

Notice – Proposed Indian Oil and Gas Regulations

The Government of Canada will soon begin the regular public consultation process that accompanies regulatory development, for proposed regulations that would entirely replace the existing *Indian Oil and Gas Regulations, 1995*.

This is a special early draft of the regulations (prior to their approval and pre-publication in *Canada Gazette, Part I*).

Background and Context:

The regime that governs the management and administration of oil and gas resources on First Nations reserve lands needed to be modernized to ensure First Nations reserve lands are competitive with surrounding regimes and to ensure oil and gas activities are regulated in an effective manner. Originally passed in the 1970's, the *Indian Oil and Gas Act* and *Indian Oil and Gas Regulations* are administered by Indian Oil and Gas Canada (IOGC), a special operating agency of Indigenous and Northern Affairs Canada (INAC), located on Tsuu T'ina Nation lands, just outside Calgary.

Legislation amending the *Indian Oil and Gas Act, 1974* received Royal Assent in May 2009 resulting in the new *Indian Oil and Gas Act, 2009* (IOGA, 2009). The IOGA, 2009 provided for the development of new regulations to replace the *Indian Oil and Gas Regulations, 1995*. The IOGA, 2009 and its associated new regulations will both become law once the new regulations are ready. Both the 2009 Act and the proposed new regulations were developed in co-operation with the Indian Resource Council, an Aboriginal organization that advocates on behalf of over 180 First Nations with oil and gas resources or the potential for such resources. During this process, the Indian Resource Council was funded for both their participation and to obtain independent legal and technical advice on both the Act and the regulations.

Proposed New Regulations:

The following is a brief summary of some of the key provisions of the proposed regulations.

Subsurface Tenure: Both Chief and Council and the Minister must approve any contract issued for the exploration or exploitation of oil and gas on First Nations reserve lands. To ensure transparency, the proposed new regulations will clearly stipulate the criteria the Minister will use to evaluate a proposed contract. This transparency will ensure that First Nations know exactly what criteria must be met in order to approve a contract, which will facilitate the negotiations between Chiefs and Councils and industry.

The terms and conditions respecting leases and permits have been modernized to ensure efficiency in administration and to promote timely development of resources.

Leases, which are typically used for smaller dispositions of land, will have an initial term of 3 years rather than the 5 years provided in the current regulations. This gives companies 3 years to prove lands productive prior to continuance and prevents companies from holding onto lands that are not being developed. Permits, which are typically used for larger dispositions of land, have an initial term fixed between 2 and 5 years depending on the region in which the contract is located. Regions with deep drilling, complex geology and access challenges typically have longer terms while areas with shallow drilling and year-round access have shorter terms. These timeframes are consistent with the terms of provincial contracts off reserve, which will help ensure First Nations reserve lands are competitive with equivalent off reserve lands. First Nations will be able to negotiate drilling commitments, earning provisions, and the contract depth of earning wells in order to meet specific needs and circumstances. The cumbersome lease selection process is replaced with a provision that allows production from permit lands, and earned permit lands to qualify for a 3-year intermediate term. The new approach encourages companies to develop permit lands in an orderly and timely manner.

Two of the most common concerns raised by First Nations are that the current regulations do not adequately protect First Nations reserve lands from drainage and that the continuance provisions were too generous. The proposed regulations have addressed both of these concerns.

Continuance: With respect to continuance, the proposed new regulations restrict the amount of land that can be continued on the basis of mapping thereby ensuring companies can continue only lands they have proven productive. The proposed new regulations allow lands to be continued indefinitely as long as they are considered productive. New non-productivity notices will be sent to the company if a well is abandoned, if a company fails to produce, or if lands are no longer considered productive. The notice gives the company one year to prove the lands productive or the lands will be returned to the First Nation.

Drainage and Compensatory Royalty: With respect to drainage, the regulations provide for proximity-based offset notices to be issued whenever a well is producing adjacent to First Nations reserve lands. The default option of the notice will be for the company to pay a compensatory royalty in 6 months unless a well is put on production in the First Nation spacing unit or the lands are surrendered. This new provision will substantially increase the number of offset notices issued and will ensure that the First Nation is either paid compensatory royalty or wells are drilled on reserve to protect the First Nation's interests. If the offset lands are not leased, a notice will be sent to the Chief and Council and work can begin to lease the lands.

Royalty Reporting Requirements: The royalty reporting requirement provisions give IOGC the regulatory authority needed to utilize PETRINEX (PETRoleum INformation EXcellence – the industry and provincially-recognized authoritative source for oil and gas volume and pricing data). PETRINEX was created jointly by provincial governments and industry to facilitate the fast and accurate management of key volumetric and

commercial information used to calculate and verify royalty. Upon IOGC's receiving full membership and informatics enhancements to exchange data with PETRINEX, the new reporting provisions and the use of PETRINEX will ensure royalties are determined quickly and accurately.

First Nation Audit: The regulations give the First Nation the ability to enter into an agreement to conduct an audit on behalf of the Minister.

Updates to 1995 Regulations: The regulations were updated to reflect existing regulatory authorities and to incorporate modern drafting standards. In addition, the regulations have been updated to reflect some of IOGC's current practices and policies. For example, the regulations include requirements for environmental reviews to accompany applications for exploration programs, surface agreements (wells and pipelines), and bitumen projects.

The proposed regulations will provide many benefits to First Nations.

Review and Feedback:

Public input is very important to ensure that IOGC develops the best possible regulatory regime to meet stakeholder needs. This is a special early draft of the regulations (prior to their approval and pre-publication in *Canada Gazette, Part I*) for stakeholders to have an early start on their review.

You are invited to review the proposed regulations and, if desired, to provide feedback once they have been pre-published in *Canada Gazette, Part I* (<http://www.gazette.gc.ca/gazette/home-accueil-eng.php>), projected to occur by November 2016.

If you choose to provide feedback, we request that you:

Include the section of the draft you are making reference to and explain your recommendation and rationale.

If you are proposing an alternative, please ensure you provide a clear and detailed concept of what you are recommending.

For further information, please contact IOGC at:

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Indian Oil and Gas Regulations

Interpretation

Definitions

1 (1) The following definitions apply in these Regulations.

Act means the *Indian Oil and Gas Act*. (*Loi*)

actual selling price means

(a) in respect of oil, the price at which the oil is sold; and

(b) in respect of gas, the price or other consideration payable that is specified in the gas sales contract under which the gas is sold, free of any fees or deductions other than transmission charges beyond the facility outlet. (*prix de vente réel*)

adjoining, in relation to two spacing units, means touching at a common point, disregarding any road allowances between the spacing units. (*adjacentes*)

bitumen means oil that does not flow from a reservoir to a well unless it is heated or diluted.

(*bitume*)

Executive Director means the Executive Director of Indian Oil and Gas Canada, Department of Indian Affairs and Northern Development. (*directeur exécutif*)

exploration work includes mapping, surveying, geological, geophysical or geochemical examinations, test drilling and any other activities that are carried out by air, land or water and are related to the exploration for oil or gas. (*travaux d'exploration*)

First Nation spacing unit means a spacing unit in which 50% or more of the lands are First Nation lands that belong to the same First Nation. (*unité d'espacement d'une première nation*)

horizontal section means the portion of a wellbore that has

(a) an angle of at least 80°, measured between the line extending from the initial point of penetration into the target zone and the end point of the wellbore in that zone to the line extending vertically downward from the initial point of penetration into the target zone; and

(b) a minimum length of 100 m, measured from the initial point of penetration into the target zone to the end point of the wellbore in the target zone. (*tronçon horizontal*)

horizontal well means a well that has been approved as a horizontal well by the provincial authority or a well with a horizontal section that has been approved by the provincial authority. (*puits horizontal*)

offset period means the period established in accordance with subsection 94(4). (*délai de préavis*)

off-reserve spacing unit means any spacing unit that is not a First Nation spacing unit. (*unité d'espacement hors réserve*)

offset well means a well in a First Nation spacing unit that adjoins an off-reserve spacing unit in which a triggering well is located and is producing from the same zone as the triggering well. (*puits de limite*)

offset zone means the zone from which a triggering well is producing. (*couche de compensation*)

pool means a natural underground reservoir that contains or appears to contain an accumulation of oil or gas that is separate or appears to be separate from any other such accumulation. (*gisement*)

prescribed means prescribed by the Minister under subsection 5(1) of the Act. (*Version anglaise seulement*)

productive means producing or capable of producing oil or gas in a quantity that would warrant

incurring

(a) the costs of completion, in the case of a well that has been drilled but not completed; or

(b) the costs of production, in the case of a well that has been completed. (*productif*)

project means a project, scheme or plan for the recovery of oil or gas, other than a bitumen recovery project, for which the approval of the provincial authority is required. (*projet*)

provincial authority means the office, department or body that is authorized by law to make decisions, grant approvals, receive information or keep records respecting the exploration, exploitation or conservation of oil and gas in the province in which the relevant First Nation lands are located. (*autorité provinciale*)

service well means a well that is operated for observation or the injection, storage or disposal of fluids. (*puits de service*)

spacing unit means an area in a zone that is designated as a spacing unit, a spacing area, a drainage unit or other similar unit by the provincial authority. (*unité d'espacement*)

subsurface contract means a permit or subsurface lease granted under the Act. (*contrat tréfoncier*)

surface contract means a surface lease or right-of-way granted under the Act. (*contrat de superficie*)

surface rates means the amounts to be paid by a surface contract holder that are referred to in subsections 74(2) and (3). (*frais de surface*)

triggering well means a well that is producing from one or more off-reserve spacing units that adjoin a First Nation spacing unit. (*puits déclencheur*)

unit agreement means an agreement that combines the interests of all the holders of oil and gas rights in all or part of a reservoir and provides for the joint exploitation of the oil and gas and the payment of royalties based on an allocation of production rather than actual production, but does not include an agreement that allocates production from a well referred to in subsection 108(1). (*accord de mise en commun*)

well means a well that is used for the exploitation of oil or gas and includes a vertical, deviated and horizontal well. (*puits*)

zone means a stratum of lands identified as a zone in accordance with Schedule 3 or 4. (*couche*)

Incorporation by reference

(2) A reference to a document that is incorporated into these Regulations is a reference to the document or publication as amended from time to time or, if the document no longer exists, to any successor that provides the same information.

