land owner, or the petroleum and natural gas rights owner¹¹⁶ and further acknowledged that the Crown vesting provision (now s.128) implicitly conceded that there could be some privately owned storage rights in the province. Based on this assessment the paper offered the following recommendation:¹¹⁷

As a standard practice, the Ministry will not expropriate subsurface rights for storage projects, but only issue those rights that belong to the Crown. Storage proponents shall be responsible for securing access to any additional subsurface rights held, or thought to be held by, third parties. The Ministry will retain the right to use expropriation as a measure of “last resort” for storage projects where efforts by the proponent to acquire third-party rights have failed and the Ministry determines the project to be in the broader public interest.

One of the substantive issues the paper discussed is the question of whether a proponent would be able to proceed solely on the basis of a Crown storage right or whether a proponent would also require a Crown production right. The paper suggested that the latter would be more likely and that to launch a storage project without also owning the

¹¹⁶ Provincial Policy Paper, Unocal filings, *ibid.* The paper also offered a statement of the position in Alberta and Saskatchewan noting that each of the three westernmost provinces had adopted “unique approaches” to gas storage. The report, section 5, Subsurface Ownership Rights, suggested that Saskatchewan provided that the Province’s “space” legislation vested all pore space in the Province. We think that this is likely an overbroad characterization of the current legislation which is confined to those situations in which there is a Crown mineral title. See discussion, Part 5 *infra*. Alberta’s approach was described as follows: “Alberta has elected to presume provincial ownership without enacting legislation and will address the legality of the ownership claim when, and if, challenged.” If this ever were a correct statement of Alberta’s policy it is certainly incorrect now, see discussion Part 4, *infra*.

¹¹⁷ Provincial Policy Paper, Unocal filings, *ibid.*, section 5.

relevant production rights would place “severe risks and constraints on the proponent”¹¹⁸ because of its lack of control if production rights were held by a third party and because of the “inability to effectively manage the project’s cushion gas due to restrictions on use of any native hydrocarbons”.¹¹⁹ The concern underlying this latter point is simply that in addition to producing injected gas the storage lessee might also be producing native gas owned by the Crown—potentially problematic in the absence of a tenure to do so.

All of these concerns led the paper to suggest that the exploration licence\lease combination was perhaps best suited to cases where there might be freehold subsurface ownership or where the target was an aquifer or a salt formation and that the Minister should generally “issue storage leases only to applicants who already hold petroleum and natural gas tenure in the proposed storage area.”¹²⁰ The paper acknowledged that it was sometimes difficult to classify a project as a storage project or as a gas cycling project (i.e. associated gas reinjected to preserve reservoir pressure). This was the historical background to the Aitken Creek project (discussed below) which explains why it was licensed as a scheme under what is now s.100 of the *PNGA*.¹²¹ The classification was important to the government principally because of the different royalty treatment of the injected gas. In the case of an enhanced recovery scheme, injected gas would not be subject to royalty until produced; while in the case of a commercial storage project royalty would be assessed upon injection. The paper suggested that in the case of a hybrid project it might be necessary for the parties (the Crown and operator) to negotiate the pre-defined point at which the project might move from a production\recovery operation to a commercial\storage operation.¹²²

¹¹⁸ Provincial Policy Paper, Unocal filings, *ibid*.

¹¹⁹ Provincial Policy Paper, Unocal filings, *ibid.*, section 6, Tenure.

¹²⁰ Provincial Policy Paper, Unocal filings, *ibid*.

¹²¹ Note that s.100 continues to provide that: “A scheme for any of the following must not be proceeded with unless the commission, by order, approves the scheme on terms the commission specifies: (c) the processing, storage or disposal of natural gas”. Natural gas is defined to include both CO₂ and H₂S but only so long as they are “produced from a well”. Thus a storage\disposal project might include an acid gas disposal project but not a pure CO₂ disposal project where the CO₂ stream originated from an industrial activity. Such a scheme would presumably need to be licensed under Part 14.

¹²² Provincial Policy Paper, Unocal filings, *supra* note 87, Section 9, Crown Royalty. The paper also addressed Crown royalty issues and rental issues. On Crown royalty the paper suggested that it was necessary to provide for a royalty on cushion gas on the basis of a deemed rate of extraction. And on rental

As for the duration of a storage lease, the paper suggested that “tenure should be of sufficient length to provide the applicant with long-term project security, yet contain provisions that give the Crown some flexibility to adjust terms to reflect changing circumstances.”¹²³

The paper also addressed the question of whether the Crown should reserve some sort of protected corridor surrounding the storage scheme within which special caveats on future operations might apply.¹²⁴ In general the paper suggested that this would be inappropriate since it served to transfer the risk of drawing proper boundaries from the proponent to the Crown and might also have a detrimental impact on Crown bonus bid revenues in relation to potentially productive contiguous properties.

3.5 Aitken Creek

The Aitken Creek storage facility is a major storage facility in northeast British Columbia. It is jointly owned by Chevron and BP and has a working gas capacity of 59.2Bcf. The storage is connected to both the Spectra system¹²⁵ and to the Alliance system.¹²⁶

As noted in the previous section, Aitken Creek was approved as a gas cycling scheme and not as a storage project.¹²⁷ The field was discovered in 1959 and began producing oil in 1962. Gas cycling was first approved in 1965 and continued until 1977 when the government authorized concurrent production of oil and the gas cap. The field was first

the paper acknowledged that a storage operator might end up paying two sets of rents; rent for a production tenure and rent for a storage tenure.

¹²³ Provincial Policy Paper, Unocal filings, *ibid*.

¹²⁴ The Aitken Creek project was protected by a corridor two spacing units in width.

¹²⁵ Formerly the Westcoast system. This system can deliver gas to the lower mainland of BC, to the US pacific coast at Huntington\Sumas and to the Alberta system at Gordondale.

¹²⁶ The Alliance pipeline system, built in the late-1990s, is a bullet pipeline that takes production from NW Alberta and BC to the Chicago market. The pipeline is now owned by Enbridge Income Fund and Fort Chicago Energy Partners.

¹²⁷ The material in this paragraph is based on Unocal’s filings in support of its application for exemption from regulation as a utility, *supra* note 87.

proposed as a storage project in conjunction with a planned liquefied natural gas (LNG) project at Port Simpson. Union Oil applied for approval of the storage project as an energy project under the terms of s.19(1)(a) and 20 of the then *Utilities Commission Act* (*UCA*).¹²⁸ The Minister of the day issued an exemption order from the terms of the *UCA* on certain conditions including compliance with the terms of a scheme approval under s.116 of the *PNGA*. Those terms included a maximum storage pressure, a protective corridor around the project, and other conditions dealing with deeper drilling and production accounting. Royalty was to be payable on stored gas “when first produced”. Both the exemption order (termed a disposition order) and the Ministerial Order approving the scheme have been significantly amended over time to take account, *inter alia*, of the collapse of the Port Simpson LNG project.¹²⁹ However, the storage project continued to be principally regulated under the terms of the scheme approval under the *PNGA* (then s.116, now s.100). Furthermore, in response to concerns raised at the time of the 1995 discussion paper, government officials assured Unocal that the project would be grandparented from any new storage rules, although it was also suggested that, if Unocal required modifications, efforts would be made to regulate the project under the storage provisions of the *Act* and *inter alia* would require a storage lease rental and discontinue the protected corridor.

None of this seems to have happened. However, by letter decision of August 2006 the BCUC decided that the Aitken Creek Storage Facility fell within the definition of public utility in the *Utilities Commission Act*.¹³⁰ In response, Unocal sought leave to appeal that decision but also sought a broad exemption order under s.88 of the *Act*. The Commission and the Lieutenant Governor in Council ultimately granted that application at least in part

¹²⁸ These provisions dealing with “energy projects” have since been repealed. It now seems correct to say that the *Utilities Commission Act* would not apply unless the project were being constructed by a public utility.

¹²⁹ The royalty treatment was changed in 1988 and Union was allowed to increase maximum operating pressure from the discovery pressure of 10736 KPa to 19300 KPa in 1998.

¹³⁰ BCUC Letter No. L-47-06, *supra* note 87.

but left open the possibility of complaint-based oversight of the operation.¹³¹ The Commission also issued a certificate of public convenience and necessity for the facility.

In deciding to grant the exemption application, at least in part, the Commission took the view that the application should only be granted to the extent that this would serve the public interest and thus the Commission sought assurance that Unocal would not be in “a position where it is able to exert significant monopoly or market power by discriminating on the basis of price or service, withdrawing service, or setting rates which are unreasonable.”¹³² The Commission continued:¹³³

The Commission Panel notes that a range of services are offered by physical storage facilities, each with its own geographic market, substitutes and barriers to entry. A storage operator may be found to exert differing amounts of market power in each segment. In particular, the services that gas storage provides are: (i) seasonal term supply, (ii) daily balancing, (iii) peaking, (iv) price hedging, and (v) alternative supply (supply reliability).

.... In the case of the services provided by Unocal in its operation of the Storage Facility, the public interest includes the interests of Unocal, storage contract holders, and customers of TGI [Terasen Gas, a distribution utility] who are directly affected by the bilateral agreement entered into by Unocal and TGI and yet have no opportunity to directly influence those negotiations. While these interests may at times conflict, all parties have a stake in the safe and reliable operation of the Storage Facility offering a host of storage related services at a fair and reasonable cost.

¹³¹ Unocal filings, *supra* note 87, BCUC Order No. G-71-08, April 18, 2008. The facility is now operated by Aitken Creek Gas Storage ULC. It appears that Unocal did not proceed with its appeal given the exemption order.

¹³² Unocal filings, *ibid.*, BCUC Order G-167-07, Appendix B at 6.

¹³³ Unocal filings, *ibid.* BCUC Order G-167-07, Appendix B at 7.

The Commission rejected Unocal's request for complete exemption since it was not satisfied that Unocal was unable to exercise market power¹³⁴ but concluded that full prospective costs of service regulation was not necessary and that complaints-based regulation would be adequate.¹³⁵

3.6 Other regulatory oversight of storage projects

In addition to the tenure issues that fall within the jurisdiction of the Department of Energy, Mines and Petroleum Resources and the storage licence approval dealt with by the Oil and Gas Commission, an underground storage project may also trigger the application of the province's *Environmental Impact Assessment Act*¹³⁶ though not where the project occurs in a depleted oil and gas reservoir in parts of northeast BC. Thus table 8 of the Reviewable Projects Regulation¹³⁷ provides that the following constitute (or do not constitute) a reviewable project:

- (1) Subject to subsection (2), a new energy storage facility with the capability to store an energy resource in a quantity that can yield by combustion ≥ 3 PJ of energy.
- (2) Development or use of naturally occurring underground reservoirs for the storage of petroleum or natural gas is not reviewable under subsection (1) if those reservoirs are located in the Western Canadian Sedimentary Basin of North East British Columbia within the map groups and blocks set out in Appendix 2.

The Regulation contains a similar exception in relation to modifications of existing projects.

¹³⁴ Unocal filings, *ibid.* BCUC Order G-167-07, Appendix B at 14.

¹³⁵ Unocal filings, *ibid.* BCUC Order G-167-07, Appendix B at 19.

¹³⁶ S.B.C. 2002, c.43.

¹³⁷ B.C. Reg. 370/2002.

3.7 Conclusions for British Columbia

In summary, British Columbia has only one geological gas storage facility and that is located in the producing part of the province. The province recognizes that gas storage rights may be owned by private parties as well as by the Crown, apparently on the basis either of private ownership of mineral titles or ownership of the surface. However, the province has adopted a mechanism whereby storage rights in relation to any particular property may be vested in the Crown. Private owners, to the extent that they are disentitled as a result of such a vesting, may be able to claim compensation. Although hardly tested, this should be an effective mechanism to deal with potential holdout problems. The province has developed a separate tenure system for storage although, as a matter of practice, the lone storage project in the province is licensed on the basis of a production tenure and a gas conservation scheme rather than on the basis of a storage tenure.

The province has separated regulatory approval from questions of property rights. Regulatory approval rests with the Oil and Gas Commission not the Department of EMPR. While historically the province's storage facility was not subject to rate regulation, recent developments have brought the Aitken storage facility under the complaint supervision of the BC Utilities Commission.

4.0 ALBERTA

4.1 Introduction

Alberta has a well developed natural gas storage industry.¹³⁸ While storage was originally developed by the natural gas distribution utilities operating in Alberta (e.g. ATCO and its predecessors¹³⁹) there is now considerable market-based commercial storage available to producers and others to manage their purchase and sale obligations and to hedge the market. The major storage locations are at Edson, McLeod, Crossfield, Carbon, Hussar, Countess and Suffield.¹⁴⁰

¹³⁸ In addition, the petrochemicals industry in the province also makes use of salt cavern storage facilities for natural gas liquids. For a useful discussion see the EUB's Post-Incident Report, April 2002, BP Canada Energy Company Ethane Cavern. The Inquiry Report notes (at 4) that there were some 42 salt caverns in the Fort Saskatchewan area, broken down as follows: Dow 7, NGL, 5 ethylene, EnerPro, 10 NGL, BP 10 NGL, Williams, 10 NGL and Atco dry gas. The report is available online: <http://www.ercb.ca/docs/Documents/reports/BP-report.pdf>.

¹³⁹ See Alberta Utilities Commission (AUC) Decision 2007005: ATCO Gas South Carbon Facilities - Part 1 Module – Jurisdiction (2005/2006 Carbon Storage Plan) Application No. 1357130 February 5, 2007, online <http://www.auc.ab.ca/applications/decisions/Decisions/2007/2007-005.pdf> at 3 - 10 discussing the evolution of ATCO's Carbon Storage facility. This field was originally purchased and developed by Canadian Western Natural Gas as a producing field to provide peaking capacity for the utility. It was brought into CWNG's rate base in 1958. The field was converted into a storage reservoir in 1967. Over time CWNG and later ATCO gave TCPL and later others (including NUL another utility) the contractual right to use increasing amounts of carbon storage and the facility was expanded by providing increased compression. In the early 1980s Carbon was the only commercial storage facility in Alberta but during the 1990s and early 2000s the competitive market evolved and in this and earlier proceedings ATCO sought to argue that the facility was no longer needed for utility purposes and by the time of this application the storage facility was used 100% for merchant storage capacity with the ATCO utility operation leasing the entire capacity (38.7 bcf) to ATCO Midstream at 45 cents per GJ. In Decision 2006-098 the Commission decided that it was not necessary for Carbon to remain in the rate base for load balancing purposes. ATCO could achieve this goal by other means. However in Decision 2007-005 the Commission took the view that Carbon could remain in the rate base for revenue generation purposes. The Court of Appeal rejected that conclusion in *ATCO Gas and Pipelines Ltd. v. Alberta (Energy and Utilities Board)* 2008 ABCA 200. As a result of that decision Carbon Storage has been removed from ATCO's rate base effective October 2006 (Decision 2006-098); see AUC Decision 2009-067, June 26, 2009.

¹⁴⁰ ERCB Report, *Alberta's Energy Reserves 2007 and Supply/Demand Outlook 2008-2017*, ST98-2008, <http://www.ercb.ca/docs/products/STs/st98-2008.pdf> and especially Table 5.9, Commercial natural gas storage pools as of December 31, 2007. This table lists the following 8 facilities (name, operator, capacity (m3)): (1) Carbon Glauconitic, ATCO Midstream, 1, 127; (2) Countess Bow Island N & Upper Mannville M5M, Niska Gas Storage, 817; (3) Crossfield East Elkton A & D, CrossAlta Gas Storage, 1,197; (4) Edson Viking D, TransCanada Pipelines Ltd. 1,775; (5) Hussar Glauconitic R, Husky Oil Operations Limited, 423; (6) McLeod Cardium A, PPM Corp Energy Canada Ltd., 986; (7) McLeod Cardium D, PPM Corp Energy Canada Ltd., 282; (8) Suffield Upper Mannville I & K, and Bow Island N & BB & GGG, Niska Gas Storage, 2,395.

In response to the growing interest in natural gas storage and concerns as to the possible uncertainty as to title to storage rights, the province enacted legislation in 1994 to clarify the ownership of natural gas storage rights. The legislation confirms that storage rights are owned by the owners of the natural gas and petroleum titles. Consequently, storage rights in Alberta may be owned by the Crown or by private parties. While the Crown owns about 80% of the mineral rights within the province¹⁴¹, in some areas, especially in the southern third of the province, gas storage operators can expect to deal with a mixed pattern of Crown and private mineral titles and therefore storage owners. The following sections discuss the storage title clarification legislation, the Crown's natural gas storage disposition legislation, and the regulatory approach to the approval of natural gas storage projects in Alberta.

4.2 Clarification of the ownership of natural gas storage rights

In 1994 the province amended the *Mines and Minerals Act* to clarify the ownership of natural gas storage rights.¹⁴² The provision as it reads in the current s.57 of the *Act* provides (in part) as follows:

57(1) Subject to subsection (2),

(a) where a person owns the title to petroleum and natural gas in any land, that person is the owner of the storage rights with respect to every underground formation within that land, and

(b) where one person owns the title to petroleum in any land and another person owns the title to natural gas in the same land, those persons are co-owners of the storage rights with respect to every underground formation within that land.

¹⁴¹ Alberta Department of Energy, "Alberta Oil Sands Tenure Guidelines" (August 14, 2009), online: <http://www.energy.gov.ab.ca/OilSands/pdfs/GDE_OST_2009_Ch1.pdf>.

¹⁴² S.A. 1994, c.22.

(2) Where a person owns the title to a mineral in any land and operations for the recovery of the mineral result or have resulted in the creation of a subsurface cavern in that land, that person is the owner of the storage rights with respect to that subsurface cavern to the extent that it lies within that land.

(3) A person who has storage rights in respect of a subsurface cavern within any land has the right to recover any fluid mineral substance stored in that cavern, to the exclusion of any other person having the right to recover a mineral from the same land.

These amendments do several things. First, subsection (2) establishes a special rule for “subsurface caverns”. A subsurface cavern is “a subsurface space created as a result of operations for the recovery of a mineral.” Acorn and Ekelund suggest that the drafters had in mind here the example of a salt cavern created by dissolving salts by hydraulic methods and did not have in mind the scenario of a depleted oil and gas reservoir.¹⁴³ Subsection (2) establishes that the storage rights with respect to that created cavern will be held by the holder of that particular mineral title, i.e. in the case of the salt cavern, the owner of the salt mineral rights. Acorn and Ekelund comment as follows:¹⁴⁴

[the subsection] is intended to settle the matter of ownership of storage rights in subsurface caverns in favour of the owner of the mineral that was recovered by operations that resulted in the creation of the cavern.

The general rule of subsection (1) deals with two scenarios. First, in the case where there is a severed petroleum and natural gas estate, the section confirms that the owner of that estate also owns “the storage rights with respect to every underground formation within that land”. The *Act* defines storage rights as “the right to inject fluid mineral substances into a subsurface reservoir for the purpose of storage”. Second, the legislation provides that where title is split between a gas owner and a petroleum owner, the owners of the separate estates are to be treated as “co-owners of the storage rights with respect to every

¹⁴³ Acorn and Ekelund, *supra* note 19, at 361. This distinction must turn on the word “created”.

¹⁴⁴ Acorn and Ekelund, *ibid.* at 363.

underground formation within that land.” But what does that mean? In their discussion of the section Acorn and Ekelund¹⁴⁵ comment that the section:

... deliberately does not state the nature of the co-ownership as being joint or otherwise. In practical terms this means that a storage scheme cannot proceed in such a case unless both co-owners are parties to the contractual arrangements. It leaves the matter of compensation of each of them to negotiation.

This has the potential to create both uncertainty and holdout problems.

4.3 The Crown’s system for disposing of publicly owned natural gas storage rights

Alberta disposes of Crown owned resource rights, including storage rights, under the terms of the *Mines and Minerals Act*.¹⁴⁶ As noted above, s.57 establishes that ownership of natural gas storage rights follows the title to petroleum and natural gas rights. Thus, where the Crown owns the petroleum or natural gas rights (or the larger mines and minerals estate of which petroleum and natural gas might form a part), the Crown will also own the storage rights.

Subsection 57(5) provides that:

(5) Where the Crown in right of Alberta owns storage rights in respect of a subsurface reservoir, no person has, as against the Crown, any storage rights in respect of that reservoir except under

- (a) a unit agreement to which the Crown is a party,
- (b) a contract entered into under section 9(a), or

¹⁴⁵ Acorn and Ekelund, *ibid.* at 362 – 363. For a discussion (and criticism) of this interpretation, see Bankes, Poschwatta and Shier, *supra* note 4 at 607 – 608.

¹⁴⁶ R.S.A. 2000, c. M-15.

(c) an agreement issued with the authorization of the Lieutenant Governor in Council,

that expressly conveys storage rights in respect of that reservoir.

This subsection does two things. First, it confirms that the holder of a petroleum and natural gas licence or lease (or an earlier form of Crown tenure¹⁴⁷) does not obtain storage rights by virtue of the grant of exploration or production rights. Second, it outlines three different ways in which a party might obtain storage rights from the Crown under the terms of the *Act*. In each case the instrument must “expressly” convey storage rights with respect to that reservoir. We shall examine each of these modes of disposition. Acorn and Ekelund suggest that of these “the most common will be by way of a unit agreement to which the Crown is a party, as this has been the most common case in the past”.¹⁴⁸ Perhaps the biggest formal difference between these three modes of disposition is that while options 2 and 3 each contemplate the approval of the Lieutenant Governor in Council, the Minister alone is authorized to exercise a unit agreement.

4.3.1 A unit agreement to which the Crown is a party Unit agreement

The key provision of the *Act* dealing with unit operations for storage purposes is s.102 which provides as follows:

102(1) The Minister may on behalf of the Crown enter into an agreement providing for the combining of interests in a mineral occurring in a subsurface reservoir underlying one or more tracts to facilitate the co-ordinated management of operations for any one or more of the following:

....

¹⁴⁷ The holder of a pre-1994 tenure might, depending upon the terms of the grant and the language of the *Act* at the time of the grant, have an argument that storage rights were included; see Acorn and Ekelund, *supra* note 19 at 362.

¹⁴⁸ Acorn and Ekelund, *supra* note 19, at 363.

(b) the use of the subsurface reservoir for the purposes of storage of fluid mineral substances and the combining of interests in the storage rights in respect of that subsurface reservoir;

(c) the recovery of fluid mineral substances injected into or stored in the subsurface reservoir.