General Rules

Notices, documents or information

2 (1) Any notice, document or information that is sent or submitted under these Regulations may be in paper or electronic format or published on the website of Petrinex or any successor to Petrinex.

Address for service

(2) Every holder of a contract must, in prescribed form, provide the Minister with their contact information and keep that information up to date.

Deemed receipt

(3) Any notice, document or information that is sent to the latest contact information provided by a holder is deemed to have been received by the holder

(a) if it is sent electronically or published on Petrinex, on the day of transmission even if another means of transmission is also used; or

(b) if it is sent by any other means, four days after the day of transmission.

Information possessed by Minister

3 Despite any provision of these Regulations, a person is not obliged to submit information to the Minister that the Minister has advised is already in his or her possession or is available to him or her from another source such as Petrinex.

Form not prescribed

4 When an application or other document is required by these Regulations to be submitted in prescribed form, but no form has been prescribed, the application or document may be submitted in any form so long as it includes all the information required by these Regulations.

Alternative format

5 When a notice, document or information is required by these Regulations to be submitted in a specified format, a holder or operator may submit it in an alternative format if the Minister advises that he or she has the capacity to receive and use the information in that alternative format.

Eligible contract holders

6 A person is eligible to be granted a contract if

(a) they are a corporation that is authorized by the law of the relevant province to carry on business in that province or an individual who has reached the age of majority in that province;

(b) they are not in default under subsection 112;

(c) they have not been convicted — and in the case of a corporation, its directors, officers or agents have not been convicted — of an offence under subsection 18(2) of the Act within two years preceding the date of the bid in the case of a sale by public tender or the date of the application in the case of a negotiated contract.

Holder's obligation

7 A holder must ensure that any requirement that is related to their contract and is imposed by these Regulations on a person other than the holder is fulfilled.

Liability — holder and person with working interest

8 (1) Every contract holder and person with a working interest in a contract is absolutely liable for any damage to the environment that is caused by operations under the contract.

Liability — operators and licensees

(2) Every operator, well licensee, pipeline licensee and facility licensee is absolutely liable for any damage to the environment that is caused by their operations under the contract.

Insurance required

9 (1) A contract holder must obtain, and maintain during the term of the contract, insurance that is adequate to cover all risks resulting from the operations to be carried out under the contract.

Minimum coverage

(2) The insurance policy must provide the following minimal coverage:

(a) comprehensive general liability insurance that covers the risks of damage resulting from operations under the contract with inclusive bodily injury, death and property damage limit of at least \$5,000,000 per occurrence, including occupier's liability, employer's liability, employer's contingent liability, contractual liability, contractor's protective liability, products liability, completed operations liability and contractors' liability insurance;

(b) automobile liability insurance with inclusive bodily injury, death and property damage limit of at least \$5,000,000 per occurrence that covers all vehicles used in operations under the contract; and

(c) if aircraft are to be used in operations under the contract, aircraft liability insurance, with an inclusive bodily injury, death and property damage limit of at least \$10,000,000 per occurrence.

Subrogation

(3) Every policy purchased by the holder must provide that the insurer's right of subrogation is waived in favour of the Minister.

Notice of cancellation

(4) A holder must notify the Minister without delay if any of their coverage is cancelled and at

least 30 days before the last day of coverage if the holder intends to cancel any coverage.

Maximum deductible

(5) The deductible of every policy must not exceed 5 per cent of the coverage.

Self-insurance

10 A holder may fulfil the obligation imposed by subsection 9(1) by providing the Minister with a letter of self-insurance in prescribed form in which the holder

(a) acknowledges liability for any damage resulting from operations under their contract; and

(b) declares that the company's financial resources are adequate to cover its liabilities.

Contractors' insurance

11 The holder must ensure that any person that carries out operations under the contract, other than an employee, obtains and maintains adequate insurance to cover all risks resulting from those operations.

Contract area boundaries

12 (1) The boundaries of a contract area must correspond to the boundaries of the legal land divisions of the relevant province if the lands in the contract area have been surveyed or to the anticipated boundaries of those divisions if the lands have not been surveyed.

Unsurveyed lands

(2) If the lands in a contract area are surveyed during the term of the contract, the Minister must, after consulting with the holder and the council, amend the contract so that the description of the lands in the contract area complies with subsection (1).

Exception

(3) Subsections (1) and (2) do not apply if the contract area is in a reserve the boundaries of which prevent compliance with those subsections.

Survey plans

13 (1) Every survey plan that is required under these Regulations must be

- (a) prepared in accordance with the *Canada Lands Surveys Act*;
- (b) approved by the Surveyor General of Canada; and
- (c) recorded in the Canada Lands Survey Records.

Exception

(2) Subsection (1) does not apply to

- (a) an exploration work survey plan; or
- (b) a survey of lands that are added to a reserve under a treaty land entitlement agreement or a specific claim settlement agreement.

Dispute

14 If a dispute arises regarding the location of a well, facility or boundary referred to in a contract, the Minister may order the holder to have a survey conducted as soon as the circumstances permit.

Annual meeting request

15 (1) A council whose First Nation lands are subject to a contract may, no more than once a year, ask the Minister in prescribed form for a meeting with the holder for the purpose of discussing the operations that have been carried out, or are planned to be carried out, in the contract area.

New holder meeting request

(2) A meeting may also be requested when any rights under the contract are assigned to a new holder, if the council sends the request to the Minister, in prescribed form, within 90 days after the day on which the council receives notice of the assignment.

Minister's notice

(3) The Minister must notify the holder of a meeting request.

Arrangement of meeting

(4) The holder must organize the meeting and ensure that it takes place within 90 days after the day on which the Minister's notice is received. In the case of multiple holders, one of them may be designated to attend as their representative.

Multiple contracts

(5) If the holder has more than one contract on a reserve, operations under all the contracts may be discussed at the same meeting.

Expenses

(6) Any expense relating to the request for, preparation for or attendance at a meeting must be borne by the party that incurs the expense.

Unforeseen incident

16 An operator must, in the most expeditious manner possible, notify the Minister and the council of any unforeseen incident that occurs in carrying out operations under a contract and results in, or could result in, personal injury or damage to First Nation lands or property. The operator must report the details of the incident, in prescribed form, as soon as the circumstances permit.

Accompanying inspector

17 For the purpose of monitoring compliance with the Act and these Regulations, a person may accompany an inspector who is inspecting facilities and operations on First Nation lands if the person is authorized to do so by a written resolution of the council and has the certifications and complies with the occupational health and safety requirements of the holder as well as those imposed by law.

Payment of rent

18 (1) Any annual rent that is payable under a contract must be paid on or before the anniversary of the effective date of the contract.

Refund

(2) Any rent payable for the year in which a contract ends must be paid and once paid is not refundable. However, any rent that has been paid for a subsequent year must be refunded.

Exception

(3) Subsection (1) does not apply to a contract that was granted before these Regulations came into force and provides otherwise.

Payment to Receiver General

19 (1) All money that is owed to Her Majesty under these Regulations or a contract must be paid to the Receiver General for Canada.

Purpose of payment

(2) Every payment that is to be made under this Act or a contract must be accompanied by a statement, in prescribed form, indicating the purpose for which it is made.

Amendments

20 (1) Any amendment to a contract or a bitumen recovery project requires the prior approval of the Minister and the council.

Exception

(2) Subsection (1) does not apply to an amendment referred to in subsection 12(2) or to one that reduces the area of lands in a subsurface contract or a bitumen recovery project.

Well data

21 An operator that carries out operations in connection with a well must submit the following documents and information to the Minister within the following time limits:

- (a)** before the day on which the well is spudded,
 - (i)** a copy of the provincial licence authorizing the drilling of the well and the licence application,
 - (ii)** the drilling and coring plan proposed for the well,
 - (iii)** the geological prognosis,
 - (iv)** any proposed horizontal drilling plan, and
 - (v)** a copy of the surface lease survey plan;
- (b)** within 30 days after the day on which the well is rig-released,
 - (i)** any wireline log prepared,
 - (ii)** all daily drilling reports for the period beginning on the day on which the rig move begins and ending on the day of rig-release.
 - (iii)** the results of any drill stem test conducted,
 - (iv)** a copy of the final downhole drilling survey, if one is required by the provincial authority,
 - (v)** any description, test or analysis resulting from an identification of any well sections that were cored, and
 - (vi)** a copy of the geological report, if one is required by the provincial authority;
- (c)** within 30 days after the day on which the well is completed,
 - (i)** each daily completion report and the final downhole well schematic,
 - (ii)** any wireline log prepared,
 - (iii)** any core and fluid analyses prepared,
 - (iv)** any swab reports prepared,
 - (v)** the results of any pressure or flow tests conducted, including the results of any surface casing vent flow test,

- (vi) a hydraulic fracturing fluid component information disclosure report, and
- (vii) a detailed report of any downhole well intervention or stimulation;
- (d) within 30 days after the day on which any re-completion or workover of the well is completed,
 - (i) each daily re-completion or workover report prepared,
 - (ii) the final downhole well schematic,
 - (iii) a hydraulic fracturing fluid component information disclosure report,
 - (iv) a detailed report of any downhole well intervention or stimulation,
 - (v) any wireline log prepared,
 - (vi) any core and fluid analyses prepared,
 - (vii) any swab reports prepared, and
 - (viii) the results of any flow or pressure tests conducted, including the results of any surface casing vent flow test;
- (e) within 30 days after the day on which the well is downhole-abandoned, a copy of all daily operation reports relating to the downhole abandonment; and
- (f) within 30 days after the day on which the well is surface-abandoned, a copy of all daily operations reports of the cut and cap operation and a copy of the final abandonment report submitted to the provincial authority.

Additional information

22 The operator must also provide any additional technical information about the well that is necessary to determine its productivity.

Information in reports

23 (1) Any information that is submitted to the Minister or a council under the Act must be kept confidential until the end of the period in which such information must be kept confidential under the law of the relevant province, unless the person that submitted it consents in writing to its disclosure.

Seismic information

(2) Despite subsection (1), seismic data submitted by the holder of an exploration licence under paragraph 33(3)(a) may be disclosed by the Minister or the council on the earlier of

(a) if the holder also holds a subsurface lease or permit in lands in the licence area, the day on which the lease expires or is continued, the initial term of the permit expires or, in the case of a permit issued under the *Indian Oil and Gas Regulations, 1995*, the permit is converted to one or more leases, and

(b) the fifth anniversary of the day on which the exploration work was completed.

Interpretation

(3) Any interpretation of seismic data, including maps, that is submitted to the Minister or a council under the Act may be disclosed only if the person that submitted it consents in writing to its disclosure.

Disclosure to council

(4) Despite subsections (1) to (3), the Minister may at any time disclose

(a) confidential information to a council if required to do so by the Act, any Regulations made under the Act or a contract; and

(b) the results of an environmental review referred to in subsection 29(3), 57(2) or 76(2) to a council or the public..

Incorrect information

24 A person who submits information to the Minister and becomes aware that it is incorrect must submit the correct information to the Minister as soon as the circumstances permit.

Approval of assignment

25 (1) An assignment of rights under a contract must be submitted to the Minister along with an application for approval. The application must be in prescribed form and be accompanied by the fee for an assignment approval application set out in Schedule 1.

Refusal to approve

- (2) The Minister must not approve the assignment if
- (a) it is conditional;
 - (b) it would result in more than five persons having an interest or rights in the contract;
 - (c) it assigns an undivided interest or rights in the contract that are less than 1%;
 - (d) it divides the oil and gas rights conferred by the contract;
 - (e) the assignee is not eligible under section 6; or
 - (f) the assignment was not executed by the assignor and assignee.

Minister's decision

- (3) If the Minister approves the assignment and executes it, he or she must send a copy to the assignor and assignee and a notice of the assignment to the council.

Effective date

- (4) The effective date of the assignment is the day on which the Minister approves it unless the assignment provides for a different effective day.

Joint and several liability

- 26 (1)** If the assignment is approved, the assignor and assignee are jointly and severally, or solidarily, liable for any obligation owing and any liability arising under the contract before the day on which it was approved, even if the contract is subsequently assigned.

Exception

- (2) Subsection (1) does not apply to an assignment that was approved before the coming into force of these Regulations.

General Rules

Terms Included in Every Contract

Compliance with laws

27 (1) Every contract granted by the Minister under these Regulations includes the holder's undertaking to comply with

- (a) the *Indian Act*, and any orders made under that Act, as amended from time to time;
- (b) the Act, and any Regulations or orders made under the Act, as amended from time to time; and
- (c) the laws of the relevant province, as amended from time to time, that relate to the environment or to the exploration for or the exploitation, treatment or conservation of oil and gas, including equitable production, if those laws are not in conflict with the Act or any Regulations or orders made under the Act.

Conflict resolution

(2) In the event of a conflict,

- (a) the provisions of any Act, regulation or order incorporated into a contract under subsection (1) prevail over any other terms of the contract, except for any terms respecting royalties negotiated under subsection 4(2) of the Act; and
- (b) the provisions of any federal Act, regulation or order incorporated under subsection (1) prevail over the laws of the province that are incorporated.

Conflict definition

(3) For the purposes of this section, provisions — whether legislative or contractual — are not in conflict with one another unless it is impossible for the holder to comply with both.

Exploration

Authorization

Authorization to explore

28 A person may carry out exploration work on First Nation lands if they

- (a) hold an exploration licence;
- (b) have obtained from the provincial authority any permission that is required to carry out exploration work in the province; and
- (c) are in compliance with the terms of the licence and the permission.

Application for Exploration Licence

Preliminary negotiation

29 (1) Before applying for an exploration licence, an applicant and the council must reach agreement on the location of the proposed seismic lines and on the seismic rates, if those rates have not already been fixed in a related subsurface contract.

Application for licence

(2) The application must be submitted to the Minister in prescribed form and include

(a) the terms negotiated with the council;

(b) if the permission of the provincial authority is required to carry out exploration work in the province, a statement that the permission has been received;

(c) a description of the proposed exploration program, including the licence area, the exploration work to be carried out, the equipment to be used, the name of the geophysical contractor to be engaged and the anticipated duration of the work;

(d) the results of an environmental review of the proposed exploration program that has been conducted by a qualified environmental professional who deals with the applicant at arm's length; and

(e) the exploration licence application fee set out in Schedule 1.

Environmental review

(3) The results of the environmental review must be submitted in prescribed form and include

(a) a site evaluation that is based on the site's topography, soils, vegetation, wildlife, sources of water, existing structures, archeological and cultural resources, Traditional Ecological Knowledge (TEK), current land uses and any other feature of the site that could be affected by the proposed exploration program;

(b) a description of all operations to be carried out during the proposed exploration program, their duration and their location on the site;

(c) a description of the short-term and long-term effects that each operation could have on the environment of the site and on any surrounding areas;

(d) a description of the proposed mitigation measures, the potential residual effects after mitigation and the significance of those effects; and

(e) a description of the consultations undertaken with the council and reserve residents.

Review of application

(4) If the exploration program can be carried out without causing irremediable damage to First Nation lands, the Minister must send a copy of the application to the applicant and the council, along with a letter that sets out the environmental protection measures required to carry out the program.

Council approval

(5) To obtain the exploration licence the applicant must, within 90 days after the day on which the reviewed application is received, submit to the Minister three copies of the environmental protection measures letter and three original copies of the application signed by the applicant, along with a written resolution of the council approving the licence.

Exploration licence

(6) If the requirements set out in this section are met, the Minister must grant the exploration licence for a period of one year. The terms of the licence are those set out in the application and the environmental protection measures letter. The effective date of the licence is the day on which it is signed by the Minister.

Operations Under Exploration Licence

Exploration and subsurface contracts

30 An exploration licence holder may exercise their rights in an area that is subject to a subsurface contract, but in doing so must not interfere with any operations under the subsurface contract.

Priority

31 Every exploration licence is subject to

- (a) any surface rights granted under an Act of Parliament; and
- (b) any right to explore for or exploit minerals other than oil or gas in the licence area.

Maximum drilling depth

32 (1) An exploration licence holder must not drill to a depth of more than 50 m, unless authorized to do so by their licence.

Holder's obligations

(2) The holder must

- (a) ensure that all environmental protection measures included in the licence are implemented and complied with;
- (b) identify and mark the location of every test hole and shot hole that has been drilled under the licence;
- (c) repair and recondition any roads or road allowances that are damaged as a result of the exploration work as soon as the circumstances permit after the damage occurs;
- (d) as soon as the circumstances permit, plug any hole that is drilled under the licence and that, during or after completion of the exploration work, collapses or emits gas, water or another substance;
- (e) within 90 days after the day on which the exploration work is completed, pay compensation for the exploration work that was carried out, based on the rates specified in the licence or a related subsurface contract; and
- (f) within 90 days after the day on which the exploration work is completed, submit to the Minister and the council
 - (i) a mylar sepia copy and a legible paper copy of a map, on a scale of not less than 1:50 000, that shows the location and ground elevation of every vibrating equipment station, shot hole and test hole,
 - (ii) summaries of any geologist's and driller's logs, indicating the depth and thickness of formations bearing water, sand, gravel, coal and other minerals of possible economic value, and

(iii) all technical information obtained from the drilling of each test hole.

Exploration report

33 (1) Within 90 days after the day on which the exploration work is completed, the licence holder must submit an exploration report to the Minister.

Content of exploration report

(2) The report must comply with any exploration reporting requirements of the relevant province and must include, in addition to the documents and information referred to in paragraph 32(2)(f),

(a) a copy of every aerial photograph taken during the period of exploration;

(b) two copies of a geological report on the area investigated, including stratigraphic data and structural and isopach maps on a scale of not less than 1:50 000; and

(c) a geophysical report on the area investigated.