(3) Notwithstanding this Act or an agreement but subject to section 36(6), a unit agreement may provide

(c) for compensation for interests adversely affected,

(d) that any provision or condition of an agreement, whether statutory or otherwise, will be nullified, changed or varied to the extent necessary to give effect to the unit agreement,

(e) that so long as operations are conducted in accordance with the unit agreement the operational requirements with respect to each location insofar as they relate to the location or part of the location within the unit operation will be deemed to have been met,

(f) & (g) [omitted; these paragraphs deal with production scenarios]

Minerals subject to terms of agreement

104 (2) Where a unit agreement provides for the use of the subsurface reservoir for the purpose of storage of fluid mineral substances, storage rights that are the property of the Crown and affected by the unit agreement are subject to the terms and conditions of the unit agreement so long as the Crown is a party to the unit agreement.

To support an application to enter into a gas storage unit agreement, the Department has indicated that it will expect to see:¹⁴⁹

- geological mapping of the proposed storage reservoir (such as structure, net pay, hydrocarbon pore volume),
- structural or stratigraphic cross-sections to support this mapping,
- seismic mapping and sections (also in support of the geological mapping),
- copies of any [ERCB] applications and approvals for the storage operation,
- pressure surveys, material balance calculations, decline analysis, and any other reservoir information (in support of the reservoirs volume and aerial extent),
- an estimation of the reservoir's remaining recoverable marketable gas,
- historical production/injection information for the reservoir, and
- a written report that discusses the geological and engineering data.

The Department takes the view that it is the responsibility of the applicant to determine the appropriate geography of the application and states that it “does not have any regulated buffer zone protection or specific rules around migration of gas”.¹⁵⁰ The Department has developed a standard form gas storage unit agreement (GSUA).¹⁵¹

The premise of any unit agreement, whether designed to facilitate storage or production, is that the area subject to the agreement (a particular oil and gas pool) covers two or more “tracts” (separate titled areas within the pool) that are to be combined in order to facilitate coordinated operations. In the case of a producing pool, the main purpose of unitization is to avoid the consequences of the rule of capture. As a result of unitization, production

¹⁴⁹ Alberta Energy, Information Letter, IL 98-23, Commercial Gas Storage in Alberta, July 22, 1998 [Information Letter]. See also FAQs in relation to gas storage, online: <<http://www.energy.gov.ab.ca/Tenure/1093.asp>> [FAQs].

¹⁵⁰ FAQs, *ibid.*; noting as well that the Crown will only include lands in the GSUA that it believes will be used as part of the storage operation.

¹⁵¹ Online: <<http://www.energy.gov.ab.ca/Tenure/forms/unitgasAgreement.pdf>> [Standard form GSUA].

from anywhere in the pool will be shared amongst each of the tracts in accordance with the terms of a negotiated tract participation factor. It is equally the premise of any unit agreement that the various tracts might be under lease to various different parties (the working interest owners). Typically, such leases (whether Crown or freehold) will provide that they will be continued beyond a short primary term by operations or production on the leased lands.

Given these premises, a typical unitization agreement will attempt to provide, at a minimum, for the following: (1) that the various tracts should be operated as single titled unit, (2) that production (and operating costs) should be shared in accordance with an agreed formula, and (3) that any underlying leases will be amended to the extent necessary to give effect to the purposes of the unitization (this will mean, *inter alia*, that the royalty will be payable in accordance with a tract allocation factor and not actual production on the lands, and that the lease term will be extended by activities\production anywhere within the unit area.) In addition to the unitization agreement there will typically be a unit operating agreement which will prescribe how decisions will be made with respect to operations on the unitized lands—which after all are now to be operated as a single tract. Such an agreement will provide for the appointment of an operator and for decisions to be made—if necessary, by a majority of tract owners. The unit agreement will typically be executed by the working interest owners and the royalty\freehold owners and the operating agreement solely by working interest owners.

All of the above will apply to a gas storage unit agreement as well as a production agreement with some modifications. *First*, the working interest owners will need to be assured that each has the right to store as well as produce natural gas. Since such a right will not have been granted to a Crown lessee (s.57(5) *MMA supra* and discussion in part 4.3) and may not have been granted by a private lessor to a private lessee), the working interest owners will want the unitization agreement to be executed by their lessors (including the Crown) and will want that agreement to amend the underlying leases to provide this additional storage right. The Crown standard form agreement gives effect to

this through the definition sections of the agreement and a number of the operative clauses.

First, cl. 303 provides that unit operations will continue each and every lease.¹⁵² “Unit operations”¹⁵³ are defined to include injection and storage operations. Second, cl. 303 provides that leases are amended to the extent necessary to conform to the agreement. This must include any Crown agreements\leases. Third, and perhaps most crucially, cl. 401 provides the right to store (and this description of the right must be taken to be read in to existing Crown agreements):

401 Operations: The Royalty Owners hereby grant to the Working Interest Owner, insofar as they have the right to grant the same:

(a) the right to conduct Unit Operations [which includes storage, see above] in and in respect of the Unitized Zone without regard to the provisions of the Leases or the boundary lines of the Tracts in such manner and by such means and methods as they consider necessary and proper; and

(b) without limiting the generality of the foregoing, the right to convert and use as injection or storage wells, any wells now existing or hereafter drilled into the Unitized Zone.

402 Injection: Notwithstanding clause 401, no Unitized Substances, other than Gas that is deemed under clause 701(b) to comprise Storage Gas, shall be injected into the Unitized Zone for any purpose whatsoever.

¹⁵² Standard form GSUA, *ibid.*, Cl. 303: “Any Unit Operations shall, except for the purpose of calculating payments to Royalty Owners, be deemed conclusively to be operations upon the Unitized Zone in each Tract, and any such operations shall continue in full force and effect each Lease and any other agreement or instrument relating to the Unitized Zone or Unitized Substances as if such operations had been conducted on and a well was producing from each Tract or portion thereof, in the Unit Area.”

¹⁵³ Standard form GSUA, *ibid.*: “unit operations” means “any operations or activities undertaken in connection with the injection into or storage of Storage Gas in the Unitized Zone, the development or exploitation of the Unitized Zone, the production of Unitized Substances[including storage gas]”

Second, the working parties to the unitization agreement will want to be sure that they allocate responsibility for any royalty obligations in relation to native gas (i.e. the gas left in place that would otherwise be produced and which would therefore attract a royalty obligation) and yet at the same time provide a different basis for allocating rights in relation to injected (stored) gas. The standard form agreement accomplishes this objective by allocating liability for the native gas in accordance with a tract participation factor until that liability has been amortized in accordance with provincial policy:¹⁵⁴

The Gas Storage Unit Agreement provides for the payment of royalties on remaining recoverable marketable gas in the reservoir over a base amortization period. When the volume of gas has been determined, 80% of this amount - described by the heat content - will be amortized over a negotiated period. This amount will be indicated in the Gas Storage Unit Agreement, which provides the methodology for the payment of royalties.

Gas that is not royalty liable is treated as storage gas and storage gas “shall not be allocated among the Tracts, and no royalty shall be payable in respect thereof”.¹⁵⁵

The *third* and final part of the picture in the context of Crown tenure is the continuation of the underlying leases or licences. What is the duration of those leases or licences as amended by the unit agreement? The answer to this question is found in the Petroleum and Natural Gas Tenure Regulations.¹⁵⁶ These regulations provide that when a licence is at the end of its intermediate term, or a lease is at the end of its primary term, such an interest will be continued as to those parts of the location of the agreement that fall within certain prescribed categories. While these categories include producing spacing units and spacing units that, in the opinion of the Minister, are capable of production, the relevant sections also provide that an agreement (i.e. a lease or a licence) shall also be continued

¹⁵⁴ See Information letter, 98-23, *supra* note 149, and also the gas storage FAQs, *supra* note 149, and cl. 7 of the standard form GSUA, *supra* note 151.

¹⁵⁵ Standard form GSUA, *supra* note 151, cl. 702. “Storage Gas” is defined as “Gas with respect to which there is no royalty liability outstanding”.

¹⁵⁶ Alta. Reg. 263/97.

for those spacing units within the agreement that are included within a “gas storage agreement”.¹⁵⁷

Once continued under s.15, the leases continue indefinitely until the Minister gives notice under s.18 that the lands are no longer subject to the gas storage unit agreement.¹⁵⁸ This would apparently occur under the terms of the unit agreement itself which provides in cl. 1402 for automatic termination 90 days after all wells used for unit operations have been abandoned, plugged, or disposed of.¹⁵⁹ Since there is no production royalty payable for the use of storage (beyond that provided for and paid in relation to native gas (see above)) the only charge that a lessee pays to the Crown is the rental charge payable under the terms of the Mines and Minerals Administration Regulation.¹⁶⁰ Section 20 is the generic section dealing with rentals for “agreements” and provides as follows:

(3) Except in the case of an agreement referred to in section 57(5)(c) [this refers to agreements issued with the authorization of the LG in C] of the Act, a rental for a year of the term of an agreement is payable at the rate of \$3.50 per year for each hectare in the area of the location of the agreement, subject to a minimum of \$50 per year.

4.3.2 A section 9(a) contract

Section 9(a) provides the Minister with an extraordinary power to enter into contracts for certain prescribed purposes with the approval of the LGiC. One of those prescribed purposes is storage:

¹⁵⁷The Regulations, *ibid.*, define a gas storage agreement by reference to the three categories of storage dispositions listed in s.57 of the *Act*. The main continuation section is s.15 and the relevant clause within that is s.15(1)(d) which provides that the Minister must continue any part of the location of the agreement that includes “a spacing unit all or part of which is within the area of a gas storage agreement to which the lease is subject”. Continuation is down to the deepest zone subject to the storage agreement (s.15(2)(d)).

¹⁵⁸ See in particular s.18(1)(d), triggering a one year notice period within which the lessee may re-apply for continuation for some or all of the lands under s.15.

¹⁵⁹ The position is somewhat different in relation to a unit agreement for production purposes, since s.24 of the regulations provides a further notice mechanism by which the Minister may give notice to withdraw from a unit agreement. It would appear that this provision does not apply to gas storage agreements for a couple of reasons: (1) the regulations distinguish between unit agreements and gas storage agreements, and, (2) s.24 uses the language producing, developing or exploiting the petroleum or natural gas which seems inapposite to describe a storage activity.

¹⁶⁰ Alta. Reg. 262/97.

Notwithstanding anything in this Act or any regulation or agreement, the Minister, on behalf of the Crown in right of Alberta and with the authorization of the Lieutenant Governor in Council, may

- (a) enter into a contract with any person or the government of Canada or of a province or territory respecting
- (iii) the storage of substances in subsurface reservoirs;

Unlike the situation of a unitization agreement, it is not necessary that the operating parties to the agreement have a pre-existing tenure that is being amended or continued by virtue of the agreement.¹⁶¹ It is not clear to us how frequently the Crown uses this mode of disposition of storage rights. Winter suggests that this section was the authority for the 1992 Suffield Storage Agreement with AEC, although this particular agreement has since been superseded by a gas storage unit agreement. Acorn and Ekelund suggest that these special Crown agreements are likely to be rare.¹⁶²

4.3.3 A Crown agreement authorized by the Lieutenant Governor in Council

The distinction between the category of Crown agreement authorization and the Crown contract authorization just discussed is perhaps subtle but it turns on an appreciation that while the term “contract” is a general term, the term “agreement” is a defined term in the *Act* and means “an instrument issued pursuant to this Act or the former Act that grants rights in respect of a mineral, but does not include a unit agreement or a contract under section 9(a)”. Thus, as Acorn and Ekelund point out, this section was added “to legitimize some existing Crown leases which contained express provisions for storage rights and which were commonly referred to as ‘storage leases’”.¹⁶³ Now, s.102 of the *MMA* clarifies that unitization agreements may be used for this purpose, and there is little need to resort to this form of Crown contract.

¹⁶¹ Winter, *supra*, note 18 at 122, discussing the Suffield Block Agreement (1992) with AEC and noting that all matters particular to the Agreement and particular to each of the Crown leases were kept separate and independent.

¹⁶² Acorn and Ekelund, *supra* note 19 at 363.

¹⁶³ Acorn and Ekelund, *ibid.*

4.4 The regulatory approach to the approval of natural gas storage projects

Approval for the technical aspects of a storage operation in Alberta is the responsibility of the Energy Resources Conservation Board (ERCB)¹⁶⁴ under the terms of the *Oil and Gas Conservation Act (OGCA)*.¹⁶⁵ The well licensing provisions of the *OGCA* provide (s.11) that no person shall drill a well without a licence, while s.16 provides that no person shall apply for or hold a licence unless that party is authorized to drill a well for the authorized purpose. The *OGCA* defines the term well as including a well that is completed or being drilled for injection to an underground formation. In addition, s.39, the “scheme approval” provision of the *Act*, stipulates, *inter alia*, that no party may proceed with a scheme for the “processing or underground storage of gas” without scheme approval on such terms and conditions as the Board may prescribe.

The regulations and the relevant ERCB directives provide additional requirements. Thus, s.14.200 requires the continuous measuring of all injected substances while s.15.060 directs an applicant for a scheme approval for a storage operation to comply with the relevant provisions of Directive 65 which is Unit 4.3.¹⁶⁶ The Directive identifies five issues that it will consider as part of its examination of a scheme proposal: (1) conservation; (2) storage capacity and deliverability; (3) equity; (4) environment and safety; and (5) monitoring.

Under the heading of “conservation” the Board emphasises that it is concerned with possible “reserve losses” that may occur through gas storage as a result of “reservoir containment of the gas, gas trapping by water, excessive water production, and the dilution of produced gas by acid gas”.¹⁶⁷ Under the heading of “storage capacity and deliverability” the Board indicates that it needs to know the details of original gas in

¹⁶⁴ ERCB, online: <<http://www.ercb.ca/>>.

¹⁶⁵ R.S.A. 2000, c. O-6.

¹⁶⁶ Board Directive 65, *supra* note 24.

¹⁶⁷ Board Directive 65, *ibid.* at s. 4.3.3.

place as well as estimated storage capacity and maximum deliverability.¹⁶⁸ The Board notes that “equity is an important issue for gas storage pools, since competitive gas production would be detrimental to storage scheme operations.”¹⁶⁹ The Board advises that the applicant should “own all of the mineral right leases in the pool and adjoining sections or at least have a production-sharing agreement and written consent from the other owners that could be impacted.”¹⁷⁰ An applicant must notify all well licensees in the pool as well as “all lessees and lessors within the area of the storage pool and adjoining offsetting sections. Notification must cover all zones, including those that either underlie or overlie the storage pool.”¹⁷¹ The Board will expect to be advised of any objections and if these cannot be resolved may send the matter to a hearing. Under the heading of “environment and safety” the Board is principally concerned to ensure that the integrity of the wellbore will prevent contamination of other zones and to protect all groundwaters; as such, applicants must comply with Directive 51 on injection and disposal wells.¹⁷² And finally, with respect to monitoring, the Board wishes to be assured that “the scheme will be operated within the conditions of the approval.”¹⁷³

Board approvals for storage applications are typically made on the basis of written materials filed by the applicant, and the subsequent approvals are relatively short.¹⁷⁴ The decisions will, *inter alia*: (1) approve the scheme, (2) identify the injection wells, (3) limit the volume of gas injected based upon reservoir pressure, and (4) require annual reports (e.g. monthly, annual, and cumulative reports of gas volumes injected, and a plot of reservoir pressures and composition of injected gas). The licensee is also expected to discuss any anomalous behaviour of the reservoir on an annual basis and “immediately report ... any detrimental effects that may be attributable to the operation of the storage scheme”.¹⁷⁵

¹⁶⁸ Board Directive 65, *ibid.* at 4-19.

¹⁶⁹ Board Directive 65, *ibid.* at 4-20.

¹⁷⁰ Board Directive 65, *ibid.*

¹⁷¹ Board Directive 65, *ibid.*

¹⁷² Board Directive 65, *ibid.* at 4-21. Directive 51 deals with Injection and Disposal Wells, online: <<http://www.ercb.ca/docs/documents/directives/Directive051.pdf>>, last revised, March 1994.

¹⁷³ Board Directive 65, *ibid.* at 4-22.

¹⁷⁴ See, for example, Gas Storage Approval No. 11371, October 26, 2009, Paramount Energy Operating Corporation, Warwick Upper Manville K Pool.

¹⁷⁵ *Ibid.*

4.5 Treatment of holdout issues in Alberta

As noted above, storage rights in Alberta may be owned by the Crown or by private parties. This may give rise to holdout problems in the event that a private owner refuses to contribute storage rights to a storage operation. In addition, a storage operator may require access to the surface for its injection and production activities. How have these issues been dealt with in Alberta?

In relation to surface access issues we think that the position is clear. The operator of an injection well will be able to use the surface rights provisions of the *Surface Rights Act*¹⁷⁶ in order to drill and operate such a well and to maintain any necessary and associated equipment on the surface.¹⁷⁷ This will suffice to deal with any surface owner holdout provisions.¹⁷⁸

The position is also clear in relation to the subsurface storage holdout issues, but here the position is quite the reverse, i.e. the provincial legislation does *not* provide any mechanism for dealing with these holdout issues. It seems possible that some consideration was given to addressing this problem when the gas storage amendments were made to the *MMA* in 1994 but Acorn and Ekelund (both intimately involved in the process) comment as follows:¹⁷⁹

¹⁷⁶ R.S.A. 2000, c. S-24.

¹⁷⁷ For a more detailed argument on this point, see Bankes, Poschwatta and Shier, *supra* note 4, and Bankes, *Legal Issues Associated with the Adoption of Commercial Scale CCS Projects*, 2008 at 19, online: <http://www.law.ucalgary.ca/system/files/ccs-discuss-legal_1.pdf>.

¹⁷⁸ Furthermore, the 1994 amendments to the *MMA* also dealt with the need for storage operators to drill through mineral rights in order to exploit the storage asset. Thus s.57(2) provides as follows: “Any person who has storage rights in respect of a subsurface reservoir may work through any mineral in the same tract to which the storage rights relate to the extent necessary to exercise those storage rights, without permission from or compensation to any other person for the right to work through that mineral, subject, however, to this Act and the provisions of any other Act affecting the exercise of that right.” (emphasis supplied) and discussed in both Acorn and Ekelund, *supra* note 19, and more extensively in McKinnon, *supra* note 22.

¹⁷⁹ Acorn and Ekelund, *supra* note 19 at 362 – 363. In this paragraph the authors are dealing with both the tract owner who will not participate as well as the owner of one substance (petroleum or natural gas) who will not participate.

[The section] leaves the matter of compensation ... to negotiation. [The section] does not go the whole way, that is, to provide for procedures similar to those for compulsory unitization by which recalcitrant title owners can be forced into participation in a storage scheme. If a storage scheme is to be conducted under a unit agreement, all title owners will have to be parties; there can be no “windows” in the unit area where a unit operation is converted to a storage scheme.

It bears emphasizing that apart from the Turner Valley Field,¹⁸⁰ Alberta has yet to proclaim compulsory unitization legislation although the concept is well understood and broadly adopted in most North American oil and gas jurisdictions.

Thus there is nothing in either the *MMA* or in the *Oil and Gas Conservation Act* that would allow an operator to coerce an owner into a storage operation. An operator could not make use of the compulsory pooling provisions of the *OGCA* or the so-called common orders (each of which allows some coercive power to compel access or participation) because they simply do not address the question of access to pore space for storage purposes. The ERCB addresses the issue in the “equity” section of Unit 4.3 of Guide 65 where it comments, or perhaps more pertinently, warns, as follows:¹⁸¹

Equity is an important issue for gas storage pools, since competitive gas production would be detrimental to storage scheme operations. Therefore, it is advisable that you own all of the mineral right leases in the pool and adjoining sections or at least have a production-sharing agreement and written consent from the other owners that could be impacted. It is also strongly advised that if some land is still available for sale, you purchase this land before considering the pool for storage. The lessors must also

¹⁸⁰ *Turner Valley Unit Operations Act*, R.S.A. 2000, c. T-9; this *Act* deals with unitization for production purposes and not unitization for storage purposes.

¹⁸¹ Board Directive 65, *supra* note 24 at 4.20. The Board also comments that: “It is important to understand the risk involved with a competing company buying mineral rights and drilling a productive well.”

provide consent for storage, since a special royalty agreement covering the remaining producible gas reserves may be required.

4.6 Conclusions in relation to Alberta

The legislation provides that gas storage rights in Alberta follow the ownership of petroleum and natural gas rights. They are not vested in the surface owner and they are only vested in the Crown to the extent that the Crown owns petroleum and natural gas rights.

The Crown disposes of storage rights that it owns under the terms of the *Mines and Minerals Act*. While the *Act* provides the Crown with the flexibility to negotiate special gas storage agreements, its standard model is based on a unitization agreement, the premise of which is that the operator of the proposed storage project already has an existing oil and gas production tenure which the operator proposes to extend (both in terms of duration and the rights conveyed) by entering into a gas storage unitization agreement.

The technical aspects of gas storage projects in Alberta are regulated by the ERCB. The *Surface Rights Act* deals with any potential holdouts at the surface rights level but the provincial legislation does not provide any mechanism to deal with the recalcitrant owner of storage rights who refuses to participate either at all, or at least not on the terms offered.

5.0 SASKATCHEWAN

5.1 Introduction

Saskatchewan has a significant number of natural gas storage facilities, mostly comprising facilities operated by TransGas.¹⁸² In addition, Husky operates the East Cantuar facility with a capacity of 5bcf.¹⁸³ TAQA also has a facility at East Cantuar (7bcf).¹⁸⁴ In common with the other prairie provinces, mineral rights in Saskatchewan may be owned by the Crown or by private parties. There are no statutory provisions in Saskatchewan vesting storage rights in the Crown or confirming that storage rights are owned by the mineral owners.¹⁸⁵

5.2 Disposition of Crown Storage Rights

Saskatchewan deals with the disposition of Crown owned storage rights through a 1992 amendment to the *Crown Minerals Act*¹⁸⁶ which provides for “leases of spaces”. The *Crown Minerals Act* only applies to Crown minerals and Crown mineral lands; it does not apply to privately owned minerals. The definition section of the *Crown Minerals Act* defines spaces as “the spaces occupied or formerly occupied by a Crown mineral”. The section goes on to provide that:

¹⁸² In *Anderson v. Transgas Ltd.* 2005 SKQB 192, 139 A.C.W.S. (3rd) 560 the court noted that Transgas at that time had 22 operational facilities in Saskatchewan. TransGas is a wholly owned subsidiary of SaskEnergy. It has the exclusive monopoly on intra-provincial natural gas transmission. Online: <<http://www.transgas.com/>>. In the *Anderson* case the plaintiff sought an interlocutory injunction to enjoin the development of the proposed Asquith salt cavern project. The plaintiff argued that use of non-potable water pumped from an adjacent aquifer would have a detrimental effect on its own water wells principally by lowering the water table. The court ultimately rejected the application ruling that the plaintiffs had not shown irreparable harm since Transgas was bound to supply them with water by the conditions of its groundwater licence and that the balance of convenience favoured Transgas, principally because it had already contract to supply storage to third parties.

¹⁸³ See “Husky Energy: Natural Gas Marketing”, online: <http://www.huskyenergy.com/downloads/AboutHusky/Publications/NG_Marketing.pdf>.

¹⁸⁴ See TAQA website, online: <<http://www.taqa.ae/en/index.html>>; TAQA is the Abu Dhabi National Oil Company.

¹⁸⁵ Concurring with this, see successive editions of Ballem, *supra* note 17, noting that while Saskatchewan has brought underground storage projects under regulatory control it has not “legislated on private rights” 3rd ed at 123, n. 48 and 4th ed at 145.

¹⁸⁶ R.S.S., 1978, c. 50.2 [CMA]. The amending Act was the *Crown Minerals Amendment Act*, 1992 c.25, at s.272.

(2) Notwithstanding the terms or conditions of any Crown lease, all spaces are the property of the Crown and remain the property of the Crown whether or not a Crown lease is issued for the Crown mineral within the space and whether or not the Crown mineral is produced, recovered or extracted from the space.

The tenor of this seems to be that an ordinary lessee of Crown minerals will not acquire space rights. Space rights may however be acquired (subs.(3)) under this section by means of an agreement to lease spaces entered into by the Minister on behalf of the Crown, and such agreements (subs(4)) “may be for any period and contain any terms and conditions that the minister considers appropriate”. Finally, the section ratified and confirmed any agreements to lease spaces entered into “before, on or after” the section came into force.¹⁸⁷

In the context of CCS projects it is significant to note that the term “space” is not functionally limited. Thus, a lease of space could be used for disposal or storage subject to any terms and conditions imposed by the Minister.

Neither the *Act* nor the regulations further describe the process by which the Crown will dispose of leases of space rights (other than that the Minister may do so) and it seems likely, given the breadth of discretion accorded to the Minister, that this is quite deliberate and that the other more general provisions of the *Act* dealing with Crown dispositions are not intended to apply.¹⁸⁸ However, the point might be usefully clarified.

¹⁸⁷ *CMA*, *ibid.*, s.27.2(5). It is not clear why it was necessary to ratify future agreements or if such a prospective confirmation could be of any legal effect whatsoever. The short, three section, Lease of Spaces Regulations, R.R.S. c. C-50.2 Reg. 7 (1995) simply fix the rental rate for storage (\$3.50 per hectare based on surface area rather than volume of pore space).

¹⁸⁸ The term Crown disposition means rights granted by the Crown under a lease or other instrument, granting exploration or prospecting rights “or any other right or interest in any Crown mineral or any Crown mineral lands”. The latter part of this definition would seem to embrace the lease of a space right. Section 4 *et seq* of the *Act* prescribe general rules for Crown dispositions but in many cases (eg s.4) “subject to the provisions of the Act”.

5.3 Regulation of storage projects

On the regulatory side of things, the Ministry of Energy and Resources takes the view that a natural gas storage project should be approved under the terms of the *Oil and Gas Conservation Act*.¹⁸⁹ A guideline¹⁹⁰ issued by the Department makes it clear that applications are to be dealt with under s.17 of the *Act* which provides that:

17.1(1) Notwithstanding anything in this Act or the regulations, the minister may make orders approving plans for:

(a) increasing or improving oil or gas recovery or operations, including, without limiting the generality of the foregoing, plans for:

(i) drilling, producing from and operating horizontal wells;

(ii) water flooding;

(iii) pressure maintenance;

(iv) steam injection;

(v) in situ combustion;

(vi) introducing any substance into the producing formation;

(b) disposing of oil-and-gas wastes or non-oil-and-gas wastes in subsurface formations.

This practice is hardly completely satisfactory since paragraph (a) deals with enhanced recovery rather than storage, and paragraph (b) deals with disposal of wastes rather than storage of a valuable product. Thus while the disposal clause is certainly enough to accommodate CCS operations it would not cover gas storage. The Oil and Gas Conservation Regulations do not further address the issue of gas storage applications and

¹⁸⁹ R.S.S. 1978, c.O-2. Note that other regulatory approvals will be required depending on the nature of the project. See for example the discussion in *Anderson, supra* note 182 emphasising that a cavern storage project will require a water licence for the water to be used to dissolve the salt in place in order to create the storage facility.

¹⁹⁰ Ministry of Energy and Resources, PNG Guideline 20, Application for a Gas Storage Project, April 2003, online: <http://www.er.gov.sk.ca/adx/asp/adxGetMedia.aspx?DocID=3623,3620,3384,5460,2936,Documents&MediaID=24873&Filename=PNG+Guideline+20+-+Application+for+a+Gas+Storage+Project.pdf>.

approvals.¹⁹¹

The guidelines deal with some of the technical, safety and economic aspects of an application but they also provide that:

The application shall be accompanied by the written consent of all owners and all fee simple mineral owners, other than the Crown, (ie. freehold owners) that may be reasonably adversely affected by the proposal.

This clause seems to lump together different categories of owners as if they each had the same type of interest (i.e. “adverse effects”). But there are surely different categories of interests. The categories might include: private mineral owners whose pore space might be used by the project; surface owners (who might be further subdivided into surface owners whose lands might be used for injection facilities and others who might simply be concerned about the project); and then private mineral owners who might be adjacent to the project boundaries who might be concerned about the potential sterilizing effect of the project. In relation to the first category one would expect the consent to take the form of a storage lease agreement or similar.

5.4 Holdout issues in relation to storage projects in Saskatchewan

The consent requirement also begs the question as to what happens in the event that consent is not forthcoming from an owner falling into one or more of the categories listed above. The guideline does not offer any guidance, and neither does the *Oil and Gas Conservation Act*. Section 17 simply provides that orders issued under the *Act* may be subject to any terms and conditions that the minister considers advisable.

As best as we can determine, the Saskatchewan legislation does not provide a mechanism for dealing with any of the categories of potential holdout problems, and any attempt to make other provisions in the legislation do this work (e.g. pooling and unitization

¹⁹¹ Oil and Gas Conservation Regulations, 1985, c.O-2, Reg. 1.

provisions) will not succeed.

In common with the other prairies provinces, Saskatchewan has surface rights legislation (*Surface Rights Acquisition and Compensation Act*¹⁹²) which provides in general terms that no person can enter on lands for the purpose of drilling a well for mineral exploration purposes without a separate consent of the owner (s.6) (i.e. separate from the grant of any mineral rights), or an order of the Board of Arbitration established by the *Act* (ss.23 – 26). It is clear that the Board has the jurisdiction to make such an order for a well for exploration, production, or recovery purposes (including injection for EOR purposes), but it is less clear that the Board has the jurisdiction to make an order with respect to a well that is to be drilled for gas storage purposes, and certainly not for permanent disposal purposes.

We think that these conclusions follow from a series of definitions contained in the *Act*. First, the applicant for a surface rights entry order will be an “operator”. The *Act* defines an operator as follows:

a person, company, syndicate or partnership or the agent of any of them
that has the right to a mineral or the right to drill for or produce or recover
a mineral ... [emphasis supplied].

It is possible that the rights of production and recovery include production from gas storage, but it is hard to see this extending to a well that is solely used for injection purposes (except for enhanced recovery, see below) or for disposal purposes.

Second, the operator will be applying for surface rights. “Surface rights” are defined as:

(i) the land or any portion thereof or any interest therein, except mineral commodities within the meaning of *The Land Titles Act, 2000*, or a right of entry thereon, required by an operator for the purpose of drilling for,

¹⁹² R.S.S. 1978, c. S-65.

producing or recovering a mineral;

(i.1) the right to establish, install or operate any machinery, equipment or apparatus that is specified in the regulations for use exclusively for or in connection with the drilling, completion or producing operations of a well on a well site;

(ii) the right to condition, maintain, reclaim or restore the surface of land where the land has been or is being held incidental to or in connection with either or both of:

(A) the drilling for, producing or recovering a mineral;

(B) the laying, constructing, operating, maintaining or servicing a flow line, service line or power line ... [emphasis supplied].

These rights are similarly framed in terms of production and recovery. And finally, the *Act* defines a “well” as:

any opening in the ground, except seismic shot holes or structure test holes, made or being made by drilling, boring or in any other manner through which a mineral is obtained or is obtainable, or for the purpose of obtaining a mineral, or for the injection of any fluid in an underground reservoir for the purpose of obtaining a mineral

This definition explicitly contemplates a well that is used for injection purposes (for fluids), but only injection (as in an EOR operation) “for the purpose of obtaining a mineral”. In sum, it is difficult to read these provisions as extending the benefit of the right of entry order to the situation of natural gas storage; and impossible to read them as dealing with a pure disposal operation such as a CCS operation.

The situation is similar when we consider the situation of the owner of private storage rights who refuses to contribute these rights to the operation. The Crown disposition legislation does not deal with this situation since it applies only to Crown owned minerals. The oil and gas conservation legislation lacks the concept of a designated gas

storage area (and associated expropriation or vesting powers as are found, respectively, in Ontario and British Columbia). Furthermore, the compulsory unitization powers in Part V of the *Oil and Gas Conservation Act* are directed at production operations rather than storage operations.¹⁹³

5.5 Conclusions in relation to Saskatchewan

Saskatchewan hosts both salt cavern and depleted aquifer natural gas storage projects. Natural gas storage rights in the province may be owned privately or publicly. Publicly owned storage rights are disposed of by agreement under the terms of the *Crown Minerals Act*. Regulatory approval of storage projects is dealt with under s.17 of the *Oil and Gas Conservation Act* although that section fails to deal explicitly with the idea of storage. The legislation does not provide a clear framework for dealing with holdout problems, either with respect to surface owners or with respect to private pore space owners.

¹⁹³ An application for compulsory unitization under s.34 of the *OGCA* is to be made in respect of an entire field or pool or a portion of a field or pool. A field is “the general area underlaid by one or more pools” while a pool is (principally) a reservoir that “contains or appears to contain an accumulation of oil or gas”. Section 39 contemplates that operations in the unit area will be for “drilling for or producing oil and gas” and s.42 deals with the allocation of production. In sum, the unitization scheme seems to be directed at producing operations rather than storage operations.

6.0 MANITOBA

6.1 Introduction

Currently there are no natural gas storage facilities operating in Manitoba. Manitoba Hydro\Centra Gas (the principal gas utility in the province) does access gas storage in the United States and it has in the past explored the feasibility of developing salt cavern storage in the western part of the province.¹⁹⁴

Development of natural gas storage in the province would be governed by the terms of the *Oil and Gas Act*¹⁹⁵, at least if the project involved a depleted oil and gas reservoir. The position is perhaps less clear with respect to salt cavern storage although it seems likely that the relevant provisions of the *Oil and Gas Act* would not apply to this sort of storage development. The legislation lacks a clear Crown vesting provision or any provisions clarifying the rights of private owners, but it seems likely that the starting position is the same in Manitoba as in the other western provinces—i.e. that storage rights are not *prima facie* all vested in the Crown but may be owned by the Crown or private parties depending (most likely) on who owns the mineral rights.

Manitoba's *Oil and Gas Act* is both an oil and gas conservation regulatory statute and a Crown disposition statute. Hence it applies to:¹⁹⁶

- (a) Crown oil and gas rights and the rights to helium or oil shale owned by the Crown;
- (b) the exploration for oil, gas, helium or oil shale;

¹⁹⁴ Centra accesses the storage by allowing others to access its downstream stored gas in return for taking additional volumes from the TransCanada system as it passes through the province. Some of the background is discussed in Centra's rate filings before Manitoba's Public Utilities Board. See for example, ICF International, *Assessment of Natural Gas Commodity Options for Centra Gas Manitoba*, February 2009 at 33 – 35.

¹⁹⁵ C.C.S.M. c.O34 [OGA].

¹⁹⁶ OGA, *ibid.*, s.3, entitled "Application of Act".

- (c) the drilling of wells, and the operation and abandonment of wells, oil and gas facilities and storage reservoirs; and
- (d) oil and gas primary production [emphasis supplied].

Paragraph (a) clearly deals with Crown dispositions but does not refer specifically to storage; the three remaining paragraphs all deal with different aspects of the *regulation* of oil and gas developments, but note that paragraph (c), dealing with wells, specifically refers to storage reservoirs. While the subsequent provisions of the statute clearly provide a *regulatory* regime for storage operations it is less clear that they also deal with the ownership question.

6.2 The disposition of Crown owned storage rights

Part 4 of the Act deals with Crown dispositions. However, consistently with s.3 of the Act on “application” (quoted above), this Part is exclusively concerned with the disposition of oil and gas rights. The Act (s.1(1)) defines “oil and gas rights” as rights to search for and produce oil and gas found in or under the land, and “Crown oil and gas rights” are defined as such rights held by the Crown. No doubt such rights include the right to inject substances as part of an approved enhanced recovery operation, but they do not, on the face of it, include the right to use Crown pore space for storage purposes.

Further inquiry into other defined terms does not help. Thus, the term “disposition” is defined as a lease or exploration reservation in respect of Crown oil and gas rights. Similarly, the definitions of oil and gas refer to the substances themselves and do not deal with storage. All of this suggests that while the *Act* certainly provides for drilling wells for storage purposes and with the regulation of the development of storage reservoirs, the disposition provisions of the *Act* likely do not deal with Crown owned storage rights since such rights fall outside the definition of Crown oil and natural gas rights.¹⁹⁷ This

¹⁹⁷ Section 217 of the *Act* does allow the LGIC to make regulations “enlarging or restricting the meaning of a word or expression used in this Act”; this may not apply to a defined term.

conclusion is confirmed when one looks at the two main forms of tenure, the exploration reservation and the lease.

Thus, consistently with the above definitions, s.41 of the *Act* provides that the holder of an exploration reservation has the exclusive right to drill for oil and gas and to test a well to determine whether the well is capable of producing oil and gas. Section 49 in turn provides that the holder of a lease has the exclusive right to drill for oil and gas within the lease area and to remove and dispose of any oil and gas produced from the lease area. Section 67 provides for special agreements in relation to Crown owned helium and oil shale rights, but there is no similar section dealing with Crown owned storage rights.

6.3 The regulation of storage projects

The *Act* is much clearer when it comes to the *regulation* of natural gas storage projects. Section 2(1) indicates that the objects and purposes of the *Act* include “(e) to provide for the safe and efficient development and operation of storage reservoirs”. A storage reservoir is “a reservoir that is developed and operated for the storage of hydrocarbons” and a reservoir is “a subsurface area that contains or might contain oil, gas or helium, or that is or might be suitable for the underground storage of hydrocarbons and excludes underground tanks” (emphasis supplied).

The *Act* regulates the drilling of wells. Thus no person may drill a well without a licence (s.89(1)). A well includes a well that is to be drilled for a number of purposes including:¹⁹⁸

- i) exploring for oil, gas, oil shale, salt, potash or helium,
- (ii) obtaining water for injection into a pool,

¹⁹⁸ Thus a well may be drilled for disposal purposes but only for substances produced in association with oil and gas activities. This would not include an industrial waste stream of CO₂ or any other product (at least if injected for disposal purposes rather than enhanced recovery purposes).

- (iii) disposing of salt water and other substances produced in association with oil, gas, salt or helium,
- (iv) injecting water or any other substance to enhance the recovery of oil and gas, or
- (v) the development and operation of a storage reservoir ... [emphasis supplied].

The Director shall not issue a licence unless satisfied that the applicant has the necessary surface rights and unless satisfied, in the case of a well to be drilled for other than oil and gas recovery purposes, that that the applicant has, or is the authorized representative of a person who has, the rights required for the purpose for which the proposed well is to be used (s.91(4)). The clear implication is that an applicant for a well to be drilled for storage and related injection purposes must have acquired those rights, whether from the Crown or from a private owner.

Part 13 of the *Act* is devoted to the approval of storage projects. The *Act* provides for the designation of storage areas and for the issuance of storage permits. It is the storage permit that appears to be the most important instrument since a designated storage area refers to an area of land designated under a permit. No person may develop a storage reservoir without a permit (s.160(1)). A permit (s.160(2)) “conveys the exclusive right to develop and operate a storage reservoir within the designated storage area”. The *Act* contemplates that a person may make an application for a storage permit in accordance with the regulations, but no such regulations appear to have been passed.¹⁹⁹

The Minister may only grant an application for a permit (s.162) having taken account of any representations and recommendations made by others, if satisfied that the application

¹⁹⁹ The Crown Disposition Regulation, Man. Reg. 108/94, only deals with leases and exploration reservations for Crown oil and gas rights. It does not deal with storage permits. Similarly, the Drilling and Production Regulation, Man. Reg. 111/94, deals with, for example, EOR applications, but is silent with respect to storage.

is consistent with the principles of sustainable development (defined or referred to in s.2(2) of the *Act*²⁰⁰), and subject to the approval of the Lieutenant Governor in Council.

This part of the *Act* also has a group of sections dealing with compensation (ss. 165 and 166). Thus s.165 provides that no person may undertake a subsurface operation within a designated storage area without the approval of the Minister. This section serves as a preface to s.166 which provides that the holder of a storage permit shall make just and equitable compensation to the owner of oil and gas or minerals where such person suffers an adverse effect on access to or recovery of oil or gas or minerals as a result of the development or operation of a storage reservoir. Where the parties cannot agree on the amount of compensation the Minister may, on application, determine the amount of compensation by order.²⁰¹

In our view these provisions deal with the situation of resource sterilization. They are not designed to compensate the owner of the storage rights themselves; the premise of the section must be that such rights have already been acquired by the permittee. Indeed, but for acquiring such rights, the permittee would not have been entitled to a well licence for storage purposes.

In sum, Part 13 of the *Act* is best read as a scheme for the regulatory approval of gas storage projects which also provides a mechanism to compensate other resource owners in the event of resource sterilization. We do not think that the provisions of this Part accomplish a Crown vesting as contemplated in British Columbia's storage legislation. The only section which seems to go beyond this is s.160(2) describing the effect of a storage permit as conveying "the exclusive right to develop and operate a storage reservoir within the designated storage area". The language of "conveyance" and "exclusive right" is the language of property and not the language of regulatory approval. But the section leaves unanswered the question of how the government can grant a property right to somebody else's property without first acquiring that title by a Crown

²⁰⁰ This subsection includes many references to oil and gas development but no specific reference to storage.

²⁰¹ Where the Crown is the owner of the oil gas or minerals.

vesting or expropriation. The permit can certainly confer exclusive rights in relation to Crown owned storage (although this would be an odd way to do it), and it can provide a regulatory approval in relation to privately owned storage interests, but it is extremely unlikely that such a permit would be opposable against a competing property claim by a private owner of storage.

Quite apart from regulation under the *Oil and Gas Act* it appears that the development and operation of storage reservoirs is also subject to regulation under the *Public Utilities Board Act*. Section 161 of the *Oil and Gas Act* signals this and the idea is further developed in part III of the *Public Utilities Board Act*.²⁰² The purpose of this seems to be to provide that the owner of gas storage in the province shall be subject to full cost of service regulation even if that person is not the owner of a public utility. Thus s.127 of the Act provides that:

The Board shall determine, from time to time, rates, tolls or other charges to be charged by a public utility or any person for selling, delivering, distributing, storing or transmitting gas within the Province, and in connection therewith shall determine, inter alia, the rate base and the rate of return on shareholder equity [emphasis supplied].

6.4 Treatment of holdout issues

Given our interpretation of Part 14 of the *Oil and Gas Act* which is to the effect that: (1) storage rights may be owned by the Crown or by private parties in Manitoba, and that; (2) Part 14 should be read as a regulatory approval system and not as a set of provisions designed to deal with ownership, it follows that we still need to address the question of how Manitoba would deal with the potential holdout problem, i.e. the situation where a private owner refuses to provide necessary surface rights or where the private owner of pore space refuses to consent to a proposed storage operation and refuses to enter into a storage lease or other similar arrangement.

²⁰² C.C.S.M. c. P280.

First, with respect to a matter of surface rights, the position in Manitoba seems to be much the same as in Saskatchewan, i.e. there is surface rights legislation²⁰³ which both affirms the ownership interest of the surface owner²⁰⁴ and provides a mechanism (the right of entry order and duty to compensate) for dealing with the holdout problem. However, the legislation does not deal explicitly with cases of storage and disposal and the definitions of “operator”²⁰⁵ and “surface rights” seem to be similarly unhelpful insofar as they are concerned with exploration and drilling operations. Thus, while such definitions might extend as far as wells drilled and operated for EOR purposes, it is harder to read them as addressing storage or disposal projects. Somewhat more to the point is the definition of “well”. The *Surface Rights Act* simply incorporates the definition from the *Oil and Gas Act* where the term is defined, consistent with the objectives of that *Act* as including a well that is drilled for the “development and operation of a storage reservoir”. When read in conjunction with the latter part of the definition of “operator” as “a person who has the right to conduct any operation for the purpose of exploring for a mineral, or for drilling a well for the production of a mineral, and includes any person who has the control and management of a well” this likely suffices to afford a storage operator the opportunity to use the right of entry order provisions of the Act.

With respect to the private owner of pore space who declines to participate, it seems fair to conclude that this matter has not been addressed by the *Oil and Gas Act*. As noted above, we do not think that Part 13 of the *Act* deals with this issue and neither do we think that Parts 10 and 11 dealing with pooling and unitization can be made to address the issue. Part 11 of the *Act* allows the Minister to order unitization with respect to multiple spacing units, but can only do so if the Minister is satisfied that a unit operation:²⁰⁶

²⁰³ *Surface Rights Act*, C.C.S.M. c. S235 [SRA].