Content of geophysical report

(3) The geophysical report must include the following:

(a) if seismic work has been carried out,

(i) a mylar sepia copy and two legible paper copies of a map, on a scale of not less than 1:50 000, that shows contour lines drawn on the corrected time value at each source point for all significant reflecting horizons investigated, with a contour line interval of not more than 10 m,

(ii) a mylar sepia copy and two pre-folded paper copies for each stacked seismic cross-section, including migrated displays if such processing has been carried out, with all significant reflecting horizons clearly labelled at both ends on one of the copies, and

(iii) two microfilm copies of all basic recording data, including survey notes, chaining notes and observer reports;

(b) if a gravity survey has been carried out, two legible copies of a map, on a scale of not less than 1:50 000, that shows the location and ground elevation of each station, the final corrected gravity value at each station and gravity contour lines drawn on that value with a contour line interval of $2.5 \mu\text{m/s}^2$ or less; and

(c) if a magnetic survey has been carried out, two copies of a map of the area, on a scale of not less than 1:50 000, that shows the location of the flight lines or grid stations and magnetic contour lines with a contour line interval of not more than 5 Nt.

Exception

(4) The holder may include maps at contour line intervals or scales other than those specified in subsections (2) and (3) if the alternative intervals or scales would enhance the interpretability of the maps.

Information available to council

(5) The Minister must make the information submitted under subsections (2) to (4) available to the council.

Information to be kept

(6) In addition to the information submitted under this section, the holder must keep any information that was obtained as a result of the exploration work carried out in the contract area, including any paper or magnetic digital display of raw data or interpreted seismic data, and must make it available for review by the Minister at their office during office hours after the later of the following times:

(a) if the holder also holds a subsurface lease or permit in lands in the licence area, 90 days after the day on which the lease expires or is continued, the initial term of the permit expires or, in the case of a permit issued under the *Indian Oil and Gas Regulations, 1995*, the permit is converted to one or more leases, and

(b) one year after the day on which the exploration work is completed.

Remediation and reclamation

34 When exploration work under an exploration licence is no longer being carried out, whether or not the licence has ended, the holder must ensure that all the lands on which the work was carried out are remediated and reclaimed.

Subsurface Rights

Grants of Subsurface Rights

General Rules

Subsurface contracts

35 (1) Oil and gas rights in First Nation lands may be granted by the Minister under the following subsurface contracts:

- (a) an oil and gas permit; or
- (b) an oil and gas lease.

Mode of disposition

(2) A subsurface contract must be granted in accordance with the public tender process set out in sections 40 to 43 or the negotiation process set out in sections 45 to 47, as chosen by the council. The negotiation process may be preceded by a call for proposals in accordance with section 44.

No splitting of rights

(3) When granting a subsurface contract, the Minister must grant the rights to all the oil and all the gas in each zone included in the contract area.

Priority

36 A subsurface contract holder's rights are subject to the right of an exploration licence holder

to carry out exploration work in, and the right of another subsurface contract holder to work through, the subsurface contract area.

Multiple holders

37 (1) A subsurface contract may be granted to no more than five persons, each having an undivided interest in the contract of at least 1%. The interest must be expressed in decimal form to no more than seven decimal places.

Joint and several liability

(2) If two or more persons have an undivided interest in a subsurface contract, their liabilities and obligations under the contract are joint and several or solidary.

Determination of fair value

38 In determining the fair value of rights to be granted under a subsurface contract, the Minister must consider the bonuses paid by a purchaser for grants of oil and gas rights in other lands, adjusted to take into account any of the following factors:

- (a)** the size of the other lands and their proximity to the First Nation lands;
- (b)** the time when the rights in the other lands were granted;
- (c)** current oil and gas prices and the prices when the rights were granted;
- (d)** the results of recent drilling operations in the vicinity of the other lands;
- (e)** similarities and differences in the geological features of the other lands and the First Nation lands;
- (f)** any other factors that could affect the fair value of the rights.

No amendment

39 The Minister must not amend the earning provisions included in a permit issued under these Regulations or in a permit or lease in force when these Regulations come into force.

Public Tender Process

Public tender

40 The Minister may grant the oil and gas rights in First Nation lands by way of public tender only if the council requests or consents to that process.

Minister's duties

41 (1) When oil and gas rights are to be granted by way of public tender, the Minister must, after consulting with the council, prepare a notice of tender.

Notice of tender

(2) The notice of tender must include the following information:

- (a)** the type of subsurface contract to be granted;
- (b)** the terms of the contract — other than those set out in these Regulations — or the address of a website where the terms are set out, including
 - (i)** a description of the lands to be included in the contract area and the oil and gas rights to be granted,
 - (ii)** the surface rates and seismic rates,
 - (iii)** in the case of a permit, the earning provisions for the initial term, including the drilling commitment and deadline for completion, the target zone or depth to which each earning well must be drilled and the lands to be earned by each, and
 - (iv)** the royalty to be paid, if it differs from the royalty provided for in these Regulations;
- (c)** the instructions for submitting a bid, including any information to be provided by bidders, the place where a bid may be submitted and the deadline for submission; and
- (d)** a statement indicating that by submitting a bid, the bidder acknowledges that they have

reviewed and understood the terms of the contract to be granted and will be bound by those terms if theirs is the winning bid.

Council approval required

(3) The Minister must submit a copy of the notice of tender to the council before publishing it and, if it is approved, must publish it

(a) in a publication known to the industry, such as the *Daily Oil Bulletin* published by the JuneWarren-Nickle's Energy Group; or

(b) on a website on which the Minister publishes information about oil and gas in First Nations lands.

Submission of bids

42 (1) All bids must be submitted in accordance with the instructions set out in the notice of tender, be sealed and include the following:

(a) the subsurface contract application fee set out in Schedule 1;

(b) the rent for the first year of the contract;

(c) the bonus; and

(d) the name and contact information of each proposed contract holder and their percentage interest.

Certified funds

(2) The fee, rent and bonus must be paid in certified funds unless the notice specifies a different form of payment.

Opening of bids

43 (1) After the tender closes, the Minister must without delay open the bids, exclude any bids that were not submitted in accordance with section 42, identify the bid with the highest bonus and give the council notice of that bid.

Presence at opening

(2) The council or a person designated by the council may be present when the Minister opens the bids.

Tied bid

(3) In the case of a tied bid, the Minister must republish the notice of tender.

Council's decision

(4) The council may, within seven days after the day on which the tender closes, notify the Minister by written resolution that it rejects the bid with the highest bonus. If such a notice is received, all bids must be rejected.

Irrevocable decision

(5) If a council informs the Minister that it approves the bid with the highest bonus, that bid cannot be rejected under subsection (4).

Acceptance of highest bid

(6) If a notice rejecting the bid is not received, the Minister must accept it and send the winning bidder a notice of acceptance. The effective date of the contract is the day on which the tender closed.

Posting of tender results

(7) The Minister must publish the name of the winner and the winning bonus amount or, if no bid was accepted, a notice to that effect, in the publication or on the website where the notice of tender was published.

Confidentiality

(8) Except for the name of the winning bidder and bonus amount, the information in bids must be kept confidential.

Contract granted

(9) The Minister must prepare copies of the subsurface contract and send one to the council and one to the winning bidder.

Unsuccessful bids

(10) The Minister must return the fee, rent and bonus included in each unsuccessful bid to the person that submitted it.

Call for Proposals Process**Call for proposals**

44 For the purpose of soliciting interest in rights in First Nation lands, either the council, or the Minister jointly with the council, may make a call for proposals. The call may be made by public advertisement or by other means and must include the following information:

- (a)** the type of subsurface contract to be granted;
- (b)** a description of the lands to be included in the contract area and the oil and gas rights to be granted;
- (c)** terms of the contract that are not set out in these Regulations;
- (d)** the elements that will be considered in evaluating the proposals;
- (e)** a statement that the proposals that are received will form the basis for negotiations with the council and the Minister; and
- (f)** a statement that in addition to the terms negotiated, the contract will include the terms set out in these Regulations.

Negotiation Process

Application

45 (1) A person may apply to the Minister for a subsurface contract that grants oil and gas rights in one or more zones in First Nations lands.

Preliminary negotiation

(2) Before applying for a subsurface contract, an applicant must reach agreement with the council on the following terms:

- (a)** the type of subsurface contract to be applied for;
- (b)** a description of the lands to be included in the contract area and the oil and gas rights to be granted;
- (c)** the amount of the bonus to be paid;
- (d)** the royalty to be paid, if it differs from the royalty provided for in these Regulations; and
- (e)** in the case of a permit, the earning provisions for the initial term, including the drilling commitment and deadline for completion, the target zone or depth to which each new earning well must be drilled and the lands to be earned by each.

Application for contract

(3) The application to the Minister must be in prescribed form, set out the terms negotiated by the applicant and the council and be accompanied by the subsurface contract application fee set out in Schedule 1.

Confidentiality

(4) Any information that is disclosed during the negotiations referred to in subsection (2) or in an application referred to in subsection (3) must be kept confidential.

Conditions of approval

46 (1) The Minister must not approve the application unless

- (a) the lands and oil and gas rights described in the application have been surrendered or designated under section 38 of the *Indian Act*; and
- (b) the proposed bonus reflects the fair value of the rights to be granted, determined in accordance with section 38 of these Regulations.

Approval of application

(2) If the application is approved, the Minister must prepare the subsurface contract and send a copy to the council and the applicant. The Minister must fix and include in the contract the surface rates to be paid under any related surface contract and the seismic rates to be paid under any related exploration licence.

Criteria — rates

(3) The surface rates must be fixed on the basis of the criteria set out in subsections 74(2) and (3). The seismic rates must be consistent with seismic rates for exploration on lands, other than provincial Crown lands, that are similar in size, character and use.

Refusal of application

(4) If the application is not approved, the Minister must send the applicant and council a notice of refusal that sets out the reason for the refusal.

Granting of contract

47 (1) The Minister must grant the contract if he or she receives the following within 90 days after the day on which a copy of the contract has been received by both the council and the applicant:

- (a) a written resolution of the council approving the contract and stating that the council chose to have the rights described in the contract granted by way of negotiation rather than public tender;

(b) the bonus and first year's rent; and

(c) two original copies of the contract — as well as an original copy for each future contract holder — all of which are signed by each of them.

Effective date

(2) The effective date of the contract is the date on which it is granted, unless the contract provides otherwise.

Terms of Subsurface Contracts

Subsurface contract rights

48 The holder of a subsurface contract has the exclusive right to exploit the oil and gas in the lands in the contract area and to process and dispose of that oil and gas.

Initial term of permit

49 (1) If the lands in a permit area are located in a province set out in column 1, and in a region set out in column 2, of the table to Schedule 2, the initial term of the permit is the term set out in column 3. Otherwise, the initial term is five years.

More than one region

(2) If the lands in a permit area are located in more than one region set out in column 2 of the table to Schedule 2, the initial term is the term for the region in which the most lands are located. If the extent of lands in each region is the same, the initial term is the longer of the terms set out in column

Intermediate term of permit

(3) The intermediate term of a permit is three years.

Term of lease

50 The term of an oil and gas lease is three years.

Annual rent

51 The annual rent for a subsurface contract is \$5 per hectare or \$100, whichever is greater.

Selection of Lands for Intermediate Term of Permit**Lands earned**

52 (1) A permit holder earns lands, and may select those lands for the intermediate term of the permit, if during the initial term they have

(a) drilled a new well in the permit area, in accordance with the earning provisions of their permit; or

(b) re-entered an existing well in the permit area and drilled at least 150 m of new wellbore, in accordance with the earning provisions of their permit.

Failure to comply with earning provisions

(2) If a holder fails to meet a deadline set out in an earning provision of their permit, the permit terminates on the day of the deadline with respect to all lands that have not been earned on or before that day.

Selection of lands

(3) A holder that has earned lands may select from those lands down to the base of the deepest

zone into which they have drilled, identified in accordance with Schedule 3.

Constraints on selection

(4) The lands selected under subsection (3) must

- (a) be contiguous, if their configuration permits; and
- (b) include the entire spacing unit in which the lands are located.

Interest less than 75%

53 (1) A holder that has drilled a well in a spacing unit in which the First Nation interest or rights are less than 75% may only select lands in the section in which the well is located down to the base of the deepest zone into which they have drilled.

Reduced earnings — new well

(2) A holder that has drilled a new well but has not drilled to the extent required by the earning provisions of their permit may select lands in the section in which the well is located down to the base of the deepest zone into which they have drilled.

Reduced earnings — re-entered well

(3) A holder that has re-entered and completed a well, but has not drilled to the extent required by paragraph (1)(b) and the earning provisions of their permit may select the lands in the spacing unit in which the well is completed.

Application for intermediate term of permit — deadline

54 (1) A holder that wants a grant of the oil and gas rights for the intermediate term of their permit must apply to the Minister for approval of their selection of lands before the day on which the initial term of the permit expires, except that

- (a) if the initial term has terminated under subsection 52(2), the application must be submitted within 15 days after the day of termination; and
- (b) if the deadline for applying has been extended under subsection 62(2), the application must

be submitted before the day on which the extension ends.

Late application

(2) A holder that fails to apply within the relevant deadline may apply for approval if the application is submitted within 15 days after the day of the deadline and is accompanied by a late application fee of \$5000.

Content of application

(3) The application must be in prescribed form and include

(a) an identification and description of each well that was drilled and each well that was re-entered and completed;

(b) a description of the lands, including the zones, selected for the intermediate term of the permit; and

(c) the rent for the first year of the intermediate term.

Additional information

(4) Information about a well that is drilled, or re-entered and completed, within 30 days before the relevant deadline may be submitted up to 15 days after that day, unless the holder has received an extension under subsection 62(2).

Approval

(5) On receiving an application, the Minister must

(a) approve the selection of lands if the requirements of section 52 are met; and

(b) grant the holder the oil and gas rights in the selected lands for the intermediate period of the permit if the holder has complied with the requirements of the Act, these Regulations and their permit.

Notice to holder and council

(6) If the selection is approved and the oil and gas rights are granted, the Minister must send the holder and the council a notice of the approval and a description of the lands, including the zones, retained for the intermediate term of the permit. If the selection is not approved, the Minister must send the holder a notice of refusal that sets out the reasons for the refusal.

Failure to apply for approval

(7) If a holder does not apply to have a selection of lands approved before the day of the relevant deadlines referred to in subsections (1) to (2), their contract is terminated on that day.

Transitional provision

55 Sections 48 to 54 do not apply to a contract that was issued under the *Indian Oil and Gas Regulations, 1995*.

Bitumen Recovery Project Approval

Application for approval

56 (1) A subsurface contract holder may apply to the Minister for approval of a bitumen recovery project if they have achieved the minimum level of evaluation and applied to the provincial authority for approval of the project.

Minimum level of evaluation

(2) The minimum level of evaluation is

(a) drilling one well on each section in the reserve that is in the area of the proposed bitumen recovery project and coring at least 25% of those wells in the prospective bitumen zone; or

(b) drilling one well on at least 60% of the sections in the reserve that are in the area of the

proposed bitumen recovery project, coring at least 25% of those wells in the prospective bitumen zone and obtaining seismic data over at least 3.2 km in each undrilled section.

Content of application

57 (1) An application for approval of a bitumen recovery project must be in prescribed form and include

- (a) a description of the lands to be included in the project;
- (b) evidence establishing that the minimum level of evaluation has been achieved;
- (c) a statement that the holder has applied for or received, the provincial authority's approval of the project;
- (d) the results of an environmental review of the project that has been conducted by a qualified environmental professional who deals with the holder at arm's length;
- (e) the terms of the royalty to be paid for the oil and gas recovered from lands in the project area;
- (f) the reporting requirements for the project;
- (g) a detailed description of the project, including its location, size and scope, the operations to be carried out, the schedule of pre-construction, construction and start-up operations and the reasons for selecting that schedule;
- (h) a map indicating any ownership, lease, surface or mineral rights in lands in the project area and in any area that is likely to be affected by project operations;
- (i) an aerial photo mosaic of the project area at a scale that is adequate to show the location of the project components, including wells, facilities, tanks, access roads, railways, pipelines, public utility corridors, tailings ponds and discard storage sites;
- (j) a detailed description of storage and transportation facilities for the oil and gas, including the size and ownership of any pipeline that may be used;
- (k) the anticipated rate of production of the oil and gas for the period for which approval is sought;
- (l) the year and month in which the minimum level of production will be achieved;
- (m) a description of the energy sources to be used and their anticipated quantity and cost, along

with a comparison to possible alternative sources; and

(n) the term of the approval sought, along with the anticipated starting and completion dates of the project.

Environmental review

(2) The results of the environmental review of the bitumen recovery project must be set out in prescribed form and include

(a) a site evaluation that is based on the site's topography, soils, vegetation, wildlife, sources of water, existing structures, archeological and cultural resources, Traditional Ecological Knowledge (TEK), current land uses and any other feature of the site that could be affected by the project;

(b) a description of the operations to be carried out during the project, the duration of each operation and its location on the site;

(c) a description of the short-term and long-term effects that each operation could have on the environment of the site and on any surrounding areas;

(d) a description of the proposed mitigation measures, the potential residual effects after mitigation and the significance of those effects; and

(e) a description of the consultations undertaken with the council and reserve residents.

Environmental protection measures letter

(3) After reviewing the application, the Minister must send the applicant and the council a letter that sets out the environmental protection measures required to carry out the bitumen recovery project.

Approval

58 (1) The Minister must approve the bitumen recovery project if

(a) the applicant has achieved the minimum level of evaluation;

(b) a written resolution of the council approving the project has been submitted;

- (c) the application meets the requirements of subsections 57(1) and (2);
- (d) the project has been approved by the provincial authority; and
- (e) the project can be carried out without causing irremediable damage to First Nation lands.

Terms of approval

(2) The approval may include any terms that are necessary to permit the Minister to verify the progress of operations under the project, payment of the approved royalty and compliance with the environmental protection measures.

Surface contract required

59 (1) The operations under a bitumen recovery project must not begin until unless the holder has obtained the surface contracts required by these Regulations.

Compliance with measures

(2) The holder must ensure that all environmental protection measures included in the approval are implemented and complied with.

Minimum level of production

60 (1) The minimum level of oil production per year required from lands that are subject to a bitumen recovery project is equal to an average of 2400 m³ per section in the project area.

Compensation — bitumen

(2) A holder that fails to achieve the minimum level of production in any year following the month in which that level was to be achieved must pay compensation equal to 25% of the difference between the value of the minimum level and the value of the actual level of production.

Deemed price

(3) For the purpose of calculating the compensation referred to in subsection (2), the price of oil

is deemed to be the average monthly Bitumen Floor Price published by the Alberta provincial authority for the time period.