²⁰⁴ *SRA*, *ibid.*, s.16(1): no entry by an operator without a surface lease or a board authorized right of entry order.

²⁰⁵ *SRA*, *ibid.*, s.1: “operator” means a person who has the right to conduct any operation for the purpose of exploring for a mineral, or for drilling a well for the production of a mineral, and includes any person who has the control and management of a well.

²⁰⁶ *OGA*, *supra* note 195, s.135.

- (a) will result in more efficient production of oil and gas; or
- (b) is necessary or advisable to prevent waste or to protect correlative rights.

Neither condition is relevant for a storage or disposal operation. The authority to grant a compulsory pooling order is confined to a single spacing unit and applies to a working interest owner. While the term “working interest” as defined in the *Act* might be read (contrary to industry practice) to include a fee simple owner as well as the lessee of the mineral rights, the definition speaks only to drilling for and producing oil and gas and does not include storage:

"working interest owner" means, in respect of a parcel of land, a person who has the right to drill for and produce oil and gas from the land

6.5 Conclusions in relation to Manitoba

There are no natural gas storage projects in Manitoba. There are no clear provisions vesting natural gas storage rights in the Crown and therefore, much as in Alberta and Saskatchewan, storage rights may be owned by the Crown or by private parties depending on the ownership of mineral rights. Manitoba has a single piece of legislation (the *Oil and Gas Act*) to deal with both the disposition of Crown oil and gas rights and the regulation of oil and gas development. In the case of oil and gas, the legislation offers a clear separation between disposition issues and regulatory issues. The *Act* does not maintain this distinction with respect to storage rights. Thus, Part 13 of the *Act* on storage reservoirs presents some challenging interpretive issues. We think that this Part is best interpreted as providing for the disposition of Crown owned storage rights by way of a permit and as creating a basic regulatory framework, in conjunction with regulation under the *Public Utilities Board Act*, but it should not be seen as effecting a vesting of privately owned storage rights in the Crown or in a private operator licensed (permitted) by the Crown. A permit under Part 13 may be a regulatory necessity to operate a storage project in Manitoba but it will not provide a sufficient approval where the storage rights are privately owned.

The legislation does not provide a resolution for holdout problems where a private owner of storage rights refuses to contribute them to storage undertaking. However, a storage operator would likely be able to use the surface rights provisions of the Act to acquire the necessary surface rights for that operation.

7.0 ONTARIO

7.1 Introduction

Ontario has a well-developed natural gas storage industry going back to 1915.²⁰⁷ The province's chief energy regulator, the Ontario Energy Board (OEB), has a long history of regulating the development of natural gas storage facilities, including, in most cases, the economic regulation of these facilities.²⁰⁸

Regulation of natural gas storage in Ontario is premised, as in the prairie provinces, on the idea that gas storage may be privately owned or publicly owned depending upon the mineral ownership of the lands in question.²⁰⁹ Given that storage facilities in Ontario are located in the southern part of the province (and in most cases in depleted oil and gas reservoirs) private ownership of natural gas storage rights is dominant. Regulation is further premised on the idea that the operator of a natural gas storage project should expect to acquire natural gas storage rights for its projects by way of negotiation and agreement with owners. The legislation does provide a mechanism for compulsory acquisition of storage rights from private owners in the event of a holdout.

There are at least three bodies of statutory authority that need to be examined in order to acquire a clear picture of the regulation of natural gas storage in Ontario: (1) the rules pertaining to the disposal of Crown owned storage rights to the extent that such rights are owned by the Crown, (2) the rules pertaining to the drilling and operation of storage wells

²⁰⁷ McGrew, *supra* note 27 at 135, refers to other sources to suggest that the first natural gas storage field commenced operations in Ontario in 1915. Langford Report, *supra* note 9 at 17, notes that "Union Gas has been engaged in gas storage operations since 1942". Some of the history is recounted in *Imperial Oil Ltd v. Minister of National Revenue*, [1977] CTC 455 (FCTD). For a map of storage sites (showing most located in Lambton County close to Sarnia) see the website of the Department of Natural Resources at http://www.mnr.gov.on.ca/en/Business/OGSR/2ColumnSubPage/STEL02_167108.html

²⁰⁸ Applications for gas storage projects and Board decisions are available on the Board's website at <http://www.oeb.gov.on.ca/OEB/>. For the move towards market storage, see the NGEIR Decision, *supra*, note 3, and section 7.5, *infra*.

²⁰⁹ For a nice example, see OEB Decision with Reasons, EB-2008-0405, Application by Union Gas Limited for Natural Gas Storage – Heritage Pool Development, May 29, 2009. In s.2.3 of the Board report it is noted that the bulk of the proposed storage rights were privately owned but that one tract was owned by the province (Ministry of Transport) and another tract was owned by Canada [Heritage Pool Decision]. Online: http://www.oeb.gov.on.ca/dec_reasons_Union_HeritagePool_20090529.

and facilities, and (3) the rules pertaining to the responsibilities of the Ontario Energy Board (OEB) dealing with the designation of gas storage areas, the operation of gas storage facilities, the use of lands for those purposes, the determination of compensation and other ancillary matters and in some cases the economic regulation of those facilities.

7.2 Crown owned storage rights

Ontario deals with the disposition of Crown owned storage rights under the terms of (the very short) Part IV of the *Mining Act*²¹⁰ (which deals generically with oil, gas and underground storage) and the companion regulations entitled *Exploration Licences, Production and Storage Leases for Oil and Gas in Ontario*.²¹¹ The legislation is principally designed to create the authority for the different forms of tenure and an appropriate regulation-making power. Thus s.101.1(1) provides that “The Minister may issue storage leases for the temporary storage of hydrocarbons and other prescribed substances in underground formations on Crown land” while subsection (2) stipulates that “A storage lease does not authorize the permanent disposal of any substance.” A storage lease is the only storage tenure that the legislation contemplates, i.e. there is no formal storage exploration tenure and the exploration licence referred to in s.100 of the *Act* and s.2 of the Regulations is a licence to explore for oil or gas.

Storage leases are offered for sale by tender, and the Regulations require (s.16(2)) that the tender bid shall consist of:

- (3) Where the right to obtain a storage lease for the purposes of storing natural gas is offered for sale by tender under subsection (2), the tender bid shall consist of,

²¹⁰ R.S.O. 1990, c. M-14. There is arguably an outstanding difficulty with the manner in which storage rights have been grafted onto this legislation. The *Act* makes a fundamental distinction between mining rights and surface rights but yet does not define mining rights as including storage rights while surface rights in turn are described as all other interest in land except mining rights, thus perhaps suggesting that storage rights are indeed part of surface rights; but if that were the case why is it necessary to create a form of tenure for storage rights?

²¹¹ O. Reg. 263/02.

- (a) a cash bonus for the right to obtain the storage lease;
- (b) the storage rental, in dollars per 1000 cubic metres of the working storage volume per month, that the applicant proposes to pay the Crown during the first and subsequent terms of the lease;
- (c) the proposed operating parameters and method used in calculating the working storage volume; and
- (d) the method of calculation of and the compensation in dollars for the remaining gas in place.

The lease may be granted for a term of not more than 10 years renewable for successive periods of ten years for those areas of the lease still being used for storage purposes (s.19). The annual rental for storage is based on the bid amount per 1,000 cubic metres of storage or, if there was no bid amount, \$0.30 per 1,000 cubic metres (see s.4 of the Schedule to the Regulations).

7.3 Rules pertaining to the drilling and operation of storage wells and facilities

Ontario regulates the drilling of wells for oil and gas and related purposes under the terms of the *Oil, Gas and Salt Resources Act*²¹² (*OGSRA*) and the *Exploration, Drilling and Production Regulations*.²¹³ The *Act* applies to operations on private lands and Crown owned mineral lands.

The *OGSRA* defines a well as including a well drilled for geological evaluation or for production purposes but also includes a well drilled for the “injection, storage and withdrawal of oil, gas, other hydrocarbons or other approved substances in an underground geological formation” and a well drilled for solution mining (as in the case of a salt deposit) or for disposal of oil field fluids.

²¹² R.S.O. 1990, c. P.12.

²¹³ O. Reg. 245/97.

Section 10 of the *OGSRA* creates the basic regulatory framework when it provides that no person shall “drill, operate, deepen, alter or enter a well, or engage in any other activity on or in a well, except in accordance with a licence.” Injection for enhanced recovery purposes (but not storage purposes) requires an additional permit (s.11), while injection within 1.4 km of a gas storage project requires a report from the Ontario Energy Board (s.11(2)) (see next section on the role of the OEB).

7.4 The role of the Ontario Energy Board

Part III of the *Ontario Energy Board Act (OEBA)*²¹⁴ covers natural gas storage and gives the Board five related responsibilities: (1) to designate storage areas, (2) to authorize injection\recovery operations, and the use of land for those purposes, (3) to report to the Minister on applications to drill wells within or adjacent to a storage area, (4) to determine compensation for the use of lands for storage purposes, and (5) to regulate different facets of gas storage operations including rates and the possible application of market-based rates.

7.4.1 The authority to designate a gas storage area

Section 36.1 provides that the Board, may, by order, designate an area as a gas storage area. This authority is crucial since the accompanying s.37 creates two prohibitions, one of which is that no person shall inject gas for storage purposes “unless the geological formation is within a designated gas storage area”. The *Act* does not provide further guidance as to how the Board should exercise this discretion except that the objectives of the *Act* include the statement that the *Act* and the Board should “facilitate rational development and safe operation of gas storage”.²¹⁵

²¹⁴ S.O. 1998, c.15 [*OEBA*].

²¹⁵ *OEBA*, *ibid.*, s.2(4).

Recent Board decisions however do provide more guidance. For example, in a 2008 decision dealing with the proposed the Sarnia Airport Gas Storage Pool²¹⁶ the Board indicated that it takes account of three matters in recognizing a designated storage area (DSA): (1) whether the underlying geological formation is appropriate for storage, (2) whether the tract of land is appropriately sized to provide for safe operation, and (3) possible effects of designation on directly affected landowners and whether the storage developer has the necessary leases and agreements in place. In a 2009 decision on an application from Union Gas Limited with respect to the Heritage Pool Development, the Board panel added two additional issues, aboriginal consultation, and the need for incremental storage capacity in Ontario.²¹⁷

With respect to the first matter, the Board considers such things as the existence of appropriate seals (lateral as well as capping), porosity of formation rock, proposed operating pressure and pressure and fracture testing. As to the question of sizing, the Board observed in its Sarnia airport storage decision that:²¹⁸

A DSA is established to protect a storage reservoir from future third party drilling and other subsurface activities. A DSA represents a reasonable balance between the protection of the reservoir storage from other subsurface activities and the retention of as much land as possible for future oil and gas exploration and drilling.

Board decisions establish the boundary based on pool boundaries with an allowance for a buffer zone, an area between the boundary of the pool and the edge of the designated area.²¹⁹ The Board typically relies heavily on reports filed by the provincial Department

²¹⁶ EB-2008-0002, In the Matter an application by Market Hub Partners Management Inc. and AltaGas Ltd. for an Order designating the area known as the Sarnia Airport Gas Storage Pool, in the Geographic City of Sarnia in the County of Lambton, as a gas storage, July 28, 2008 [Sarnia Airport Gas Storage Pool Decision], online:

<http://www.oeb.gov.on.ca/OEB/Documents/Documents/dec_reasons_MarketHub_Altagas_20080728.pdf>.

²¹⁷ Heritage Pool Decision, *supra* note 209.

²¹⁸ Sarnia Airport Gas Storage Pool Decision, *supra* note 216 at 7.

²¹⁹ RP-2003-0253, Tribute Resources Inc and Tipperary Gas Corp, Partial Decision with Reasons, October 25, 2004 at 11 [Tipperary Pool Partial Decision].

of Natural Resources as well as by the applicant. However, in its Storage Designation decision for the Tipperary Pool Project the Board declined to extend the Designation Boundary to meet the Department's request to have the boundary coincide with spacing boundaries on the grounds that the designation should remain "a purely technical determination".²²⁰

The Board examines the extent to which the applicants have the necessary property interests to operate the storage and identifies any gaps that the applicant needs to fill. In the case of the Sarnia Airport Pool, the Board noted that the applicants held petroleum and natural gas rights and storage leases for the entire area with two exceptions. It further noted that the applicants would be offering to pay a royalty on residual gas (down to a reservoir pressure of 50 psia) and would also be offering annual storage payments (as well as payments for outside acreage). Such payments would be "competitive with other compensation programs currently offered by other established storage operators in Ontario".²²¹ Compensation issues are discussed in more detail, *infra*.

The form of the Board's Designation Order is relatively simple since it does little more than provide a metes and bounds description of the surface area subject to the designation. The Order does not deal with technical issues. These matters are dealt with in the authorization to operate.

7.4.2 Authorization of injection and recovery operations

Section 38(1) of the *OEBA* provides that:

²²⁰ Tipperary Pool Partial Decision, *ibid.* at 12; and boundaries should protect against "inadvertent penetration into the storage area". See also Century Pools II, Designation Order Decision, RP-1999-0047, March 30, 2000, at para. 3.2.5, where the Board rejected an argument from an owner that the boundary should include an entire unitized area. The Board agreed with the applicant and the Department that it was not necessary to include the lands to ensure the integrity of the storage reservoir.

²²¹ Sarnia Airport Gas Storage Pool Decision, *supra* note 216.

The Board by order may authorize a person to inject gas into, store gas in and remove gas from a designated gas storage area, and to enter into and upon the land in the area and use the land for that purpose.

This, as the Board notes, is the authorization to operate the storage once the pool has been designated. It is also, effectively, an expropriation²²² subject to a right to compensation provided for in the following subsections.

In its Sarnia Airport decision the Board indicated that it typically takes into account the following factors:²²³

- Are appropriate safety requirements for proposed injection/withdrawal activities going to be ensured?
- Will all relevant codes and standards be followed?
- Have the proposed storage wells been appropriately designed and are construction and maintenance plans in order?
- Is the proposed maximum operating pressure safe and prudent?
- What are the potential impacts of injection/withdrawal activities?
- Are the proposed mitigation programs appropriate?
- Is the applicant a capable prospective storage operator in terms of technical and financial capabilities to develop and operate the proposed storage facilities?
- Is the applicant appropriately accountable for losses or damages occasioned by its activities?

The Board notes that operators are required to comply with the relevant CSA standard: CSA Standard Z341.1-06. In addition, conditions of approval specify a maximum

²²² This was the characterization of Joliffe, counsel for the applicants in *Wellington v. Imperial Oil Ltd* [1970] 1 OR 177 (Ont. HC).

²²³ Sarnia Airport Gas Storage Pool Decision, *supra* note 216 at 9 – 10.

operating pressure,²²⁴ require the applicant “prior to the commencement of any injection, storage or withdrawal operations” to “obtain all the necessary storage rights” within the designated area,²²⁵ require the applicant to conduct water tests and if necessary provide water to affected parties, and²²⁶

Obtain and maintain in full force and effect insurance coverage, including but not limited to, liability and pollution coverage, in the amount that is determined to be adequate by an independent party with expertise in adequacy of insurance coverage for environmental and other risks and potential impacts of gas storage operations in southwestern Ontario.

The Board’s decision on Union Gas’ 2009 application with respect to the Heritage Pool Development provided the occasion for discussion of the preferred wording of the condition relating to the acquisition of storage rights. Board staff had proposed a condition that was identical to the condition proposed and accepted for the Sarnia Airport Project (quoted above). Union objected arguing that previous practice had not required such a condition and that a landowner would be fully protected since it would have a statutory right to compensation.²²⁷ The Board accepted this argument and accordingly reverted to the more generic language used in previous decisions to the effect that:²²⁸

²²⁴ In recent years Union, which operates the bulk of the storage facilities in Ontario, has applied to the Board to allow it to increase maximum operating pressures in order to enhance the working capacity of the pools. See, for example, EB-2008-0038, application by Union Gas re operating pressures for Oil Springs East, Payne and Enniskillen, July 10, 2008.

²²⁵ Sarnia Airport Gas Storage Pool Decision, *supra* note 216, Schedule 1, Conditions of Approval, cl. 1.2; or alternatively the Board Order (see, for example, Board Order re Union Gas, Dow Sarnia Block “A” Pool, EBO 172, EBLO 239, October 29, 1991) will provide that the applicant “shall make to the owners of any relevant gas or oil rights or of any right to store gas in the Pool area, fair just and equitable compensation in respect of such gas or oil rights or such right to store gas.”

²²⁶ Sarnia Airport Gas Storage Pool Decision, *supra* note 216, Schedule 1, Conditions of Approval, cl. 1.9; and see also the similar insurance clause included in the approval conditions issued for the Tipperary Pool Project, Reasons for the June 17, 2005 Decision, issued August 25, 2005 at 4 of Conditions of Approval [Tipperary Reasons for June 17, 2007 Decision]. The Board was more deferential in the case of the Union Gas Heritage Pool Decision. There, *supra* note 209 at 15 – 17, the Board acknowledged that perhaps Union with its forty years or so experience was perhaps in a better position to assess the adequacy of its insurance coverage than any independent expert—and the Board amended the proposed condition accordingly.

²²⁷ Heritage Pool Decision, *supra* note 209 at 15.

²²⁸ Heritage Pool Decision, *ibid.* at 16.

Union shall make the owners an offer of fair, just and equitable compensation in respect of gas storage rights and petroleum and natural gas leases, prior to the injection of gas into the Pool.

Union shall make to the landowners and/or tenants an offer of fair, just and equitable compensation for any damage resulting from the authority hereby being granted by the Board.

This language recognizes that there are two broad categories of compensation. One category relates to the storage rights that are effectively being acquired; a second category relates to damage (and presumably principally surface damage) that an owner may suffer. As we shall see below, the Board further breaks down these broad categories of compensation.

The Board did not address one potential difficulty associated with the s.38 order in this case, caused by the status of some of the storage rights. It appears from the record²²⁹ that some of the storage rights here were actually owned by Canada. This raises the question of the extent to which provincial legislation that is effectively compulsory acquisition legislation can be made to apply to federal public property.²³⁰ We do not believe that it can be made to apply although of course there is nothing to prevent Canada from agreeing to contribute its storage rights to the project, or indeed making provision for the application of provincial laws to federal subject matter²³¹ or property.²³²

The Board rejected (at least initially) an application to inject and withdraw gas in the Tipperary Pool Project in 2004. The Board was of the view that while the applicant had the necessary competence on the well drilling side, it had failed to provide the necessary

²²⁹ Heritage Pool Decision, *ibid.* at 3, s.2.3.

²³⁰ The issue is not the *vires* of the legislation; Ontario clearly has the jurisdiction to make such a law, the issue is the applicability of the legislation. For discussion see Elizabeth Edinger, Case Comment, *Bell Canada* (1988), (1989), 68 Can Bar Rev 631; one of us has discussed analogous issues in the context of Indian lands in Bankes, “*Delgamuukw*, Division of Powers and Provincial Land and Resource Laws: Some Implications for Provincial Resource Rights” (1998) 32 U.B.C. L. Rev. 317 – 351.

²³¹ See, for example, *Indian Act*, R.C.S. 1985, c I-5, s.88.

²³² See, for example, *Indian Oil and Gas Act*, RSC 1985, c. I-5.

evidence as to the financial resources that it would need access to in order to run a successful market-based storage operation. The Board offered these general remarks:²³³

The Board's designation of a storage area creates a significant provincial asset. The role of storage areas in augmenting the overall integrity and buoyancy of gas supply and distribution in the province has been noted as early as 1962 in the Langford Report. Stewardship of this asset is important to realizing these benefits. The Board is not prepared to grant exclusive rights to exploit a valuable provincial asset unless the Applicant can demonstrate that it has a reasonable probability to successfully manage those assets in a commercially responsible manner. While the Board does not expect any applicant to be able to demonstrate that its technical and financial viability and preparedness guarantees the success of the proposed operation, it is important that applicants are able to present thoughtful, detailed and adequately supported operational and business plans, which address the key elements of the operation.

The Board ultimately approved the application after the applicant supplied additional supporting data.²³⁴

7.4.3 Applications to drill wells in the storage area

Section 40 of *OEBA* provides that:²³⁵

(1) The Minister of Natural Resources shall refer to the Board every application for the granting of a licence relating to a well in a designated gas storage area, and the Board shall report to the Minister of Natural Resources on it.

²³³ Tipperary Pool Partial Decision, *supra* note 219 at 21.

²³⁴ Tipperary Reasons for the June 17, 2005 Decision, *supra* note 226.

²³⁵ The companion provision in s.11(2) of the *OGSRA* extends this to wells drilled within 1.6 kms of an designated gas storage area.

(4) The Minister of Natural Resources shall grant or refuse to grant the licence in accordance with the report.

The Board indicates that in considering a referral under this section the Board will typically review the geological evidence related to the well location and proposed drilling program, the technical capability of an applicant to conduct the drilling in accordance with applicable standards and codes, and environmental and landowner related matters.²³⁶

The Board's report (see subs.(4)) binds the Minister. Most such applications are routine and deal, for example, with the storage operator's need to drill the original injection\withdrawal wells (and in some cases observation wells) and, over time, additional wells to enhance injection and deliverability.²³⁷

7.4.4 Compensation

Section 38(1) (quoted above) deals with the Board's power to authorize a gas storage operation but also allows the Board to authorize an applicant gas storage operator to enter and use land for those purposes. Subsection (2) deals with the duty to compensate owners for the use of their land.

Subject to any agreement with respect thereto, the person authorized by an order under subsection (1),

(a) shall make to the owners of any gas or oil rights or of any right to store gas in the area just and equitable compensation in respect of the gas or oil rights or the right to store gas; and

²³⁶ *OGSRA, ibid.* at 18.

²³⁷ See, for example, EB-2009-0060, Application by Union Gas Limited to drill 5 [additional] wells in the Tipperary Storage Area; wells required to increase deliverability and the ability to cycle the full working capacity of the pools. The performance of the initial two wells was "significantly less than expected".

(b) shall make to the owner of any land in the area just and equitable compensation for any damage necessarily resulting from the exercise of the authority given by the order.