Exception

(4) This section does not apply to a project approved by the Executive Director under section 42 of the *Indian Oil and Gas Regulations, 1995*.

Additional wells, lands or facilities

61 Once a bitumen recovery project has been approved, the subsurface contract holder must obtain the approval of the Minister and the council before adding lands, wells or facilities to the project.

Drilling Over Expiry

Application for extension

62 (1) A subsurface contract holder may apply to the Minister, in prescribed form, for an extension of the deadline for submitting their application for approval of selection of lands under subsection 54(1) or for continuation under section 64 if

- (a) the holder has spudded or re-entered a well for the purpose of deepening it or completing a new zone, but cannot finish the operation before the term expires;
- (b) the application is made before the expiry of the relevant term;
- (c) the application identifies the well, indicates when it was spudded or re-entered; and
- (d) the application includes the rent for the following year.

Approval of extension

(2) If an application is submitted in accordance with subsection (1), the deadline for applying for approval of selection of lands or for continuation is postponed to the 30th day after the day on which the spudded or re-entered well is rig-released. The Minister must inform the council of the extension.

No additional wells.

(3) During an extension, the holder may continue to produce from any existing wells in the contract area, but must not spud, or re-enter and complete, any additional wells in that area.

Transitional provision

(4) This section applies in respect of a permit or lease granted under the *Indian Oil and Gas Regulations, 1995*.

Continuation of Subsurface Contracts**Qualifying lands**

63 (1) A subsurface contract may be continued with respect to the zones, identified in accordance with Schedule 4, in a spacing unit

- (a) that contains a productive well;
- (b) that is subject, in whole or in part, to a unit agreement that includes lands in which a productive well is located, or to an oil or gas storage agreement that has been approved by the provincial authority;
- (c) that is subject to a bitumen recovery project that has been approved by the Minister;
- (d) that is subject to a project, other than a bitumen recovery project, that has been approved by

the provincial authority and includes lands in which a productive well is located;

(e) in respect of which an offset notice has been received in the six months before the day on which the application for continuation is submitted or in respect of which a compensatory royalty is being paid;

(f) that is not producing but is shown by mapping to be potentially capable of producing from the same pool from which a well on an adjoining spacing unit is productive; or

(g) that is potentially productive.

Horizontal and deviated wells

(2) For the purposes of subsection (1), each spacing unit from which a horizontal or a deviated well is productive is deemed to contain a productive well.

Definition of *potentially productive*

(3) For the purpose of paragraph (1)(g), a spacing unit is *potentially productive* if it

(a) contains a well that is in a mapped pool, is neither productive nor abandoned and

(i) was previously producing, or

(ii) contains evidence of the presence of hydrocarbons whose potential productivity has not been conclusively determined;

(b) contains an abandoned well and any zone penetrated by the well has remaining oil or gas reserves; or

(c) has not been drilled, there is evidence that it may be part of a productive pool and it is within a quarter-section in the case of oil — or a section in the case of gas — that adjoins lands referred to in paragraphs (1)(a) to (e).

Application for continuation

64 An application for the continuation of a subsurface contract may be made to the Minister if it is submitted before the day on which the lease or the intermediate term of the permit expires.

Content of application

65 The application must be in prescribed form and include

- (a) a description of the lands, including the zones, with respect to which continuation is sought;
- (b) the basis for continuation under subsection 63(1) along with evidence establishing that basis; and
- (c) the rent for the first year of the continued contract.

Determination

66 (1) On receiving an application for continuation, the Minister must determine which lands described in the application are in a spacing unit referred to in any of paragraphs 63(1)(a) to (f) and must continue the contract with respect to those lands.

Non-producing spacing unit

(2) However, if a non-producing spacing unit referred to in paragraph 63(1)(f) is smaller than one legal sub-division in the case of oil and one quarter section in the case of gas, the Minister must continue the contract with respect to all the lands in the legal subdivision or quarter-section in which the spacing unit is located.

Potentially productive spacing unit

(3) If the Minister determines that lands described in the application are in a spacing unit referred to in paragraph 63(1)(g), he or she must send the holder an offer to continue the contract with respect to those lands.

Continuation

(4) The Minister must continue the contract with respect to lands referred in subsection (3) if the holder, within 30 days after the day on which the offer of continuation is received, pays the Minister a bonus equal to the greater of

- (a) \$2,000; and
- (b) \$400 for each full or partial legal subdivision or, if the lands have not been divided into legal subdivisions, \$400 for each unit of land equivalent to 16 hectares rounded up to the nearest whole number of legal subdivision equivalents.

Notice to holder and council

(5) The Minister must send the holder and the council a notice of his or her determination and — if the contract is continued — a description of the lands, including the zones, with respect to which it is continued as well as the basis for continuation.

Production before determination

(6) Before notice of the Minister's determination is received, the holder may continue producing from existing wells in the contract area, but must not spud, or re-enter and complete, any additional wells in that area.

Return of rent

(7) Despite subsection 18(2), if the contract is not continued, the Minister must refund the rent submitted with the application. If the contract is continued only in part, the Minister must refund the rent for the lands with respect to which the contract is not continued.

Failure to apply for continuation

67 (1) If a holder has not applied for a continuation before the deadline referred to in section 64, the Minister must determine, as soon as the circumstances permit and on the basis of the information in his or her possession, whether their contract is eligible for continuation under any of paragraphs 63(1)(a) to (e).

Notice of eligibility

(2) If the contract is eligible for continuation, the Minister must send the holder a notice that includes the following information:

- (a) a description of the lands, including the zones, with respect to which the contract is eligible for continuation;
- (b) the basis for continuation; and
- (c) the requirements for an application and for continuation, as well as the deadline for submission.

Application

(3) A holder that has received a notice of eligibility may, within 30 days after the day on which the notice is received, apply to the Minister, in prescribed form, for continuation of the contract with respect to any of the lands described in the notice.

Content of application

(4) The application must include a description of the lands, including the zones, with respect to which continuation is sought, the rent for the first year of the continuation and the late application fee of \$5,000.

Continuation to be granted

(5) If the holder provides the required rent and fee, the Minister must continue the contract with respect to the lands described in the application.

Indefinite continuation

68 (1) A contract that is continued on the basis of any of paragraphs 63(1)(a) to (f) continues until the lands in the contract area are surrendered, the contract terminates or is cancelled, or the contract expires, in whole or in part, under subsection 69zwj;(2) or 70(2).

Continuation for a year

(2) A contract that is continued on the basis of paragraph 63(1)(g) continues for a period of one year after the day on which the contract would have expired had it not been continued.

Non-productivity — conventional oil and gas

69 (1) If a contract ceases to be eligible for continuation under any of paragraphs 63(1)(a), (b) and (d) to (f) with respect to any lands in the contract area, the Minister must send the holder a notice of non-productivity that describes those lands and indicates the basis on which the contract can no longer be continued with respect to those lands.

Expiry

(2) A contract referred to in subsection (1) expires with respect to the lands described in the notice of non-productivity on the anniversary of the day on which the notice is received.

Re-application

(3) Before the expiry of a contract with respect to lands referred to in paragraph 63(1)(g) or described in a non-productivity notice, the holder may apply under section 65 to have the contract continued with respect to any lands that are in a spacing unit referred to in any of paragraphs 63(1)(a) to (f).

Inadequate productivity — bitumen

70 (1) In the case of a contract continued under paragraph 63(1)(c), if the lands that are subject to the bitumen recovery project fail to achieve the annual minimum level of production in any three years, the Minister must send the holder a notice of inadequate productivity with respect to those lands.

Termination and expiry

(2) If the lands that are subject to the bitumen recovery project fail to achieve the minimum level of production in any year following the day on which the receipt of the notice of inadequate productivity was received,

(a) the project terminates on the final day of that year; and

(b) the contract terminates on the final day of that year, unless it is continued under subsection (3);

Minister's determination

(3) When the Minister becomes aware that lands that are subject to a bitumen recovery project will not achieve the minimum level of production in a year and the contract is liable to terminate under paragraph (2)(b), he or she must determine, as soon as the circumstances permit and on the basis of the information in his or her possession, whether the contract is eligible for continuation under any of paragraphs 63(1)(a), (b), (d) or (e) and, if so, continue the contract on that basis.

Transitional provision — continuation

72 (1) Sections 63 to 68 apply to the continuation of any subsurface lease that was granted under the *Indian Act* or the Act before these Regulations came into force.

Transitional provision — non-productivity or inadequate productivity

(2) Section 69 applies to subsurface leases that have been continued under the *Indian Act* or the Act before these Regulations came into force. However, section 70 does not apply to a project that was approved by the Executive Director under section 42 of the *Indian Oil and Gas Regulations, 1995*.

Surface Rights

Authorization

73 (1) A person may carry out surface operations on First Nation lands for the purpose of exploiting oil and gas if

(a) in the case of operations that require crossing over or going through First Nations lands, they hold a right-of-way in those lands.

(b) in the case of operations that require the exclusive occupation and use of the surface of First Nation lands, they hold a surface lease of those lands; and

Entry with permission

(2) A person that intends to apply for a surface contract on First Nation lands to carry out any of

the operations referred to in subsection (1) may, with the permission of the council and any First Nation member in lawful possession of those lands, enter on the lands to locate proposed facilities, conduct surveys and carry out any activity necessary to complete an application under section 76.