The section affords primacy to the existence of an agreement. Thus, a Board order in respect of compensation will only be made if the parties cannot reach an agreement. In the Tipperary Pool Project the Board emphasized that it would only get involved if the parties could not negotiate agreements. Hence it would defer the issue of compensation since it was not convinced that the parties had exhausted their negotiations.²³⁸

The Board has said that where there is an agreement it has no jurisdiction to entertain an application under this section.²³⁹ However, where there is no agreement, or where such an agreement does not deal with all relevant matters, the Board will make an order. As the Board stated in its recent decision involving Century Pools:²⁴⁰

The Board finds that in the absence of an agreement under section 38 an applicant is entitled to active and responsible participation and is eligible for an order of the Board determining the compensation. This finding applies where there is no agreement or compensation at all and also where there is no agreement on certain components of compensation.

The Board has identified and uses a number of distinct categories or heads of compensation.²⁴¹ The first is residual gas. Residual gas refers to the gas remaining in a

²³⁸ Tipperary Pool Partial Decision, *supra* note 219 at 24 and 27.

²³⁹ See, for example RP-2000-0005, Application in Respect of Just and Equitable Compensation for the Century Pools Phase II development, September 10, 2003, section 2, “The Board’s General Principles for Standing” [Century Pools Application].

²⁴⁰ Century Pools Application, *ibid*.

²⁴¹ Century Pools Application, *supra* note 239 at section 2. And see in particular the discussion in Tipperary Pool Partial Decision, *supra* note 219 at 26, where the Board recites the terms of settlement proposed by Tipperary:

- Compensation for residual gas in the Tipperary Unit Area is for gas in place down to reservoir pressure of 50 psi to be calculated as follows: 12.5% by Unit Participation Percentage by GIP (Gas in Place) mcf by wellhead price. The purchase price includes any applicable GST and is payable within 30 days of the date of initial injection in the pool;

producing pool down to the point at which it is no longer economical to produce which the Board takes to occur at 50 lbs psi. Compensation under this head may be calculated on the basis of a royalty that would otherwise be payable on this gas (ie gas in place less gas that could not be economically produced) were it to be produced.²⁴² Second, there is compensation for the storage rights themselves, typically expressed as an annual dollar figure per acre of storage rights.²⁴³ This may be divided into a payment for inside acres (lands within the designated storage area) and a (smaller) payment for outside acres (lands where the storage area boundary severed a tract).²⁴⁴ Third, there may be an annual per acre payment for roadways representing compensation for the lease of land and damages, including disturbance, loss of opportunity and crop loss. Fourth, there might be a similar payment for each wellhead.

The Board does not provide extensive reasons to support its decisions as to “just and equitable compensation” (s. 38) under these various headings. Instead, the Board takes a fairly formulaic approach based on compensation patterns in relation to previous storage projects.²⁴⁵ Thus the Board is very much of the view that the compensation rates will be fair and equitable if they are based on and similar to compensation rates payable in the area for similar projects.²⁴⁶

-
- Gas Storage Rights and PNG Rights Compensation at \$ 92.50 per acre;
 - Outside Acreage Compensation for Gas Storage Rights and PNG Rights outside of the DSA at \$27.79 per acre;
 - Gas Storage Wells Compensation in the amount of \$1,050.00 per well, covering the lease of land for facilities, and damages including disturbance, loss of opportunity and crop loss; and
 - Surface Rights Compensation - permanent all weather roads \$ 825.00 per acre.

²⁴² See, for example, RP-2000-0005, Century Pools Phase II, compensation order, March 23, 2004 [Century Pools Compensation Order]. It should be noted however that this Order represented Board approval of a settlement. This is clearly a long-standing practice. See *Wellington v. Imperial Oil* [1970] 1 OR 177 (Ont. HC) where the judgment records that Imperial offered to purchase Wellington’s interest in remaining gas on the basis of 2 cents per mcf down to a pressure of 50 lbs psi [*Wellington v. Imperial Oil Ltd.*].

²⁴³ The practice suggests that this is flat amount per acre; this seems quite inexact when compared with the negotiation for tract participation factors in the context of unitization of a producing field and contrasts with the position in relation to Crown storage interests discussed in section 7.2 *supra*.

²⁴⁴ See Century Pools Application, *supra* note 239 at s. 3.22.4.

²⁴⁵ See, for example, the discussion in Tipperary Pool Partial Decision, *supra* note 219 at 24 – 26.

²⁴⁶ See for example the Board’s Heritage Storage Pool Decision, *supra* note 209 at 15 – 16, where the Board seemingly endorses Union’s approach which was to offer compensation at “the standard Lambton County storage rates” for storage rights, outside acreage, well sites and roads and to adjust these annually based on the CPI.

Section 38(3) aims to ensure that the OEB will be the sole forum for determining compensation (and not the courts in a civil action).²⁴⁷ Thus the section provides that:

No action or other proceeding lies in respect of compensation payable under this section and, failing agreement, the amount shall be determined by the Board.

Subsection (4) does however allow for an appeal to the Divisional Court, in accordance with the *Expropriations Act*, R.S.O. 1990, c. E.26, s.31.

The “just and equitable” formulation of the current legislation is of course very different from the traditional expropriation standard which would be based on ideas of fair market value.²⁴⁸ There is no discussion of the implications of this distinction in the recent decisions of the Board.

Given the primacy that the *Act* affords to agreements, and given that such agreements might take several forms (oil and gas leases, gas storage agreements, gas storage lease agreements, unitization agreements)²⁴⁹ and might have been negotiated over a period of decades (from when exploration first started to the time when the project moved over from production to storage),²⁵⁰ there is a high chance that private storage owners in the same pool might receive widely different amounts of compensation. The Board has consistently expressed some concern about this while recognizing that it lacks the

²⁴⁷ In *Wellington v. Imperial Oil Ltd*, *supra* note 242, Justice Pennell concluded that the predecessor legislation had in fact achieved that result; the section has not changed materially since that time. The Board takes the view that where an agreement between the parties provides for arbitration to determine the appropriate compensation then compensation should be determined by that mechanism rather than by a s.38 Order. Century Pools Compensation Order, *supra* note 242, at s. 3.4.4, at paras 94 – 96.

²⁴⁸ See generally, Eric Todd, *The Law of Expropriation and Compensation in Canada*, 2nd ed. (Scarborough, Ontario: Carswell, 1992).

²⁴⁹ Century Pools Compensation Order, *supra* note 242 at para 40, where the Board noted “the broad range of contractual arrangements that have been made with respect to the Lambton County storage pools. With the exception of the Mandaumin Pool, there are scarcely two identical contracts This diversity presents a challenge in arriving at a uniform and consistent approach to storage compensation.”

²⁵⁰ In addition to the difference in form, note that some such agreements might provide for renewal and periodic reassessment of the level of compensation, whereas others might be perpetual.

jurisdiction to take on the issue directly.²⁵¹ Consequently, the Board resorts to exhorting operators to adopt a policy of uniform treatment throughout a storage pool even if not legally required to do so. However, the Board (see above) does allow parties with agreements to participate as intervenors in s.38 applications on the basis that new compensation orders might have knock-on effects for other parties within the storage area.

7.5 Economic regulation and deregulation of storage in Ontario

In 2003, evidence of decreased production by conventional gas supply sources and of impending growth in natural gas demand (the latter driven by the province's increasing reliance on gas-fired power generators)²⁵² prompted the Ontario Energy Board (the OEB, or the Board) to embark on a broad review of Ontario's natural gas infrastructure and regulatory structure, in order to strategize how best to meet these trends.

A main issue in the review process was whether (and to what extent) the OEB should refrain from regulation of natural gas storage and move from cost-based pricing to market-based pricing, given the Board's mandate of both consumer protection and "rational" development of storage, in the public interest.²⁵³ Depending on market conditions, public interest would be best served either by (a) regulation, in order to maintain fair pricing and reliable service in the face of market power, or monopoly, on the part of utilities, or (b) whole or partial deregulation, where market competition is sufficient to be more efficient than cost-based services. "More efficient" in this context means that a competitive approach will deliver lower prices for consumers, save administrative costs, and encourage investment in new market-priced storage and services (particularly high deliverability storage required especially by gas-fired electricity generators) (because of the potentially higher profits) than might obtain under

²⁵¹ The Board can only set compensation where there is no agreement.

²⁵² Natural gas consumption for power generation in Canada increased 257.2% from 1971 to 2001; see David Brown, Roger Ware, and Howard Weston, "Forbearance, Regulation, and Market Power in Natural Gas Storage: The Case of Ontario" (World Energy Congress 2007) online: <<http://www.worldenergy.org/documents/p000964.pdf>> at 4.

²⁵³ Brown, Ware, and Weston, *supra* note 252 at 17.

cost-based regulation.²⁵⁴

The OEB's review process consisted of the Natural Gas Forum, which started in 2003, and the subsequent Natural Gas Electricity Interface Review, which culminated in the Board Decision of November 7, 2006 in which the OEB announced its partial deregulation of storage pricing—the first decision on “general forbearance” from regulation in the natural gas industry in Ontario.²⁵⁵

The following sections briefly outline the NGF and NGEIR review processes and the NGEIR Decision, then touch on the Board activities which flowed from each part of this four-fold Decision, which focused on 1) new storage providers, 2) ex-franchise and 3) in-franchise customers of Union and Enbridge, and 4) new storage services provided by Union and Enbridge to in-franchise customers.

7.5.1 Natural Gas Forum

The first stage of the Board's review, the Natural Gas Forum (the Forum), culminated on March 30, 2005 with a report outlining the resulting OEB policy decisions on the regulatory framework for the natural gas sector.²⁵⁶ The report and the hearings that preceded it were prompted by the Board's perceived need to evaluate and strategically integrate regulation of natural gas infrastructure. The availability and future development of underground natural gas storage—especially that of the high-deliverability “operationally flexible” storage required by natural gas plants and increasingly employed as a hedge against higher and more volatile gas prices—was one of the challenges considered by the Board.²⁵⁷

In this context, the Forum's task was to consider how best to achieve development and, specifically, to consider whether the Board should refrain from regulating storage pricing

²⁵⁴ Brown, Ware, and Weston, *supra* note 252 at 6.

²⁵⁵ Brown, Ware, and Weston, *supra* note 252 at 18.

²⁵⁶ Ontario Energy Board, “Natural Gas Regulation in Ontario: A Renewed Policy Framework—Report on the Ontario Energy Board Natural Gas Forum,” March 30, 2005 [NGF Report].

²⁵⁷ NGF Report, *ibid.* at 39.

and allow market-based pricing for storage, as the Board potentially could be required to do, under s.29 of *Ontario Energy Board Act (OEBA)*:²⁵⁸

29. (1) On an application or in a proceeding, the Board shall make a determination to refrain, in whole or part, from exercising any power or performing any duty under this Act if it finds as a question of fact that a licensee, person, product, class of products, service or class of services is or will be subject to competition sufficient to protect the public interest.

The consideration of this issue focused on whether refraining from regulation would in fact encourage development of storage services, whether there was sufficient competition in the natural gas storage market to satisfy the requirement of s.29 *OEBA*, and whether the public interest would indeed be served by allowing market-based pricing for storage.²⁵⁹

The Board was also cognizant of the possibility that its practice of having already allowed some market-based pricing for storage—outside of an explicit, integrated, policy-driven approach to the issue—was effectively discriminatory. In practice, the Forum report observed, the OEB had begun to allow some market-based pricing specifically in its approvals of storage contracts between utilities and their ex-franchise customers.²⁶⁰ In 1997, for example, the OEB approved the application of market-based rates to certain ex-franchise storage contracts because it found that parties had purchased storage and then rented it to third parties at higher prices. The Board decided that this rent should properly flow to Union (a regulated utility) and its ratepayers, and so allowed Union to charge a market-based rate for that storage.²⁶¹ In a 1999 Decision,²⁶² the Board approved a proposal by Union Gas to renew existing ex-franchise cost-based storage

²⁵⁸ *OEBA*, *supra* note 214.

²⁵⁹ NGF Report, *supra* note 256 at 57.

²⁶⁰ NGF Report, *ibid.* at 46, 48.

²⁶¹ See reference to the approval in EBRO 494-03 (1997) at 8, online:

<http://www.oeb.gov.on.ca/documents/consultation_ontariosgasmarket_ceedappc1_finalsub_161104.pdf>.

²⁶² OEB Decision with Reasons, Application by Union Gas for Approval of Rates, RP-1999-0017, July 21, 2001, [Approval of Union Rates] online:

<http://www.oeb.gov.on.ca/documents/cases/RP-1999-0017/decision_1999.pdf>.

contracts at market prices. In that Decision, the Board focused less on the evolving boundary between in-franchise and ex-franchise customers, which had become the basis of its distinction in terms of pricing, but rather on how the resulting revenue—that is, “any premium that exists due to the differential between market price and the embedded cost of storage”—would be allocated (i.e. as between shareholders and rate payers). The OEB observed that, although the Board had not previously allocated a share of storage premiums to utilities, as it had done with premiums on transactional services, such sharing could work as an effective incentive for the efficient management of existing storage services.²⁶³

The Forum resolved that the OEB would proceed by studying further the impact of increased gas-fired power generation on natural gas storage and transportation infrastructure (or, the convergence of those markets)—first, in a Gas-Electricity Interface Review, to be followed by a Storage Proceeding.²⁶⁴ The OEB did decide, however, that henceforth it would refrain from price regulation for new storage developed by independent (not affiliated with gas distributors or transmitters) storage operators.²⁶⁵ For example, on June 17, 2005, the OEB approved an application by Tribute Gas Corp. to inject, store and withdraw gas in a designated storage pool in Huron County, and allowed it to sell that storage at market-based rates.²⁶⁶

7.5.2 Natural Gas Electricity Interface Review

The Natural Gas Electricity Interface Review (NGEIR), which focused on storage development and pricing, with particular attention to high deliverability services, culminated in the OEB Decision with Reasons released November 7, 2006.²⁶⁷ The NGEIR was charged with considering whether the Board—notwithstanding its authority under the *OEBA* to regulate storage rates under s.36 (on gas regulation, as the section

²⁶³ Approval of Union Rates, *ibid.* at 140-142.

²⁶⁴ NGF Report, *supra* note 256 at 54.

²⁶⁵ NGF Report, *ibid.* at 57.

²⁶⁶ See OEB Decision RP-2003-0253,EB -2003-0314,EB -2003-0315,EB -2003-0316,EB -2003-0317, issued June 20, 2005, supporting the conversion of the existing Tipperary north pool from gas production to gas storage, online: <http://www.oeb.gov.on.ca/documents/decision_tipperary_200605.pdf>.

²⁶⁷ NGEIR Decision, *supra* note 3.

relates to storage) and to approve storage contracts under s. 39(2)—should refrain from regulating storage prices (and contracts) as potentially required by s.29 of the *Act*.²⁶⁸

The test for regulatory forbearance under s.29 *OEBA* is whether the market under consideration is subject to competition sufficient to protect the public interest, in which case, the OEB shall refrain from regulation. The NGEIR analysis of whether “workable” competition existed in the natural gas storage market focused on several issues: the product market (whether substitute products or services could be considered of a species with the service under scrutiny—storage); the geographic market (the area which would properly figure in the assessment of competition); market share (in this case, whether either of the gas utilities had market power); and conditions for entry of new suppliers and new investment.²⁶⁹

As for product market, the OEB decided that, although there were products and services that could substitute for storage (such as commodity sales, swaps, exchanges, displacement, and delivery/redelivery service), because these substitutes were difficult to quantify, the analysis would be confined to storage. Geographically, the OEB concluded that Ontario storage operators compete in a market that includes Michigan and parts of Illinois, Indiana, New York and Pennsylvania.²⁷⁰ As for market power, the OEB found that neither Union nor Enbridge had a storage market share that precluded workable competition, on the basis that their share of the market’s working gas capacity (13.1% and 7.9% respectively) and maximum daily deliverability (9.1% and 7.1% respectively) did not indicate market power.²⁷¹ Finally, the OEB found that, because neither Union nor Enbridge exercised market power, an analysis of the conditions for entry of new suppliers and new investment was not necessary.²⁷²

The OEB concluded that the storage market in Ontario was indeed subject to workable

²⁶⁸ NGEIR Decision, *ibid.* at 74.

²⁶⁹ NGEIR Decision, *ibid.* at 30, 31.

²⁷⁰ NGEIR Decision, *ibid.* at 37.

²⁷¹ NGEIR Decision, *ibid.* at 39.

²⁷² NGEIR Decision, *ibid.* at 41.

competition. The Decision observed:²⁷³

It is not necessary to find that there is perfect competition in a market to meet the statutory test of “competition sufficient to protect the public interest”; what economists refer to as a “workably competitive” market may well be sufficient.

The OEB also noted that the s.29 test for market competition suggests reliance on qualitative evidence since it speaks (“or will be subject to competition”) to the direction in which the market is moving.²⁷⁴

The second step in the s.29 *OEB*A analysis was to consider whether the workable competition in the storage market was sufficient to protect the public interest. The OEB’s analysis on this point followed the structure of its own public interest mandate: the pursuit of competition in the sale of gas to users, consumer protection (in terms of price and reliability of service), and the rational development and safe operation of storage.²⁷⁵

In this stage of its analysis, the OEB reiterated its mandate to foster competition. It concluded that refraining from rate regulation and contract approval in the ex-franchise market was the best means of achieving competition capable of protecting the consumers’ interests.²⁷⁶ In order to best facilitate development, the OEB reiterated its commitment (first signaled in the NGF report) to refrain from setting storage rates and approving storage contracts for third-party development, whether independent or affiliated (with the utilities), and decided also to forbear in the same manner where utilities chose to invest in new storage services.²⁷⁷ As noted above, this was the first invocation of s.29 *OEB*A by the OEB, and indeed the first “general forbearance” from regulation in the natural gas industry.²⁷⁸

²⁷³ NGEIR Decision, *ibid.* at 26.

²⁷⁴ NGEIR Decision, *ibid.* at 26.

²⁷⁵ NGEIR Decision, *ibid.* at 42-51.

²⁷⁶ NGEIR Decision, *ibid.* at 48.

²⁷⁷ NGEIR Decision, *ibid.* at 50.

²⁷⁸ Brown, Ware, and Weston, *supra* note 252 at 13.

In summary, in its Decision following the NGEIR, the OEB concluded that it would (emphasis supplied):

- 1) refrain from regulating the storage rates or approving the contracts of new storage providers;
- 2) refrain from regulating the storage rates or approving the contracts of ex-franchise storage customers of Union and Enbridge; and
- 3) continue to regulate storage rates for bundled, unbundled and semi-unbundled in-franchise customers of Union and Enbridge;
- 4) refrain from regulating the rates or approving the contracts for new storage services offered by Union and Enbridge to their in-franchise customers.

The following sections elaborate on these four aspects of the Decision, and outline OEB activities which have flowed from each of them.

7.5.3 New storage providers

As declared in the earlier Natural Gas Forum report, the NGEIR Decision confirmed that the OEB would refrain from regulating storage rates and approving the contracts of new storage providers—that is, storage services offered by operators other than Union or Enbridge, but including storage operators affiliated with Union and Enbridge.²⁷⁹ New or third-party storage would be unregulated in these contexts in order to encourage development of new storage services—particularly, those “more specialized services to meet the load characteristics of power generators”, or high-deliverability storage.²⁸⁰

The inclusion of affiliated operators in this category of operators included Market Hub

²⁷⁹ NGEIR Decision, *supra* note 3 at 74, 3.

²⁸⁰ NGEIR Decision, *ibid.* at 50.

Partners Canada (MHP), a Union affiliate which had earlier proposed to develop storage in Ontario. During the NGEIR hearings, MHP had applied for an expedited decision on its proposal to charge market-based rates for storage on the basis that MHP was similar to an independent operator. On September 7, 2006 (two months before the NGEIR Decision) the OEB granted this authorization and relieved MHP of the obligation to seek OEB approval of its storage contracts.²⁸¹

Following the NGEIR Decision, the OEB formally rescinded the storage rate orders for both MHP and Tribute Resources Inc.²⁸² The OEB also extended development deadlines for Tipperary Gas Corp. (authorized earlier to develop a storage facility in Huron County) on the basis that Tipperary's operation was one of very few independent storage operations in Ontario at that time, and that the "emerging" independent storage market was in the public interest.²⁸³ In a Decision approving applications by MHP to develop the St. Clair gas storage pool, the Board observed that although MHP would not require OEB approval of its contract terms (specifically, the contracting parties and the period terms) as per the NGEIR Decision, agreements would nevertheless still need to comply with "general terms and conditions" of operation.²⁸⁴

7.5.4 Ex-franchise customers

In the NGEIR Decision, the OEB also declared that it would refrain from regulating the storage rates and approving the contracts of cross- or ex-franchise storage customers of Union and Enbridge.²⁸⁵ As noted above, in practice, the OEB had already begun to allow market-based storage rates to apply to ex-franchise contracts. The NGEIR Decision clarified the OEB's policy in this respect, and distinguished the preceding practice of

²⁸¹ NGEIR Decision, *ibid.* at 53, 5.

²⁸² OEB Order EB-2005-0551, February 5, 2007, online: <http://www.oeb.gov.on.ca/documents/cases/EB-2005-0551/Decision_Orders/order_mhp_tribute_20070205.pdf>.

²⁸³ OEB Decision with Reasons, EB-2006-0018, EB -2006-0159, and EB -2006-0279, February 6, 2007 at 11-12, online: <http://www.oeb.gov.on.ca/documents/cases/EB-2006_0018/dec_Tipperary_20070206.pdf>.

²⁸⁴ OEB Reasons for December 26, 2006 Decision, EB-2006-0162, EB -2006-0163, EB -2006-0164, EB -2006-0165, EB -2006-0166, EB -2006-0167, February 13, 2007, at 20, online: <http://www.oeb.gov.on.ca/documents/cases/EB-2006-0162-0167/decision_reasons_mhp_20070213.pdf>.

²⁸⁵ NGEIR Decision, *supra* note 3 at 71-74.

allowing market-based pricing from the deregulation that would follow: ex-franchise contracts had in fact been regulated, the Decision noted, but had been subject to OEB approved maximum rates high enough not to have actually constrained pricing.²⁸⁶

Following the NGEIR Decision, on May 29, 2009 the OEB released a Decision approving the designation and operation by Union of the Heritage Gas Storage Pool in the Township of St. Clair, County of Lambton, Ontario. The Board approved Union's request that this operation be subject to market-based rates precisely on the basis that the operation would not be part of Union's regulated business but rather a strictly ex-franchise service to customers in Eastern Canada and northeastern U.S.²⁸⁷

The NGEIR Decision also indicated that sharing premiums from ex-franchise storage contracts with ratepayers (by reducing distribution rates), with small incentive payments going to the utilities, would continue for short-term storage contracts, but not for long-term contracts using storage space not needed to meet in-franchise demands, on the basis that the latter capacity would constitute a "non-utility" asset.²⁸⁸ However, the OEB specified that this shift in profit streaming would take place over a transitional period from 2008 until 2011. On October 23, 2008, the Board issued a Decision rejecting Union's interpretation (reflected in their accounting) that this shift would apply starting immediately on the release of the NGEIR Decision.²⁸⁹

7.5.5 In-franchise customers

The NGEIR Decision also specified that the OEB would continue to regulate storage rates for bundled, unbundled and semi-unbundled in-franchise customers of Union and Enbridge.²⁹⁰ The OEB also decided that Union would reserve approximately two-thirds of its existing storage capacity for in-franchise needs, projecting that this amount would

²⁸⁶ NGEIR Decision, *ibid.* at 13.

²⁸⁷ Heritage Pool Decision, *supra* note 209 at 9-10.

²⁸⁸ NGEIR Decision, *supra* note 3 at 4.

²⁸⁹ OEB Decision on Motion, EB-2008-0154, October 23, 2008, online: <http://www.oeb.gov.on.ca/OEB/Documents/EB-2008-0154/Dec_Motion_Union_Gas_20081023.pdf>.

²⁹⁰ NGEIR Decision, *supra* note 3 at 74.

be adequate for those needs over the following several decades.²⁹¹

The Decision elaborated on the distinction between in- and ex-franchise customers.²⁹² The OEB largely accepted Union’s description of the distinction: in-franchise customers are inside the franchise area; ex-franchise customers are outside.²⁹³ However, the OEB noted several exceptions to these categories—for example, three distributors (the City of Kitchener’s gas distribution utility, Natural Resource Gas Ltd., and Six Nations Natural Gas Company Limited) were purchasing storage at cost-based rates (being physically connected to Union’s distribution system) while serving customers (“cross-franchise”) outside of Union’s franchise area. Thus, the OEB defined the term “in-franchise customers” within its Decision so as to include distribution customers of the utilities.²⁹⁴

The OEB also noted two exceptions within this group of distribution customers: Enbridge and Kingston, distinguished because the storage services they (unlike the others in the group, which had no access to storage alternatives) received were subject to competition sufficient to protect the public interest, and therefore should not be rate regulated.²⁹⁵ In other words, the basis for applying cost- or market-based rates would turn on the “competitive position” of the distribution customer.²⁹⁶ Kingston already was purchasing storage at market-based rates; Enbridge, however, was purchasing storage at cost-based rates. The Board decided that Enbridge would also be subject to market-based rates for storage, but that the transition to market-based rates would be phased in over several years (to be completed in 2010) in order to protect Enbridge’s customers from the shift to potentially higher market-based rates.²⁹⁷

Following the NGEIR Decision, the OEB approved Union’s 2007 rate schedule, noting that the schedule complied with the Decision in still retaining the cost-based storage

²⁹¹ NGEIR Decision, *ibid.* at 4.

²⁹² NGEIR Decision, *ibid.* at 60.

²⁹³ NGEIR Decision, *ibid.* at 14.

²⁹⁴ NGEIR Decision, *ibid.* at 15, 56.

²⁹⁵ NGEIR Decision, *ibid.* at 66.

²⁹⁶ NGEIR Decision, *ibid.*

²⁹⁷ NGEIR Decision, *ibid.* at 65.

pricing for Enbridge.²⁹⁸ On June 11, 2009, the Board approved an in-franchise, cost-based contract for storage between Union and Ferrous Processing and Trading Company.²⁹⁹

7.5.6 New storage services offered by Union and Enbridge to in-franchise customers

The NGEIR Decision also announced that the OEB would refrain from regulating the rates or approving the contracts for new storage services offered by Union and Enbridge to their in-franchise customers.³⁰⁰

The category “new storage services” includes (indeed, arose from) high-deliverability storage.³⁰¹ The working definition of high deliverability is when 10% of the volume can be delivered in one day, in comparison with 1.2% for conventional seasonal storage.³⁰²

The impetus for refraining from price regulation of this particular service is the need for its development, following from the issues identified by the NGF, which foresaw increasing growth of gas-fired power generation and the need for high-deliverability storage to meet those demands. In the NGEIR Decision, the OEB decided that development would be best regulated where utilities would both receive incentive for and bear the risk of new development.³⁰³ The decision to refrain from price regulation (and contract approval) of high-deliverability storage was broadened by the OEB to encourage development of all “new” storage services more generally.³⁰⁴

Subsequent to the NGEIR Decision, the Association of Power Producers of Ontario

²⁹⁸ OEB Decision EB-2005-0520, EB -2006-0502, December 19, 2006, at 3-4, online: <http://www.oeb.gov.on.ca/documents/cases/EB-2005-0520/finalrateorder_union_191206.pdf>.

²⁹⁹ OEB Decision and Order EB-2009-0082, June 11, 2009, online: <[http://www.oeb.gov.on.ca/documents/cases/EB-2009-0082/Dec_Order_Union_T1_Ferrous_20090611](http://www.oeb.gov.on.ca/documents/cases/EB-2009-0082/Dec_Order_Union_T1_Ferrous_20090611.pdf)>.

³⁰⁰ NGEIR Decision, *supra* note 3 at 74.

³⁰¹ NGEIR Decision, *ibid.* at 66.

³⁰² NGEIR Decision, *ibid.* at 14; Brown, Ware, and Weston, *supra* note 252 at 3. Also see OEB Decision EB-2006-0322, EB -2006-0340, July 20, 2007, at 14: “The Board has refrained from regulating rates for deliverability higher than 1.2%”, online: <http://www.oeb.gov.on.ca/documents/cases/EB-2006-0322-0338-0340/dec_reasons_NGEIR_20070730.pdf>.

³⁰³ NGEIR Decision, *supra* note 3 at 50, 51.

³⁰⁴ NGEIR Decision, *ibid.* at 69-71.

challenged the lack of price regulation for high-deliverability storage, arguing that there was insufficient competition for such services (a lack of competitive alternatives), and in a Decision issued May 22, 2007, the OEB found grounds for review.³⁰⁵ On review, however, the OEB decided that it would not vary any aspect of the NGEIR Decision. The OEB noted, with respect to this particular motion, that the NGEIR decision had acknowledged that these services were not being offered currently, and that investments would be required in order to develop them—but also that the development of the services was necessary, and that a non-regulated market was the rational and most effective model in which to achieve this development. The NGEIR Decision had explicitly found that “competition in these services *will be* sufficient to protect the public interest” and that the OEB was therefore required to refrain from regulation in this area.³⁰⁶

On July 31, 2009, the OEB issued a Decision approving Union’s proposal to increase the operating pressures in three natural gas storage pools above the pressures set in the OEB’s original conditions of approval.³⁰⁷ The proposed increase in operating pressures would increase the working capacity of the pools, which Union intends to use to provide storage services to customers at market-based rates.³⁰⁸ Referring specifically to the discussions of demand for high deliverability storage in the NGEIR Decision, Union’s application stated that the additional capacity created by the proposed increased operating pressures will be used to meet the requirements of power generators and marketers.³⁰⁹

³⁰⁵ OEB Decision and Reasons EB-2006-0322, EB-2006-0338, EB-2006-0340, May 22, 2007, online: <http://www.oeb.gov.on.ca/documents/cases/EB-2005-0551/Decision_Orders/dec_reasons_NGEIR_motion_20070522.pdf>.

³⁰⁶ OEB Decision EB-2006-0322, EB -2006-0340, July 20, 2007, at 12, online: <http://www.oeb.gov.on.ca/documents/cases/EB-2006-0322-0338-0340/dec_reasons_NGEIR_20070730.pdf>.

³⁰⁷ OEB Decision and Order EB-2009-0144, July 31, 2009, online: <http://www.oeb.gov.on.ca/documents/cases/EB-2009-0144/Decision_Order_Union_Bentpath_Storage_20090731.pdf>.

³⁰⁸ It appears that the original proposals and authorizations had been predicated on sales at market-based rates; with regard to Oil City Pool and Bluewater Pool, at least, in a hearing (RP-1999-0047) on the original applications for storage designation and injection/withdrawal authorization, Glenn Leslie noted for Union Gas Ltd. that: “... the storage is underpinned by contracts which will return market value prices and that will result in premiums over cost-of-service rates.” Online: <<http://www.oeb.gov.on.ca/documents/cases/RP-1999-0047/VOLH3.TXT>>.

³⁰⁹ OEB Decision and Order, *supra* note 307 at 2,4,6.

In sum, Ontario has made huge moves to deregulate gas storage in the province partly in order to provide greater security of supply.

7.6 Treatment of resource use conflicts

Ontario deals with the issue of resource use conflicts (between gas storage and other uses of the surface and subsurface estate) at a number of different levels. First, in the case of Crown owned storage rights, the *Mining Act* provides (s.101.2) that “the Minister may issue an exploration licence, production lease or storage lease under this Part in respect of land that is already subject to a licence or lease under this Part” (i.e. Part IV of the *Mining Act*).³¹⁰ This suggests that existing uses of the subsurface estate will not automatically have priority over proposed storage uses. This signal may be important should the Minister act on this authority since it may make it more difficult for a mining operator, whose exploration activities might be sterilized by a storage project, to claim that the government has “expropriated” its interest.³¹¹

Second, s. 40 of the *OEBA* (quoted above) provides a mechanism for managing some potential resource conflicts, at least within the designated storage area. Section 40, it will be recalled, requires the Minister to refer well licence applications within a DGSA to the Board for its report. A recent example involved an application by Enbridge with respect to designated storage in Lambton.³¹² The storage project was based on a pinnacle reef structure with a gas cap and underlying oil zone. Oil production from the lower zone proceeded concurrently with the gas storage operations. Enbridge proposed to re-enter a number of vertical oil wells in the pool and kick off a horizontal well to enhance oil production. In its report recommending approval, the Board canvassed a number of issues including land matters, effect on rates, and environmental matters, before concluding that the proposal should not affect the storage operation and might provide some

³¹⁰ This is expressed to be “despite the definition of Crown land” which expressly excludes from the definition “land, the surface rights, mining rights or the mining and surface rights of which are under lease or licence of occupation from the Crown”.

³¹¹ See *British Columbia v. Tener* [1985] 1 S.C.R. 533: the Supreme Court found that the registered owner’s mineral interest (in land now within Wells Gray Provincial Park) was expropriated through the operation of the Park Act.

³¹² OEB EB-2006-0002(3), January 30, 2006.

enhancement. Clearly, and especially given successful experience with earlier horizontal wells, this was an easy case; in fact, there was no real conflict between the two activities.³¹³

7.7 Conclusions for Ontario

There are numerous natural gas storage projects in southern Ontario. Union Gas is the most important operator. Ontario has more than fifty years experience with natural gas storage. This experience is reflected in both the number of storage projects in the province but also in the sophisticated and transparent regulatory approach of the Ontario Energy Board to the approval of such projects.

Ontario recognizes that storage rights may be owned by the Crown or by private owners based upon ownership of the mineral rights in relation to the land. Private ownership is dominant in that part of the province where storage operations are active but the Crown does have in place a tenure regime for disposing of Crown owned natural gas storage rights. The Ontario Energy Board regulates the development of storage sites and in the course of that also provides a mechanism to deal with and provide compensation in the event of holdouts (either surface or subsurface). In recent years Ontario has moved away from the economic regulation of gas storage and has signaled that new storage, and the expansion of existing storage facilities, should be able to take advantage of market-based rates.

³¹³ The vertical wells predated designation as a storage area; and the wells would only be produced when reservoir pressure (and storage) was low.

8.0 QUEBEC

8.1 Introduction

Historically there has been very little natural gas production in Quebec. However, there are currently two natural gas underground storage properties in Quebec; one in Saint-Flavien and the other in Pointe-du-Lac. Both are depleted natural gas fields. Gaz Métropolitain, the dominant distribution utility in Quebec, has an interest in these two properties through its 50% interest in Intragaz. Storage is subject to economic regulation by the Régie de l'énergie du Québec.³¹⁴

The principal legislation dealing with underground natural gas storage in Quebec is the *Mining Act*.³¹⁵ The *Act* deals with issues of ownership in Chapter II, especially ss. 3 – 5. Well licences area dealt with in Division X of Part III, while Division XI deals with exploration tenures for petroleum and natural gas, brine and natural gas storage, and Division XIII deals with production leases for the same substances and for a lease to operate an underground storage reservoir.

Surface rights are dealt with in Chapter IV, Division III but these provisions seem to be confined to those engaged in mining operations rather than underground storage operations.

8.2 The ownership position

Our interpretation of the ownership provisions of the *Mining Act* is that the ownership position with respect to natural gas storage rights follows the position with respect to minerals. This conclusion turns on a 1986 amendment to the *Mining Act* which provided that the same rules (and exceptions) apply to underground storage reservoirs as apply to minerals, at least in terms of “the domain of the state”. Hence, this section begins with a

³¹⁴ See Gaz Metro website online: <<http://www.corporatif.gazmetro.com/default.aspx?culture=en-CA>>.

³¹⁵ R.S.Q., c. M-13.1.

discussion of the position in relation to minerals and then turns to look at the position in relation to storage rights.

Historically, the position in relation to minerals was that while most minerals were vested in the state, older forms of grant either under the seignorial system or under pre-1880 grants carried mineral title. In 1982, the province introduced *An Act Respecting the Revocation of Mining Rights and Amending the Mining Act*,³¹⁶ to amend the *Mining Act* so as to vest nearly all mineral rights in the Crown. Exempted from this re-vesting were *existing* mining operations and petroleum and natural gas operations. At this time the *Mining Act* (Division XVII) dealt with the regulation of underground reservoirs for storage operations—specifically, licensing for exploration and or development of underground reservoirs belonging to the Crown—but did not provide for a more general Crown vesting. However, the *Act* was further amended in 1987 to declare that ownership of underground reservoirs was to be subject to the same rules as mineral rights.³¹⁷

The current version of the *Mining Act*, provides as follows:

Chapter II, Ownership of rights in or over mineral substances and underground reservoirs, Domain of the State.

3. Subject to sections 4 and 5 [the latter of which exempts certain mineral substances and does not pertain to underground reservoirs], rights in or over mineral substances, other than those of the tilth, form part of the domain of the State. The same rule applies to rights in or over underground reservoirs situated in lands of the domain of the State granted

³¹⁶ S.Q. 1982, c.17 (in force 15 September 1982).

³¹⁷ S.Q. 1987, c. 64. The Bill's explanatory notes included the following: "This bill revises and consolidates mining law and replaces the Mining Act. Its main object is to regulate the terms and conditions for allocating mining rights pertaining to mineral substances and underground reservoirs in the public domain. The bill enacts that mineral substances and underground reservoirs are Crown property. At the same time, it preserves acquired rights in such property under former legislation. The bill revokes, in favour of the Crown, rights in underground reservoirs not in the public domain." The government's introduction of the Bill in the legislature reiterated precisely these parts of the explanatory notes. The Bill did not attract debate (Québec, *Débats de l'Assemblée nationale* (9 Décembre 1986) at 4994 (M. Raymond Savoie)).

or alienated by the State for purposes other than mining purposes.

The *Act* does not define the term “underground reservoir”.³¹⁸

8.3 The disposition rules for state owned storage rights

The *Mining Act* deals with dispositions for storage in the same manner as it deals with dispositions for other purposes. Thus, there is an exploration tenure (an exploration licence) and an operational tenure (in the form of an operating lease). This section examines the rules dealing with each.

Section 165 of the *Act* provides that:

No person may explore for petroleum or natural gas, brine or underground reservoirs unless he holds, as the case may be, an exploration licence for petroleum and natural gas, an exploration licence for brine or an exploration licence for underground reservoirs issued by the Minister.
[emphasis supplied]

Licences are issued for a five year term (s.169) (renewable for five successive one year periods) on the basis of an application³¹⁹ rather than on the basis of a bidding process—unless the Minister has issued a special call for tenders (s.166(1)). The Minister has not made use of this special call process in the past. The *Act* also provides what is effectively a right of first refusal for the holder of a tenure for one set of rights (e.g. petroleum exploration rights), where another party (without an existing tenure) applies for another set of rights (e.g. storage rights). Thus s.167 provides that:

³¹⁸ Neither do the regulations, but the Regulation respecting petroleum, natural gas, brine and underground reservoirs, R.R.Q. c. M-13, r.1 does define an “artificial underground reservoir” as “any cavity resulting from the extraction or the dissolution of the surrounding rock.” This serves to distinguish salt caverns from a depleted reservoir.

³¹⁹ The Minister must exclude from the area of an application any land lands subject to lease to operate storage or an application therefore. The Regulations *ibid.* (s.63) prescribe the information that an applicant must provide in support of its application.

Where a person applies for an exploration licence for petroleum and natural gas, an exploration licence for brine or an exploration licence for underground reservoirs with respect to a territory already subject to such a licence held by a third person, the Minister shall first offer the exploration licence applied for to that third person.

In a somewhat unusual provision (in terms of Canadian oil and gas statutes), s.173 contemplates that the holder of an exploration licence (including a storage licence) may, with the approval of the Minister, carry out exploration on territory bordering the licensed territory, “provided the proposed exploration work is necessary to gain better knowledge of the territory subject to his licence.” The *Act* recognizes that the holder of an exploration tenure may wish to produce (or in the case of a storage reservoir, store) on a pilot basis. Thus s.175 provides that the exploration licensee can only use an underground reservoir for storage purposes for a test period (which may be extended).³²⁰ The licensee may group a number of exploration licenses in order to meet work commitment obligations (s.180).

Leases for the operation of underground storage are dealt with in Division XIII, ss.193 – 206. The general scheme is that the Minister must (subject to exceptions dealing with existing and pending competing rights claims) issue a lease to operate an underground reservoir to a person (note that the *Act* uses the term “person” rather than licensee) “who establishes the presence of ... an operable underground reservoir”.³²¹ The lease area must not be less than 200 ha or more than 2,000 ha including a protected area zone.³²² Leases are granted for 20 years subject to three ten year renewals with the possibility of further extensions if it can be shown that an underground reservoir is still “operable” (s.199).

The regulations (s.112) require an applicant for a storage lease operation to provide a

³²⁰ The regulations (s.72) provide that the test period for a storage reservoir shall not exceed one year.

³²¹ The test for lease issuance for production has an economic component; not so the test for storage.

³²² These figures appear to be based on the similar size of lease tenures for production purposes. The size may be quite arbitrary in the context of storage operations where an operator will want to know that its rights extend throughout the reservoir. See Winter, *supra* note 18, at 108, n 2, indicating that the Suffield Storage site is recognized to cover 7,232 ha of Crown lease lands and 400 ha of freehold lands.

suite of information in support of its application. This seems to include the information that the province would like to have as owner, and information that the province needs as the regulator of a storage operation. In this context it is notable that s.113 of the regulations contemplates that the Minister will fix the rent for a storage lease taking “into account the depth, thickness, extent and economic prospects of the underground reservoir”.³²³ The application must allow for a protective perimeter (s.114) which shall “be at least 10% of the width of the underground reservoir measured at its widest place.” The regulations deal with the native gas issue by stipulating (s.117) that the storage lessee may not produce any more mineral substances from the underground reservoir than the quantity injected unless it holds mining rights for the extracted substances.

8.4 The regulation of storage

The regulation of storage operations is comprised of regulations pertaining to drilling of wells, and regulations pertaining to the operation of storage. Section 160 provides that no person may drill a well for oil, gas or brine “or to explore for or operate an underground reservoir” without a well drilling licence. The regulations to the *Act*³²⁴ are generic for different types of wells and require the applicant to describe a drilling program as part of its application (s.15), including a geological projection of the operations. Section 22(7) provides that a licensee may not drill a well within 1,600m of an existing underground reservoir. The regulations contemplate three forms of well licence, a well drilling licence (ss. 15 – 48), a well completion licence (the application for which must describe the completion program and an evaluation) (ss.49 – 55) and a well conversion licence (ss. 56 – 57). Converting a well from production to injection would trigger an application under these provisions.

³²³ Information that the applicant must submit under s.112 includes information about the thickness of the reservoir and its porosity and permeability. Note that while the western jurisdictions (e.g. British Columbia, Alberta, Saskatchewan) apply a flat per hectare fee, both Ontario (which fixes rent on the basis of storage capacity) and Quebec have adopted a more sensitive approach to setting rental levels.

³²⁴ Regulations, *supra* note 318, chapter 3, ss. 15 et seq.

As noted in the tenure section, a storage reservoir may be operated for a test period for up to a year. Section 72 of the regulations prescribes the information and test program that a licensee must provide in support of its application.

8.5 Holdout issues

Since for all practical purposes it would appear as if all storage rights are vested in the province, there are unlikely to be holdout issues where a private owner of storage refuses to participate. But that still leaves open the question of surface rights. Both the exploration licence provisions and the lease provisions of the *Act* deal with the question of access. Thus, ss.170 and 200 provide that the licensee\lessee respectively shall have access to the relevant lands where the lands are unalienated (by lease or sale), but where there is a private interest, access rights can only be exercised in accordance with s.235 which provides:

The holder of mining rights or the owner of mineral substances may acquire, by agreement or by expropriation, any property permitting access to or necessary for the performance of exploration work or mining operations on the land granted or alienated by the State for purposes other than mining purposes

No holder of mining rights or owner of mineral substances may exercise his right of access to the parcel of land or his right to perform exploration work or mining operations on land leased by the State for purposes other than mining purposes or on lands under an exclusive lease to mine surface mineral substances unless he obtains the lessee's consent or pays compensation to him. If there is no agreement on the amount of compensation, it will be fixed by the competent court.....

Two comments are in order. First, there might be a threshold question as to whether a storage licensee\lessee can take advantage of this section. Elsewhere the *Act* seems to

distinguish between exploration and mining operations and storage operations. On the other hand, the access provisions referred to above are generic and seem to contemplate all operations, including brine and storage operations as well hydrocarbon production operations. This looks like a situation in which the approach of adding on a new form of tenure to the existing suite of tenures dealt with in the *Act* was not fully tracked through into the expropriation and compensation provision.