Preliminary negotiations

74 (1) Before applying for a surface contract, the applicant must provide the council, and any First Nation member in lawful possession of lands in the proposed contract area, with a survey sketch of that area and must reach agreement with them on the following terms:

- (a) the lands to be included in the contract area;
- (b) the operations for which the lands in the contract area will be used;
- (c) the surface rates, if these have not been fixed by the Minister in a related subsurface contract; and
- (d) if a service well is to be drilled or an existing well is to be used as a service well, the permitted uses of the well and the amount of compensation to be paid in respect of the well.

Surface rates — right-of-way

(2) In the case of a right-of-way, the surface rates consist of

- (a) a right of entry charge of \$1,250 per hectare, subject to a minimum charge of \$500 and a maximum charge of \$5,000; and
- (b) initial compensation based on the fair value of lands that are similar in size, character and use.

Surface rates — surface lease

(3) In the case of a surface lease, the surface rates consist of

- (a) the right of entry charge referred to in paragraph (2)(a);
- (b) initial compensation based on the fair value of lands that are similar in size, character and use, loss of use of the lands, adverse effects and general disturbance; and
- (c) the annual rent for subsequent years, based on the loss of use of the lands and adverse

effects.

Negotiation breakdown

75 If agreement cannot be reached during negotiation on the amount of initial compensation or annual rent to be paid, the Minister must, at the request of the applicant, the council or a First Nation member in lawful possession of lands in the contract area, determine the amount, having regard to the factors mentioned in subsection 74(2) or (3).

Application for contract

76 (1) The application must be submitted to the Minister in prescribed form and include

- (a) the terms negotiated with the council and any member in lawful possession of lands in the contract area;
- (b) a survey plan of the lands to be included in the contract area;
- (c) the results of an environmental review of the operations to be carried out in the contract area that has been conducted by a qualified environmental professional who deals with the applicant at arm's length; and
- (d) the surface lease or right-of-way application fee set out in Schedule 1.

Environmental review

(2) The results of the environmental review must be set out in prescribed form and include

- (a) a site evaluation that is based on the site's topography, soils, vegetation, wildlife, sources of water, existing structures, archeological and cultural resources, Traditional Ecological Knowledge (TEK), current land uses and any other feature of the site that could be affected by the proposed uses of the lands in the contract area;
- (b) a description of the proposed operations to be carried out on the lands, the duration of each operation and its location on the site;
- (c) a description of the short-term and long-term effects that each operation could have on the environment of the site and of any surrounding area that might be affected;
- (d) a description of the proposed mitigation measures, potential residual effects after mitigation

and the significance of those effects; and

(e) a description of the consultations undertaken with the council and reserve residents.

Environmental measures

(3) If the application complies with subsection (1) and the proposed operations can be carried out without causing irremediable damage to First Nation lands, the Minister must send the applicant and the First Nation a contract that includes

(a) the terms negotiated with the council and any First Nation member in lawful possession of lands in the contract area; and

(b) the environmental protection measures required to carry out operations under the contract.

Submission to Minister

(4) The Minister must grant the contract if he or she receives the following:

(a) four original copies of the contract, signed by the applicant;

(b) a written resolution of the council approving the contract and the written consent of any First Nation member in lawful possession of lands in the contract area; and

(c) the right of entry charge and initial compensation owed under the surface contract.

Compliance with measures

(5) The holder must ensure that all environmental protection measures included in the contract are implemented and complied with.

Term

77 A surface contract ends on the day on which its surrender has been approved by the Minister, unless the contract provides otherwise.

Renegotiation of rent

78 (1) Unless the surface lease provides otherwise, the holder must renegotiate the amount of the rent with the Minister, the council and any First Nation member in lawful possession of lands in the lease area at the end of the lesser of

(a) every five-year period, and

(b) any period fixed by the law of the relevant province for the renegotiation of surface leases of off-reserve lands.

Lease to be amended

(2) The Minister must amend the lease to reflect the rent renegotiated under subsection (1) if

(a) a written resolution of the council approving the renegotiated rent is submitted along with the written consent of any First Nation member in lawful possession of lands in the lease area; and

(b) the Minister determines the renegotiated rent is fair, having regard to the factors mentioned in paragraph 74(3)(c).

Renegotiation breakdown

(3) If agreement cannot be reached in renegotiating the rent, the Minister must, at the request of the holder, the council or any First Nation member in lawful possession of lands in the lease area, determine the rent, having regard to the factors mentioned in paragraph 74(3)(c), and the Minister must amend the lease to reflect the new rent.

Remediation and reclamation

79 If the lands in a surface contract area are no longer used for the uses for which the contract was granted, the holder must abandon any well and facilities in the area and remediate and reclaim all lands in the area. The holder's obligations under the contract do not end until those activities are completed.

Royalties

Information to be kept

80 (1) Every person who produces, sells, acquires or stores oil or gas that has been recovered from First Nation lands, or acquires a right to such oil or gas, must keep, for a period of 10 years, all information that may be used to calculate the royalty owing in respect of that oil and gas, including any information required by this section.

Information — royalties

(2) Every person referred to in subsection (1) must submit the following information to the Minister in prescribed form as soon as it becomes available:

- (a)** the volume and quality of the oil or gas produced, sold, acquired or stored, or to which a right was acquired, by that person during the month in which the oil or gas was produced;
- (b)** the value for which the oil or gas, or a right to the oil or gas, was sold or acquired;
- (c)** any costs and allowances that will be taken into account in determining the royalty payable on the oil or gas; and
- (d)** any other information that is required to calculate or verify the payable royalty.

Information — related parties

(3) The Minister may require a person referred to in subsection (1) to submit information that indicates the relationship between the parties to a transaction for the purpose of determining whether those parties are related.

Related parties

(4) Persons are related parties for the purpose of subsection (3) and paragraph 83(3)(b) if they would be considered related persons under section 251 of the *Income Tax Act*.

Order to submit plans

81 (1) For the purpose of verifying the royalty payable under a contract, the Minister may order an operator to submit a plan or diagram, drawn to a specified scale, of any facility that is used by the operator in exploiting oil or gas.

Deadline

(2) An operator that receives an order must submit the requested plan or diagram within 30 days of the day on which the order is received.

Notice to submit documents

82 (1) For the purpose of verifying the royalty payable under a contract, the Minister may send a notice requiring any person who has sold, purchased or swapped oil or gas recovered from First Nation lands to provide the following documents:

- (a)** a signed copy of any written sales contract, or if the contract was unwritten, a document that sets out its terms;
- (b)** a transaction statement, invoice or other document that sets out the details of the transaction;
- (c)** a document that sets out the details of any swap; or
- (d)** any agreement between persons respecting the costs and allowances that will be taken into account in determining the royalty payable on the oil or gas.

Deadline

(2) A person who receives a notice sent under subsection (1) must submit the requested documents within 14 days after the day on which the notice is received.

Payment of royalty

83 (1) Except as otherwise provided in a special agreement entered into under subsection 4(2) of the Act, a subsurface contract holder must pay a royalty on the oil and gas produced from or attributable to a subsurface contract area in an amount calculated in accordance with Schedule 5.

Index or reference price

(2) If a special agreement entered into under subsection 4(2) of the Act provides that the royalty on oil or gas is to be calculated using a monthly index price rather than the actual selling price, the holder must, in prescribed form, provide the Minister with the index price for each month in which the oil or gas is produced.

Alternative price

(3) Even if a contract provides that the royalty on oil or gas is to be calculated using the actual selling price, the price to be used to calculate the royalty must be determined in accordance with subsection (4) in the following circumstances:

- (a) no agreement for disposing of the oil or gas has been concluded;
- (b) the agreement under which the oil or gas was disposed of was between related parties;
- (c) the holder did not receive the price set out in the agreement for disposing of the oil or gas; or
- (d) the oil or gas was disposed of in whole or in part for a consideration other than money.

Determination of alternative price

(4) Subject to subsections (5) and (6), the royalty is calculated using the following prices:

- (a) in the case of oil, a price based on the average monthly price published on the New York Mercantile Exchange for light sweet crude;
- (b) in the case of gas, the average monthly price established and published by the provincial authority or, if a provincial price is not available, a price based on the following prices published for the following provinces by the *Canadian Gas Price Reporter*:
 - (i) for Alberta, the NGX-AB NIT Same Day Index #, Tot./Wtd.Avg., Avg price in \$/GJ,
 - (ii) for Saskatchewan, the Canadian Natural Supply Prices, Saskatchewan Field (One-Year Direct), Avg price in \$/GJ,
 - (iii) for Manitoba, the Domestic Natural Gas Burner-Tip Prices, Manitoba, Winnipeg, Firm, Spot Gas, Citygate Price (\$/GJ),
 - (iv) for British Columbia, the Canadian Natural Gas Supply Prices, Spot Gas at Station 2 (Month), Avg price in \$/GJ,
 - (v) for Ontario, the Domestic Natural Gas Burner-Tip Prices, Ontario, Toronto, Firm, Spot Gas,

Citygate Price (\$/GJ), and

(vi) for the other provinces, the Domestic Natural Gas Burner-Tip Prices, Quebec, Montreal, Firm, Spot Gas, Citygate Price (\$/GJ).

Adjustment for location

(5) If the price determined under subsection (4) is established, in the case of oil, at a place other than the sales battery or, in the case of gas, at a place other than the exit valve of a processing plant or compressor station, the cost of transporting the oil or gas from the sales battery, processing plant or compressor station to the place where the price is established must be deducted from that price if this cost has not already been deducted in calculating the royalty on the basis of information provided under paragraph 80(2)(c).