Second, the section does provide a procedure to obtain access from the holdout surface owner but, as a court-based system, it seems more cumbersome than the surface rights procedures of the western provinces.

The *Act* contains one extraordinary provision dealing with a potential resource use conflict that might exist between a form of tenure known as a lease to use gas and other forms of tenure under the *Act*. In addition to a conventional hydrocarbon production lease, the *Act* also contemplates a “lease to use natural gas”.³²⁵ This seems to be a very limited form of household/farm domestic use tenure and not a commercial tenure.³²⁶ However, s.190 provides that:

The Minister may cancel a lease to use natural gas where he grants a lease to produce petroleum and natural gas, a lease to produce brine or a lease to operate an underground reservoir in respect of the parcel of land containing the well.

The lessee under the latter lease shall pay to the person whose lease to use natural gas has been cancelled compensation based on the investments made to produce natural gas and a lump sum computed as prescribed by regulation [emphasis supplied].

³²⁵ Division XII, ss. 185 et seq.

³²⁶ A gas use lessee (s.189) “may use the natural gas only to meet the energy requirements of his residence”.

We can hardly expect this provision to be widely used but it does show generally that narrow private rights may be made subordinate not only to broader public interests but also to private interests that are presumptively wealth enhancing.

8.6 Conclusions

Quebec has elected to take the same approach to storage rights as it has taken with respect to minerals, including oil and gas, and to vest all such rights in the state (subject to some very limited grandparented exceptions). The legislation (the *Mining Act*) provides for a two step exploration and lease tenure scheme for storage which seems to track (perhaps somewhat slavishly) the two stage tenure scheme for hydrocarbons. As in some other jurisdictions (e.g. Manitoba), the *Mining Act* serves as both a disposition statute and as a conservation\regulatory statute. Since storage rights are vested in the government there are no storage holdout problems that need resolution; however, there is some possibility that the legislation needs to be amended to ensure that storage operators can access the surface rights provisions of the *Mining Act*.

9.0 NEW BRUNSWICK

9.1 Introduction

New Brunswick currently has one salt cavern storage project under development with a projected in-service date of 2011 – 2012 and with 4.0 bcf working gas capacity.³²⁷ The province's position on the ownership of storage rights is crystal clear; all storage is vested in the Crown. As a corollary to this, the province has a disposition system in place, and, as the sole owner of storage sites, the province does not need legislation to deal with holdout problems.

9.2 Crown ownership and disposition of storage rights

New Brunswick moved to vest storage sites in the Crown as recently as 1999 by way of an amendment to the *Underground Storage Act* (the *Act* was originally introduced in 1978³²⁸) which now provides as follows:

2.1(1) Every site in the Province suitable for constructing or operating an underground storage facility is hereby declared to be, and to have been at all times prior hereto, property separate from the soil and vested in the Crown in the right of the Province.

At the same time, the province also made it clear that this vesting did not give rise to any claim to compensation:

2.1(2) No compensation is payable to any person, municipality or rural community as a result of the declaration in subsection 2.1(1).

³²⁷ The project is being developed by Corridor Resources, online: <<http://www.corridor.ca/oil-gas-exploration/natural-gas-storage-underground-storage-project.html#project-description>>.

³²⁸ *Underground Storage Act*, S.N.B. 1978, c. U-1.1. Previous to the amendment, the Act did not address the issue of storage reservoir ownership.

The *Act* does not define the term “site” or the term “suitable”³²⁹ but it does define the term “underground storage facility” as follows:

a naturally occurring underground cavity or system of cavities or pores, or an underground space created by some external means, that may be used for the storage of fluids but does not include fabricated containers that may be used for storage purposes.

The definition embraces both depleted reservoirs and salt caverns. The main vesting provision is declaratory. It speaks both prospectively and retroactively and it effectively severs the property in the storage “site” from the “soil”. The effect of the provision must be that there can be no privately owned storage rights in the province and that all rights to use Crown-owned storage must therefore be obtained from the Crown as authorized under the terms of the *Underground Storage Act* (the *USA*) The *USA* contemplates a two-stage tenure scheme, an exploration licence (a three year non-renewable term to evaluate “underground storage potential for fluids”)³³⁰ and a storage lease (an initial term of ten years renewable for like terms of ten years on application). The regulations provide for a rental of \$0.50 cents per hectare while the property is held on an exploration licence. Section 12(4) of the *USA* provides that a lessee shall pay “such rentals as are prescribed by legislation” but the regulations do not currently deal with leases. Consequently it is not possible to ascertain whether the province will adopt a flat acreage based fee (as is the case in the western provinces) or a fee based on storage capacity (as seems to be the approach of Quebec and Ontario).

This broad Crown vesting provision should serve to eliminate most holdout problems

³²⁹ Neither does the *Act* define the term “storage” which leaves open the question of whether the term could be read to include disposal as in the context of CCS.

³³⁰ *USA, ibid.*, s. 7(3); “fluids” is defined as meaning “compressed air, any gas or liquid or such other matter, as is designated by regulation, including, without limiting the foregoing, oil and natural gas as defined by the *Oil and Natural Gas Act*, but does not include nuclear wastes in any form”. This provision seems wide enough to allow the Lieutenant Governor in Council to designate CO₂ as a fluid for the purposes of the Act. No such regulations have been passed; the only regulations (Fees Regulation – Underground Storage Act, N.B. Reg. 2005-5) deals with fees and work requirements for the exploration licence phase.

associated with developing a natural gas storage site (since there can be no competing claims from another fee simple owner of storage rights) but it still leaves outstanding the question of surface rights and the possibility of competing interests held by an oil and gas rights lessee.

9.3 Surface Rights

Surface rights are readily dealt with. Section 9 of the *Act* distinguishes between Crown lands and “lands other than Crown lands”. For Crown lands, ss.9(1) and (3) afford the licensee the power to “enter on and explore Crown lands for the purposes of evaluating underground storage potential for fluids” subject to the payment of compensation for “any loss or damage”. For non-Crown lands however, the *Act* provides that there can be no entry without consent of the owner, tenant, or occupant or by obtaining a “special order” from the Minister and again subject to payment for any “loss or damage”.

9.4 Resource use conflicts

In New Brunswick, oil and gas rights are similarly declared to be vested in the province in terms that parallel the vesting provisions for storage rights:³³¹

3 All oil and natural gas is hereby declared to be, and to have been at all times prior hereto, property separate from the soil and vested in the Crown in the right of the Province.

This section seems to preclude the possibility of private ownership of oil and gas rights in New Brunswick but it does leave open the possibility of a conflict between the holder of Crown storage rights and the holder of rights under the *Oil and Natural Gas Act*. The *Underground Storage Act* tries to deal with this potential problem principally by preferring the holder of the oil and gas rights. There are two provisions of the *USA* that

³³¹ *Oil and Natural Gas Act*, S.N.B. 1976, c. O-2.1. There is, however, no provision dealing with compensation.

deal with this hierarchy. First, s.9(5) imposes on an underground storage exploration licensee the duty not to interfere with a broad category of other interests as follows:

A person performing exploration operations under this Act shall not interfere with the operations of any licensee or lessee under the *Oil and Natural Gas Act*, the *Bituminous Shale Act* or the *Quarriable Substances Act*, any holder of a mining or mineral claim or mining lease under the *Mining Act*, any holder of a mining licence or mining lease continued under the *Mining Act*, or any holder of a mining right granted under the *Ownership of Minerals Act* or section 25 of the *Mining Act* or any predecessor of that section for the location upon which the operations are conducted.

There is no similar provision with respect to storage leases although the Crown might achieve a similar result through s.12(4) of the *Act* which provides that any lease or renewal shall be subject to any special conditions imposed by the Minister.

Second, s.12.1 of the *USA* (added in 1999) provides that:

A person who holds a valid and subsisting oil and natural gas lease issued under the *Oil and Natural Gas Act* is entitled to receive a storage lease for the formation in respect of which it holds the oil and natural gas lease, provided that it complies with the provisions of this Act in all other respects.

This provision gives the holder of a production lease a preferential right to receive a storage lease.

9.5 Conclusions in relation to New Brunswick

New Brunswick has had storage legislation in place since 1978 but is only now beginning

to develop its first storage project. The provincial ownership rules are clear and simple; all storage rights are vested in the Crown. There are therefore no private owner holdout problems that need to be dealt with other than with respect to surface owners.

10.0 NOVA SCOTIA

10.1 Introduction

Nova Scotia has one cavern storage project, the Alton Project, currently under development.³³² Once developed, the storage will be connected to the Halifax Lateral of the Maritime and Northeast Pipeline's natural gas transmission system, potentially thereby providing service to customers in both Canada and the United States.

10.2 Ownership of storage rights and the Crown disposition system

The Nova Scotia storage regime is similar to that in force in New Brunswick although Nova Scotia's *Underground Hydrocarbons Storage Act*³³³ (*UHSA*) lacks a clear Crown vesting position. Arguably, however, the *UHSA* is premised on the assumption that storage rights are already vested in the Crown by virtue of either the *Mineral Resources Act*³³⁴ (*MRA*) or the *Petroleum Resources Act (PRA)*.³³⁵ The vesting clause in the *MRA* reads as follows:

4 (1) All minerals are reserved to the Crown and the Crown owns all minerals in or upon land in the Province and the right to explore for, work and remove those minerals.

(2) Every grant of Crown lands made on or after the twenty-second day of April, 1910, shall, whether the same is so expressed therein or not, be construed and held to reserve to the Crown all the minerals in or upon the land so granted and the right to explore for, work and remove those minerals.

³³² Details are available as part of the Environmental Impact Assessment conducted for the project, see online: <<https://www.gov.ns.ca/nse/ea/AltonNaturalGasStorage.asp>>.

³³³ S.N.S. 2001, c.37.

³³⁴ S.N.S. 1990, c. 18. For an interesting discussion of this section in the context of compensation that might be payable to a surface owner where there is a Crown taking to allow development of a silica deposit see *Re Shaw Group*, 2001 NSUAR 19.

³³⁵ R.S.N.S. 1989, c.342.

(3) Every grant of Crown lands made at any time on or before the twenty-second day of April, 1910, shall, whether the same is so expressed therein or not, and notwithstanding the provisions of such conveyance or of any enactment or law, be construed and held to have reserved to the Crown all the minerals in or upon the land so granted and the right to explore for, work and remove those minerals.

(4) Every person who has acquired Crown lands by conveyance or prescription is deemed not to have acquired the minerals in or upon the Crown lands or the right to explore for, work and remove those minerals and no person is entitled to acquire minerals or such right by conveyance or prescription.

The similar vesting clause in the *PRA* also emphasizes the vesting of the substance (petroleum, defined to include natural gas as well) rather than the pore space:

10 (1) All petroleum located in or under Nova Scotia lands is and is deemed always to have been vested in the Province and every grant made by the Crown shall be construed and held to reserve all the petroleum in the lands so granted.

The *UHSA* creates a two stage tenure system consisting of a hydrocarbon storage area licence to evaluate the potential of the relevant lands (ss.8 – 12, a one year term renewable up to four times) and a hydrocarbon-storage lease (ss. 15 – 16, a twenty year term, renewable). The regulations specify that an applicant for a licence must already hold a mineral right for salt and potash under the *Mineral Resources Act*³³⁶ and must have obtained a written statement from the Minister “approving the use of the geological

³³⁶ Underground Hydrocarbons Storage Regulations, N.S. Reg. 148/2002 [UHS Regulations]. Note that the Code of Practice Respecting the Underground Storage of Hydrocarbons, December 2002 <<http://www.gov.ns.ca/energy/resources/spps/codes-guidelines/Code-of-Practice-Underground-Hydrocarbons.pdf>> at 4 indicates that “The initial exploration and definition of suitable areas for underground hydrocarbon storage in salt formations must be carried out under a Special License for exploration for salt issued under the *Mineral Resources Act*.”

formation for the development of a storage reservoir”.³³⁷ The lease gives the lessee (s.15(4)) “the exclusive right to develop and utilize the storage area for the injection, storage or withdrawal of hydrocarbons in a storage reservoir”.

A licence is available on application, apparently on a first-come first-served basis; there is no provision for nominating and bidding.³³⁸ A licensee pays rent of \$2.50 ha and a lessee rent of \$5.00 ha.³³⁹ The application for a licence must include a proposal for a work program designed “to determine the suitability of a storage area for the future development of a storage reservoir”,³⁴⁰ and involving expenditures of \$125 ha over the duration of the licence. More detailed information must accompany an application for a lease including information about all wells drilled and about fresh water strata,³⁴¹ and the applicant must also file a development program which “describes the milestone events in the development of a storage reservoir in the storage area”.³⁴² A lessee must apply for an approval to construct a storage reservoir from the Nova Scotia Utility Review Board within two years of obtaining a lease.

10.3 Surface rights and other resource conflicts

The *UHSA* deals with surface rights issues by providing that a licensee may not enter onto the relevant lands without the consent of the owner “or person entitled to grant consent” or, in the case of Crown lands, the consent of the Minister responsible for those lands (s.12). Absent consent, the licensee may apply to the Minister for a surface rights permit which the Minister may grant subject to terms and conditions and the payment of compensation (s.13).³⁴³ The *Act* provides that there is no appeal from the issuance of a surface rights permit or the amount of compensation payable. A separate section (s.19) deals with compensation for damage (although this only applies to activities undertaken

³³⁷ *UHSA*, s.8(2) and UHS Regulations, *ibid.*, s.4. Presumably this is simply an approval in principle that the use of the formation for these purposes will not cause an irrevocable resource use conflict.

³³⁸ UHS Regulations, *supra* note 336, ss. 4 et seq.

³³⁹ UHS Regulations, *ibid.*, s.13.

³⁴⁰ UHS Regulations, *ibid.*, s.19(1).

³⁴¹ UHS Regulations, *ibid.*, s.20.

³⁴² UHS Regulations, *ibid.*, s.21(1).

³⁴³ There is further detail in s.28 of the UHS Regulations, *supra* note 336.

pursuant to a lease rather than pursuant to the exploration licence).

The *Act* deals with the potential for conflict between a storage operation and other interest owners through s.12 which provides that no application for a licence shall be accepted for areas that are subject to leases under the *Mineral Resources Act*, production agreements under the *Petroleum Resources Act*, or areas for which there is in force a prohibition on exploration or development activity.³⁴⁴ Similarly, (s.12) the holder of a storage licence shall not undertake work on lands subject to a licence under the *MRA* or an agreement under the *PRA* “without the consent of the right holder of the licence or agreement”. Where such a party refuses consent, s.13(2)(c) suggests that the holder of the hydrocarbon licence will be able to access the surface rights provisions discussed in the previous paragraph.

We suggested above that, while the *Act* does not contain a comprehensive vesting provision like that contained in the New Brunswick legislation, the *Act* proceeds on the basis that the property rights with respect to storage are already vested in the Crown. Thus the *Act* treats the entire province as open for the granting of licences (subject to the limitation expressed in the previous paragraph) and seemingly for leases as well. However, the *Act* also contains two sections³⁴⁵ which provide for compulsory vesting orders to be made by the Minister on application of a lessee with respect to any land or interest in land, or any right of way or easement that might be required for the lessee’s purposes. It is our view that these provisions deal with ancillary surface rights (e.g compressor stations) that may be required, and not with the storage rights themselves, but the point may not be completely clear. The arguments in favour of the proposed interpretation are at least three. The first is that it is unnecessary to apply the provision to the storage rights themselves if, as argued above, these rights are already vested in the

³⁴⁴ See also s.8(2) which provides that before the Minister responsible for this *Act* proceeds with an application for a licence the Minister for Natural Resources must first approve “the use of the geological formation for the development of a storage reservoir”. In addition, s.16 of the UHS Regulations, *supra* note 336, provides that the Minister may refuse to grant a licence or lease “if the Minister decides that granting the licence or lease could threaten or adversely affect an agreement, licence or lease issued under the *Mineral Resources Act* or the *Petroleum Resources Act*.”

³⁴⁵ Section 17 is headed “vesting orders” and s.18 provides that the *Expropriation Act* will apply to lands taken under the vesting order section.

Crown. The second is that the right to apply for a vesting order is only available to a lessee. The Crown could hardly grant the exclusive rights represented by such a lease if it were not already the owner. And third, the regulations in dealing with this issue define the lands that are to be acquired or made the subject of an order as, for a licensee, those lands required “for the purpose of passing over, entering upon or working the lands covered by the licence”.³⁴⁶

10.4 Regulation of storage projects

The regulation of storage projects falls within the jurisdiction of the Nova Scotia Utility Review Board. Thus, s.22 of the *UHSA* provides that the holder of a storage area lease needs the Board’s approval in order to “construct and operate a storage reservoir” and the Board’s approval is also required (s.24) to suspend or discontinue storage operations. The province has also developed its own Code of Practice for Underground Storage of Hydrocarbons.³⁴⁷ The Code is based on that of the Canadian Standards Association Code.

The Alton Natural Gas Storage Project was also subject to review under the terms of the province’s *Environment Act*³⁴⁸ and Environmental Assessment Regulations³⁴⁹ on the basis that it was “A storage facility that has a total storage capacity of over 5000 m³ and is intended to hold liquid or gaseous substances, such as hydrocarbons or chemicals other than water” within the meaning of the regulations.³⁵⁰

10.5 Conclusions with respect to Nova Scotia

The natural gas storage industry in Nova Scotia is just beginning to develop. The province has adopted free-standing storage disposition legislation. That legislation seems to be premised on the idea that all storage rights are already vested in the Crown by virtue

³⁴⁶ UHS Regulations, *supra* note 336, s.28(1).

³⁴⁷ Code of Practice Respecting the Underground Storage of Hydrocarbons, December 2002, *supra* note 336. The Code provides that it does not apply to the storage of hydrocarbons in aquifers or to the storage of other gases or fluids.

³⁴⁸ S.N.S. 1994-95, c.1.

³⁴⁹ N.S. Reg. 26/95.

³⁵⁰ *Ibid.*, Schedule A.

of Crown vesting provisions in provincial mining and petroleum legislation. It would certainly be anomalous if mining and petroleum rights were vested in the Crown but not storage rights; but still, this might usefully be clarified. The disposition legislation provides for two forms of tenure, a storage exploration tenure and a long term lease tenure for continuing operations.

11.0 OTHER JURISDICTIONS

This part of the paper briefly canvasses the position in the two provincial jurisdictions (Newfoundland and Prince Edward Island) which do not have a natural gas storage regime. It also looks briefly at the relevant rules for Yukon, federal oil and gas lands in the Northwest Territories and Nunavut and the offshore. The section concludes by examining the federal role in natural gas storage.

11.1 Newfoundland and Prince Edward Island

As indicated in the introduction to this paper, there is no provision in either Newfoundland or Prince Edward Island³⁵¹ for natural gas storage operations.³⁵² The issue is not dealt with in the relevant oil and gas legislation³⁵³ and there is no free-standing legislation dealing with storage. The oil and gas legislation in PEI contains a comprehensive Crown vesting clause vesting “all oil and natural gas whatsoever” in Her Majesty but makes no special mention of pore space ownership or storage rights.³⁵⁴ The vesting clause in the Newfoundland legislation is somewhat less comprehensive insofar as it carves out of the vesting any express statutorily authorized Crown grant made before April 15 1965,³⁵⁵ but vesting is also expressly confined to the petroleum substance insofar as “Petroleum is declared to be and to have always been property separate

³⁵¹ We understand from Ronald Estabrooks, (telephone conversation, August 26, 2009) Energy Advisor, Department of Environment, Energy and Forestry, (Energy and Minerals Division) that there have been no “serious” inquiries regarding potential storage projects. P.E.I. may not have workable geological conditions for storage development: there are a number of salt formations but these are typically too deep for economical development as storage. It is also suggested that there is currently no economic need since P.E.I. is close to the Maritimes and Northeast pipeline. There may still be economic arguments in favour of storage given that storage may allow a utility to make more efficient use of its pipeline capacity.

³⁵² There is also no provision for natural gas storage in the *Indian Oil and Gas Act*, R.S.C. 1985, c. I-7 or the *Indian Oil and Gas Regulations*, 1995 S.O.R. 94/7453. This is a surprising omission.

³⁵³ *Oil and Natural Gas Act*, R.S.P.E.I. 1988, c. 0-5; *Petroleum and Natural Gas Act*, R.S.N.L.1990, c. P-10.

³⁵⁴ *Oil and Natural Gas Act*, *ibid.*, s.3.

³⁵⁵ *Petroleum and Natural Gas Act*, *supra* note 353, s.3. See also LIA Agreement, January 2005, between the Labrador Inuit Association, Canada, Newfoundland and Labrador, regarding land ownership, resource sharing, and self-government. Under that Agreement (Chapter 4) Inuit own surface lands and an undivided interest in subsurface resources. The surface title is defined in such a way as to include geothermal resources. The agreement does not specifically deal with storage rights. For the ext of the Agreement see <http://www.ainc-inac.gc.ca/al/ldc/ccl/fagr/nl-eng.asp>

from the soil.” This latter qualification would seem to make it very difficult to argue that the Crown vesting extended to storage rights.

11.2 Yukon

It is likely that storage rights in Yukon may be owned either by the territorial government or by First Nations at least in relation to those First Nation lands that include mineral title.³⁵⁶ Yukon’s oil and gas legislation³⁵⁷ contemplates the creation of a natural gas storage regime but such a regime has yet to be created. Section 16 of the Yukon *Oil and Gas Act* makes it clear that exploration and production tenures do not carry with them storage rights:

An oil and gas disposition does not grant the right to store oil or gas or any other substance in an underground formation in the location of the disposition

The broad regulation making power of s.65 contemplates that the Commissioner in Executive Council may make regulations with respect to, *inter alia*, subsurface storage and, on the regulatory side, s.73(1)(c) provides that no person may commence a storage operation without the approval of the conservation authority. The only production in Yukon at present is in the south east and that gas is shipped into the Spectra system.

³⁵⁶ For the terms of Yukon First Nation Final Agreement, see the agreements page of the Council of Yukon First Nations website, online: <<http://www.cyfn.ca/ouragreements>>.

³⁵⁷ *Oil and Gas Act*, R.S.Y. 2002, c.162. The *Act* is both a disposition statute and a regulatory statute. The disposition parts of the statute only apply to Crown lands and would not apply, for example, to First Nation lands. The regulatory and conservation provisions of the statute (e.g. s.73) would be laws of general application that would apply throughout Yukon unless a First Nation occupied the field in relation to its own lands.

11.3 The federal regime for Nunavut, Northwest Territories (and the east coast offshore)

The federal oil and gas legislation for the Northwest Territories and Nunavut, the *Canada Petroleum Resources Act*,³⁵⁸ applies to lands that belong to Her Majesty in right of Canada, or in respect of which Her Majesty in right of Canada has the right to dispose of or exploit the natural resources.³⁵⁹ The legislation does not apply to petroleum resources held by Inuit or First Nations pursuant to the terms of land claim agreements, and presumably, within these lands, any storage rights are vested in the relevant group at least where the First Nation or Inuit own the mineral title.³⁶⁰ The *Act* contemplates a separate form of tenure for storage operations. Thus, s.43 provides that:

43. (1) The Minister may, subject to any terms and conditions the Minister considers appropriate, issue a licence for the purpose of subsurface storage of petroleum or any other substance approved by the Minister in frontier lands at depths greater than twenty metres.

(2) No frontier lands shall be used for a purpose referred to in subsection (1) without a licence referred to therein.

The reciprocal federal/provincial offshore legislation on the east coast contains a similar provision.³⁶¹

³⁵⁸ R.S.C. 1985, 2nd supp., c. 36.

³⁵⁹ See the definition of frontier lands, *CPRA*, *ibid*.

³⁶⁰ For these agreements, see the INAC agreements webpage, online: <<http://www.ainc-inac.gc.ca/al/ldc/ccl/fagr/nwt-eng.asp>>.

³⁶¹ *Canada-Newfoundland Atlantic Accord Implementation Act*, S.C. 1987, c. 3, s.86, and *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act* S.C. 1988, c. 28, s.89. And on Crown vesting in the offshore see the *Oceans Act*, S.C. 1996, c. 31, s.8:

8. (1) For greater certainty, in any area of the sea not within a province, the seabed and subsoil below the internal waters of Canada and the territorial sea of Canada are vested in Her Majesty in right of Canada. (2) Nothing in this section abrogates or derogates from any legal right or interest held before February 4, 1991.

The federal regulatory statute for the NWT and Nunavut, the *Canada Oil and Gas Operations Act*,³⁶² does not contain express provisions for the regulation and approval of natural gas storage projects.

11.4 Gas storage projects as interprovincial works or undertakings

The discussion to this point in the paper has been organized along geographical lines, jurisdiction by jurisdiction. The discussion assumes that jurisdiction over natural gas storage projects will be largely, if not exclusively, provincial (except to the extent that we need to consider federal property whether in the territories or within a province). This is an entirely appropriate assumption. The determination of who owns storage rights (as between the Crown, mineral owners, and surface owners) is clearly a matter of property and civil rights and a part of provincial jurisdiction under s. 92(13) of the *Constitution Act, 1867*. The same would be true of Crown disposition legislation (s.92(5) or s.92A) and legislation dealing with the regulatory approval of storage projects.

To the extent that storage rights in a province may be federally owned (e.g. within a national park), the federal government's jurisdiction might be engaged, but it is also possible that the federal government might obtain jurisdiction over natural gas storage operations by virtue of its jurisdiction over federal works and undertakings. The point is illustrated by the Federal Court of Appeal's decision in *Dome Petroleum Ltd v. National Energy Board*.³⁶³ The case involved salt caverns used for the storage of ethane and ethylene liquids rather than natural gas, but the principles behind the decision are, with some reservations, equally applicable to natural gas storage which might be operated in conjunction with an interprovincial pipeline.³⁶⁴

³⁶² R.C.S. 1985, c. O-7.

³⁶³ (1987) 73 NR 135.

³⁶⁴ There are perhaps some physical differences that need to be emphasized. For example, the evidence presented in this case suggested that, to the extent that there was an industry practice of pipeline operators providing storage for liquids, "it is usually limited to the short-term storage that is necessary to allow time to remove the product before the arrival of another batch of the same product." See National Energy Board, *National Energy Board, Reasons for Decision, in the Matter of a Public Hearing Into the Matter of Certain Terminal, Storage and Related Facilities Owned or Leased and Operated by Dome Petroleum Limited in Windsor, Ontario* (Ottawa: Supply and Services Canada, January 1986) at 26 [NEB Decision]. It is clear that the storage was highly integrated with the operation of the pipeline.

The case involved the Cochin pipeline system which was designed to ship natural gas liquids (ethane, ethylene, butane and propane) in batches from Fort Saskatchewan, Alberta, to the east. The pipeline was federally regulated by the National Energy Board and tolls on the Canadian parts of the pipeline were set by the Board under the terms of the *National Energy Board Act*.³⁶⁵ The pipeline crosses into the United States in south east Saskatchewan and crosses back into Canada at Windsor, terminating in Sarnia. There were a number of delivery points en route where the pipeline operators provided appropriate storage facilities for deliveries.³⁶⁶ The pipeline operators proposed to add a delivery point for propane at Windsor and this gave rise to the question as to whether shippers on the pipeline might also have regulated access to salt cavern storage owned by the pipeline operators (through subsidiaries) at the Windsor terminal. It appears from the record that the facilities had been constructed and operated to this point under the terms of provincial legislation, but that no steps had been taken by the province, through the Ontario Energy Board, to regulate access or tariffs.³⁶⁷

The NEB, on the basis of an inquiry report conducted by a single member, concluded that it should regulate access to these facilities and that it was constitutionally able to assert jurisdiction because the storage caverns and related facilities were developed to enable the system to move ethane which was the core federal undertaking: “The ethane storage caverns and related facilities have always been dedicated to serving this purpose and have never served any other purpose. These facilities are essential to the core federal undertaking”.³⁶⁸ The Board supported its decision by also noting “the degree of physical connection and operational integration between the Ethane Shippers’ facilities and the pipeline, as well as the corporate interrelationship between the owners of the ethane storage facilities and of the pipeline”.³⁶⁹ Thus, even though there were arguably two distinct functions, transportation and storage, the Board assumed jurisdiction. The Board

³⁶⁵ Now R.S.C. 1985, c. N-7.

³⁶⁶ The storage facilities in the US were regulated by FERC (NEB Decision, *supra* 364 at 6). They were part of the service offered by the pipeline owners in order to attract business.

³⁶⁷ NEB Decision, *ibid.* at 26.

³⁶⁸ NEB Decision, *ibid.* at 35. The Board decision appears as an appendix to Presiding Member J.R. Hardie’s report.

³⁶⁹ *Ibid.*

was also able to do so because the definition of the term “pipeline” then, as now, also included storage.³⁷⁰

On appeal, the Federal Court of Appeal declined to interfere with the Board’s decision. On its understanding of the facts, the terminalling facilities were provided by the owner of the transportation undertaking and were therefore “part and parcel of that undertaking” and “an integral and essential part” of the Cochin system.³⁷¹

³⁷⁰ The current definition reads as follows: “‘pipeline’ means a line that is used or to be used for the transmission of oil, gas or any other commodity and that connects a province with any other province or provinces or extends beyond the limits of a province and includes all branches, extensions, tanks, reservoirs, storage facilities, pumps, racks, compressors, loading facilities” (*National Energy Board Act*, R.S.C. 1985, c. N-7, s.2).

³⁷¹ *Supra* note 363 at para. 18.

12.0 CONCLUSIONS

The main body of this working paper is organized along jurisdictional lines covering each of the provinces that has developed gas storage legislation and omitting the two that have not (Newfoundland and Prince Edward Island). Each of the subsections of the working paper contains a brief summary for that jurisdiction. Rather than repeating those summaries here we have tried to organize this conclusion around the themes introduced in the introduction, while adding some details. Hence, this conclusion addresses the following matters: (1) ownership of storage rights, (2) the treatment of holdout problems where storage rights are privately owned, (3) disposition rules for government owned storage rights, (4) resource sterilization, and (5) regulation.

Who owns natural gas storage rights?

The literature on the ownership of natural gas storage rights in Canada suggests that there is some uncertainty as to who owns pore space for storage purposes. Is pore space owned by the owner of the mineral estate or is it owned by the owner of the surface estate? Given this uncertainty, governments in Canada have responded in several ways.

First, some governments have responded by vesting natural gas storage rights in the Crown or the government. This serves both to clarify and simplify the ownership position. A prospective storage operator need only deal with one owner and that owner is a public owner. This approach also serves to resolve the potential holdout problems that may arise when a single owner in a fragmented ownership situation refuses to agree to the assembly of the properties required for a storage project at the price offered, or indeed at any price. This is the position taken in Quebec and New Brunswick: both have elected to vest pore space and storage rights in the government. The position is not quite as clear in Nova Scotia, although the provincial storage legislation seems to proceed on the basis that storage rights are already vested in the Crown by virtue of provincial petroleum or mineral legislation.

Second, a single jurisdiction, Alberta, has chosen to enact legislation to clarify the ownership position and, in the course of doing so, has vested natural gas storage rights with the owners of petroleum and natural gas rights. Thus, in Alberta, storage rights may be owned either by the Crown or by private parties depending upon the background mineral titles. Since about 80% of mineral rights in Alberta are owned by the provincial Crown this makes Crown ownership dominant though certainly not exclusive. One still encounters many townships in the settled parts of the province with fragmented (Crown/freehold) ownership patterns. In sum, the Alberta legislation has clarified the matter of ownership but it does not completely resolve matters from the perspective of a prospective storage operator seeking to assemble the necessary block of rights. There is still the potential for holdout problems.

A third group of provinces has not seen the need to clarify the ownership rules for natural gas storage, although each seems to proceed on the *assumption* that storage rights follow mineral ownership and that, as a result, storage may be vested in the Crown or a private owner depending on the background mineral ownership. This is the case in Ontario, Manitoba, and Saskatchewan.

Fourth, one other jurisdiction, British Columbia, proceeds on the premise that ownership of natural gas storage rights is unclear and that such rights may be owned by the surface owner or the mineral rights owner. British Columbia's response to this acknowledged uncertainty is to create a procedure for vesting storage rights in the Crown, subject to the payment of compensation where a private owner can show that it has been divested of its ownership rights. The BC model provides certainty to an operator proposing to assemble a storage project, but the model delivers that certainty on a case-by-case basis rather than by the enactment of a global rule (as in Alberta) that vests storage rights in one category of owner. The BC model also puts the onus on the private party who claims compensation on the grounds that it has been divested of its storage by the operation of the scheme to establish that claim. This is the case whether that party presents its claim on the basis of its ownership of surface rights or on the basis of its ownership of mineral rights.

Dealing with holdouts

A storage operator needs to assemble and acquire all of the interests in the target storage formation. If it fails to do so, the operator may, at worst, not be able to proceed with its project; at best it runs the risk of another party producing its stored gas. A storage operator will also require surface access for injection wells and other facilities. In most cases we can expect the operator to proceed by way of contract, storage agreement, lease, or voluntary unitization to acquire the necessary rights – all with the necessary consent of the relevant owners of storage rights (whether private or public). But this may not always be possible. It may not be possible to trace owners; or an owner may simply not consent, either at the offer price, or at all. For example, the owner may simply not like the idea of gas storage under his or her lands.

Faced with this reality, some jurisdictions recognize that it may be appropriate to allow the operator to acquire the necessary rights compulsorily where negotiations fail. For most jurisdictions this is fairly straightforward in relation to any surface rights that an operator may require, but the practice suggests that it is much more contentious in relation to the storage rights themselves.

In relation to surface rights, the western jurisdictions generally have a surface rights regime either as stand-alone legislation (Alberta, Saskatchewan, and Manitoba) or as part of petroleum and natural gas legislation (British Columbia). Generally, these jurisdictions have found it fairly easy to amend this legislation over the years to accommodate new activities as they develop, including injection activities for enhanced oil recovery operations and gas storage operations. This is clearly the case for British Columbia and Alberta. Nova Scotia prescribes the surface rights access and compensation regime within the storage legislation itself, as do Ontario (in the *Ontario Energy Board Act*) and New Brunswick. In Saskatchewan and Quebec however it is less clear that the legislation has been amended to afford a storage operator the same access to surface rights legislation (or its equivalent) as would be available for exploration and production operations.

The picture is considerably more diverse in relation to the storage rights themselves. First, legislative measures to deal with holdouts are unnecessary in those jurisdictions that vest storage rights in the government (New Brunswick and Quebec), in any jurisdiction that seems to assume that it has done so (Nova Scotia), or in any jurisdiction which has a means of vesting storage rights in the Crown on a case-by-case basis (British Columbia). But, of those jurisdictions that contemplate private ownership of storage rights, only one, Ontario, has addressed the problem of how an operator may gain access to storage rights owned by a private party that is holding out and which rights are necessary to complete the storage unit.

Ontario has the requisite legislation and has used it, but none of the other provinces (Alberta, Saskatchewan, and Manitoba) have specific legislation on the books, and we have concluded in this paper that existing provisions dealing with such matters as pooling and unitization do not, as currently framed, permit an operator to compulsorily acquire storage rights. The Ontario legislation provides a compensation regime that allows an operator to compulsorily acquire storage rights from a private owner. Compensation appears to be payable on the basis of the “going-rate” in the pool or the region, and is calculated on the basis of a per hectare fee rather than on the basis of storage capacity. British Columbia also provides for the possibility of compensation to the owner of private storage rights whose rights may be affected by a Crown vesting order. Both Ontario and British Columbia provide that the amount of compensation is to be determined by an expert board rather than the courts: in Ontario, the Ontario Energy Board (OEB); and in British Columbia, the Mediation and Arbitration Board (the provincial surface rights board). While the OEB has decided such cases, no such cases have been brought before the BC Board. The Ontario legislation gives the OEB very general directions in terms of determining compensation (just and equitable compensation for any damage and for any rights acquired). The BC legislation adopts a listing model that is typical of western surface rights legislation and seems ill-suited for determining compensation for the loss of storage rights.

How does the government dispose of its natural gas storage rights?

Where natural gas storage rights are vested in government -- either by virtue of a general Crown vesting, as in New Brunswick and Quebec, or by virtue of some other element of its title (e.g. in Alberta, Crown ownership of petroleum and natural gas rights) -- the government needs to have a disposition regime for disposing of that category of resource rights, in much the same way as the government develops a scheme to dispose of rights to other resources such as petroleum and natural gas.

Governments appear to have adopted two distinct approaches to this challenge. Most governments have adopted a specific tenure scheme for the acquisition of storage rights. Typically this is a two-step tenure, with some form of a short term exploration tenure and then a longer holding tenure. In some cases this may take the form of dedicated gas storage legislation. This is the case, for example, in each of New Brunswick and Nova Scotia, and was the case originally in British Columbia. However, most jurisdictions have elected to deal with tenure issues within the context of provincial petroleum or mining legislation as follows: British Columbia, the *Petroleum and Natural Gas Act*; Saskatchewan, the *Crown Minerals Act*; Manitoba, the *Oil and Gas Act*; Ontario, the *Mining Act* and the associated regulations; and Quebec, the *Mining Act* and the regulations. While most jurisdictions maintain a clear separation between the disposition of the storage right on the one hand and the regulation of the storage project on the other, Manitoba's approach seems conceptually confused insofar as a permit for a storage project under the *Oil and Gas Act* seems to serve as both the regulatory and the property authorization for the project. There is also some (more limited) overlapping of function in the Quebec model.

Alberta has taken a conceptually different approach and does not provide a distinct and stand-alone storage tenure. Rather, the Crown natural gas storage tenure grows out of an existing production tenure which the tenure holder extends as to both function (storage in addition to production) and duration (the tenure is continued by production and/or storage) by entering into a gas storage unit agreement with the Crown and other affected

parties. Alberta seems to have adopted this approach in recognition of the fact that the dominant mode of storage in that province is in depleted reservoirs. Certainly, this represents a very pragmatic response to the reality that a storage scheme in a depleted reservoir will have to take account of, and build upon, existing tenures.

Other jurisdictions also have to grapple with this reality even where, in theory, they have distinctive and stand-alone storage tenures. In managing the transition from production to storage, a jurisdiction will need to think about whether it is necessary for the tenure holder to acquire a new form of tenure and/or whether an existing tenure holder should have a preferential right to acquire a storage tenure. Most jurisdictions seem to accept (at least where the storage property is a depleted reservoir) that an operator will require overlapping production and storage tenure, if only because of the risk that the operator will produce some native gas for which it will be royalty liable and for which it will need a production tenure.

Alberta's scheme apparently handles this transition seamlessly. It seems messier in other jurisdictions. In British Columbia, for example, it is significant that the one active storage project (Aitken Creek) is not developed on the basis of a storage tenure but on the basis of an original production tenure combined with a scheme approval. A provincial policy paper in BC suggests that future storage projects will require both a production tenure and a storage tenure, and the injunction in the Quebec legislation and regulations that a storage operator cannot produce any more mineral substances than it injects will also likely prompt the storage operator, at least the risk averse storage operator, to acquire a production tenure as well as a storage tenure. Most if not all storage operations in Ontario seem to be dominated by privately owned storage tenures which have evolved from a variety of production leases and storage agreements that defy orderly classification. One jurisdiction (New Brunswick) proposes to deal with the transition from production to storage by giving the holder of the production tenure a right or a preferential right to receive a storage tenure, while the Nova Scotia legislation stipulates that a storage tenure will not be issued for areas that are under a production tenure.

The practice shows that governments charge for storage rights for publicly owned storage in different ways. First, governments may charge a rental for the storage tenure. This may be a flat rental. For example, British Columbia levies a flat rental of \$7.50 per ha per year, Nova Scotia fixes the lease rental at \$5.00 ha, while in Alberta and Saskatchewan it is \$3.50 per ha. Both Ontario and Quebec, however, contemplate that the rental should be based on the storage capacity of the property. In Ontario this will be the greater of the bid amount or 30 cents per thousand cubic metres, while the Quebec scheme reserves greater discretion to the Minister who may fix the rent for a storage lease based on the depth, thickness, extent and economic prospects of the underground reservoir. Second, it is possible that governments may dispose of storage rights by means of a bonus bidding system in the same way in which they dispose of production rights. The Ontario scheme provides for bonus bidding -- both cash, and, as noted above, bidding based on a proposed storage rental. In Alberta, bonus bidding is also the norm since storage rights begin as an exploration and production tenure and then roll over to a gas storage unit agreement. The original exploration and production tenure will almost invariably have been acquired at a Crown sale and on the basis of a bonus bid. However, it seems unlikely that the bidding party would have taken account of potential storage values when originally bidding on the property.

Resource sterilization

Development of a storage facility may sterilize the development of adjacent resources (or at least lead to resource use conflicts) and may engender safety concerns. Governments respond to this in several ways. First, where the government is disposing of storage rights it may take care to protect existing production interests. For example, Nova Scotia provides that the Minister shall not accept an application for an exploratory storage licence for areas that are subject to leases under the *Mineral Resources Act*, production agreements under the *Petroleum Resources Act*, or areas for which there is in force a prohibition on exploration or development activity. Second, governments and regulators may address these concerns at the regulatory stage where governments are approving storage projects. For example, a regulator may require that the applicant provide consents

from the mineral rights owners of offsetting acreage. This is the practice in Alberta through the Energy Resources Conservation Board and seems to be required in Saskatchewan as well. Governments and regulators have also discussed the need to reserve protective corridors around a project. Some regulators are uncomfortable with this idea, suggesting that it is up to the storage operator to identify its project boundaries and not transfer risk to the government or third parties. This seems to be the position in British Columbia and Alberta. Ontario allows for a narrow protective corridor while the Quebec regulator contemplates that the protective perimeter shall be at least 10% of the reservoir measured at its widest place. In Manitoba, the legislation goes so far as to provide that adjacent owners may be entitled to compensation in the event that development of a gas storage property results in resource sterilization and loss of value. Once a storage project has been approved, jurisdictions may also address safety and resource concerns in additional ways. For example, the regulator may require special approvals for drilling and mining activities within a certain margin of the perimeter of the project. This is the case in British Columbia and most notably in Ontario.

Regulation

All of the provincial jurisdictions regulate the safety and conservation aspects of storage projects, whether those projects involve publicly owned storage or privately owned storage. And, as stated above, the various jurisdictions generally try to maintain a clear separation between the government's role as owner of the storage resource (where relevant) and the government's role as regulator of storage projects. Here are some examples: in British Columbia, storage rights are acquired from the Ministry of Energy Mines and Petroleum Resources, project approval falls to the BC Oil and Gas Commission and the BC Utilities Commission may subject the facility to economic regulation; in Alberta, storage rights are acquired from the Department of Energy, while project approval and safety regulation is the responsibility of the Energy Resources Conservation Board; and in Ontario, government storage rights are acquired from the Ministry of Natural Resources, drilling is regulated by the same Department, and the

overall project approved and regulated by the Ontario Energy Board. However, in other cases, the separation is not as clear, for example in Quebec.

In some jurisdictions storage projects will trigger the need for an environmental assessment (EA). This was the case, for example, with Nova Scotia's first gas storage project, the Alton Project, but it is by no means the norm. Gas storage projects in Alberta do not trigger the need for an EA, and in British Columbia, new storage projects in depleted reservoirs in the Peace District of the province are expressly excluded as reviewable projects. Salt cavern projects may present more obvious environmental issues (acquisition of water rights for the salt dissolution process and ultimate disposal of the brine) than do depleted reservoir projects.

In addition to regulation for safety, environmental and resource conservation reasons, gas storage projects may also be subject to economic regulation. Historically this seems to have occurred because storage was initially developed in association with gas distribution utilities which were natural monopolies and were regulated as such. This is clearly the case for storage in Ontario, Alberta, and Quebec, but we can also see this influence in other provinces. For example, although there is no operating storage in Manitoba, the provincial regulatory scheme contemplates that storage, if developed, will be subject to rate regulation. Similarly, the Nova Scotia system contemplates that storage projects will be subject to review and approval by the Nova Scotia Utility Review Board, although it is not completely clear whether such a review is directed at safety issues or at matters of economic regulation. In recent years, there has been a trend to deregulate storage, in some cases to remove it from the rate base of regulated utilities (Alberta), and in other cases (especially Ontario but also Alberta) to emphasise that new storage will operate in a competitive market with market-based rates rather than rates based upon ideas of cost of service. While British Columbia in recent years toyed with subjecting the Aitken Creek facility to a greater degree of economic regulation, the province seems to have backed off, but has left in place a complaints-based system of regulation that might be triggered if a party believed that the operator was abusing its market power.