Other adjustments

(6) The price determined under subsection (4) must also be adjusted to reflect

(a) in the case of oil,

(i) any difference between the quality of the crude oil referred to in paragraph 4(a) and the quality of the oil that was produced, and

(ii) the factor of 6.2898 to convert barrels of oil to cubic metres of oil; and

(b) in the case of gas, the heat value of the gas.

Conversion rate

(7) The rate to convert U.S. dollars to Canadian dollars is the Bank of Canada Noon-Day Rate, Projected Calendar Month Average set out in Monthly Averages — Pricing Summary in the Lasso Report.

Deadline for payment

84 The royalty must be paid on or before the 25th day of the third month after the month in which the oil or gas is produced.

Royalty — every sale

85 (1) Subject to subsection (2), every sale of oil or gas that is obtained from or attributable to a subsurface contract area must include the sale on behalf of Her Majesty in right of Canada of any oil or gas that comprises the royalty payable under sections 80 to 85.

Payment in kind

(2) After giving the holder notice and having regard to any obligations that the holder may have in respect of the sale of oil or gas, the Minister may, with the prior approval of the council, direct that all or part of the royalty be paid in kind for a specified period or until the Minister directs otherwise.

Royalties

First Nation Audits and Examinations

General Rules

Agreement required

86 (1) A First Nation may conduct an audit or examination for the purpose of verifying the royalties payable on oil or gas recovered from its lands if

- (a)** its council has entered into an audit or examination agreement with the Minister; and
- (b)** the audit or examination is conducted in accordance with the agreement and these Regulations.

Procedure to obtain agreement

(2) A council that has obtained preliminary approval of a proposed audit or examination under section 90 may ask the Minister to enter into an audit or examination agreement under section 91.

Qualifications

87 (1) A person who conducts an audit or examination under this Act must have the credentials and experience required to carry out their role in the audit or examination in accordance with the good auditing practices.

Requirements

(2) A person who conducts an audit or examination under this Act, or accompanies an auditor or examiner,

(a) must not be employed by, be affiliated with or represent any oil or gas company;

(b) must have the certifications and comply with the occupational health and safety requirements of the holder and those imposed by law; and

(c) must keep confidential any documents or information they obtain in connection with the audit or examination and must comply with the security requirements of the holder as well as those imposed by law.

Confidentiality — First Nation

88 (1) A First Nation that conducts an audit or examination must keep confidential any documents or information it obtains in connection with the audit or examination and must comply with the security requirements of the holder as well as those imposed by law..

Exception

(2) Despite subsection (1), the council must provide the Minister with a copy of all audit or examination reports and working papers within 30 days after the day on which audit or examination concludes.

Preliminary Approval

Application — preliminary approval

89 For the purpose of obtaining preliminary approval of a proposed audit or examination, a council must apply to the Minister in prescribed form. The application must include

- (a) the name of the person whose documents and information are to be audited or examined;
- (b) the name and location of each facility in which the audit or examination will be conducted and the name of the facility's operator;
- (c) the type of audit or examination to be conducted;
- (d) the period to be covered by the audit or examination;
- (e) the anticipated dates for starting and completing the audit or examination;
- (f) the reasons why the council believes the audit or examination is necessary; and
- (g) whether the council is prepared to cover the costs of the audit or examination.

Decision

90 (1) The Minister must give preliminary approval if the requirements of section 89 are met, except in the following circumstances:

- (a) the reasons provided by the council for conducting the proposed audit or examination do not establish the existence of a risk that warrants an audit or examination;
- (b) within the three years before the date of the application, the requested type of audit or examination has been conducted under the Act on the same contract for the same period and the holder was found to be in compliance with the contract, these Regulations and the Act;
- (c) the proposed audit or examination is not on the Minister's list of priority audits or

examinations and the council is not prepared to cover its costs; or

(d) the Minister and the council do not agree on the proposed type of audit or examination, period to be covered or start and completion times.

Notice of decision

(2) The Minister must give the council notice of its decision and, if approval is refused, the reasons for the refusal.

Request for Agreement

Request for agreement

91 A council's request for an audit or examination agreement must be made to the Minister in prescribed form within 180 days after the day on which the notice of preliminary approval is received and include the following:

(a) the name of the proposed auditor or examiner;

(b) a detailed audit or examination plan;

(c) the dates for starting and completing the audit or examination; and

(d) the name of any person accompanying the proposed auditor or examiner and a description of their role in the audit or examination; and

(e) evidence establishing that the proposed auditor or examiner has the qualifications referred to in subsection 87(1);

Refuse

92 The Minister may refuse the request if

- (a) the information required by section 91 has not been provided;
- (b) a requirement referred to in section 87 has not been complied with; or
- (c) any circumstance or basis on which preliminary approval of the audit or examination was given has changed.

Agreement

93 If the request is accepted, the Minister must enter into an agreement with the council that includes the information referred to in paragraphs 89(a) to (d) and 91(a) to (d).

Equitable Production of Oil and Gas

Holder's Obligations

Compensatory royalty

94 (1) The holder of a subsurface contract is obliged to pay Her Majesty in right of Canada, in trust for the relevant First Nation, a compensatory royalty in respect of each triggering well that is located in an off-reserve spacing unit that adjoins a First Nation spacing unit that is in their contract area.

Royalty for each spacing unit

(2) A compensatory royalty must be paid in respect of each First Nation spacing unit in the contract area that adjoins the spacing unit in which the triggering well is located.

Beginning of obligation

(3) The obligation to pay the compensatory royalty begins on the first day of the month that follows the month in which the offset period ends.

Offset period

(4) The offset period begins on the day on which an offset notice is received and ends on

(a) the 90th day after that day, if the offset notice is not sent until after confidential information about the well is made public;

(b) the day on which an extension of the offset notice expires, if one has been given under paragraph 5(1)(d) of the Act; or

(c) the 180th day after that day, in any other case.

Offset Notice**Offset notice**

95 (1) If the Minister becomes aware that a triggering well is in production, the Minister must send an offset notice to every subsurface contract holder that is obliged to pay a compensatory royalty under section 94.

Confidential information

(2) However, if information about a well in respect of which a notice must be sent is confidential under the law of the relevant province, the Minister must send the notice only when he or she becomes aware that the information has been made public.

Absence of holder

(3) If any lands in a First Nation spacing unit that adjoins a spacing unit from which a triggering well is producing are not subject to a subsurface contract, the Minister must

- (a)** give the council notice of the triggering well;
- (b)** send an offset notice to any person that becomes a holder of a subsurface lease in those lands; and
- (c)** send an offset notice to any person that becomes a holder of a permit in those lands one year after the effective date of the permit.

Information included in notice

96 (1) The offset notice must include the following information:

- (a)** the name of the subsurface contract holder, the contract number and the holder's percentage interest in the contract;
- (b)** a description of the lands in the contract area that are subject to the notice;
- (c)** the unique well identifier of the triggering well;
- (d)** the percentage right or interest of the First Nation in the relevant off-reserve spacing unit;
- (e)** a description of the off-reserve spacing unit in which the triggering well is located and the offset zone from which the triggering well is producing;
- (f)** in the case of a horizontal or multilateral triggering well, the total length of the well, the total length of the horizontal section of the well and the length of the portion of the well that is producing from the off-reserve spacing unit;
- (g)** in the case of a deviated well that is producing from more than one spacing unit, the total length of the well and the length of the portion of the well that is producing from the off-reserve spacing unit;
- (h)** the offset period;
- (i)** statements informing the holder that
 - (i)** a spacing unit from which a triggering well is producing adjoins the First Nation spacing unit in the contract area described in paragraph (b);
 - (ii)** the obligation to pay a compensatory royalty begins on the first day of the month following

the month in which the offset period ends,

(iii) the compensatory royalty owed must be paid on or before the 25th day of the third month after the month in which the oil or gas from the triggering well is produced, and

(iv) the obligation to pay the compensatory royalty ends in any of the circumstances referred to in section 101.

Notice to council

(2) The Minister must send the council a copy of the offset notice and, when the offset period ends, a notice indicating that the holder's obligation to pay compensatory royalty has begun.

No obligation

97 (1) The obligation to pay a compensatory royalty does not begin if, during the offset period, the subsurface contract holder submit to the Minister information that establishes any of the following circumstances:

(a) the triggering well is not draining from the offset zone referred to in the offset notice;

(b) the offset zone of the triggering well has been abandoned, as shown in the records of the provincial authority;

(c) an offset well is producing from the offset zone;

(d) the spacing unit from which the triggering well is producing no longer adjoins the First Nation spacing unit referred to in the offset notice;

(e) the offset zone in the First Nation spacing unit is subject to a unit agreement under which oil or gas is being or is deemed to be produced;

(f) the triggering well is part of a storage agreement that has been approved by the provincial authority.

Notice to holder

(2) After determining whether a circumstance mentioned in subsection (1) has been established, the Minister must send the holder a notice of his or her determination.

Surrender

(3) A holder is not obliged to pay a compensatory royalty if, during the offset period, their rights are surrendered down to the base of the offset zone in the spacing unit to which the offset notice applies, except for any rights in a zone from which a well is productive or that is subject to a unit agreement or to a storage agreement that has been approved by the provincial authority.

Notice to council

(4) If the obligation to pay a compensatory royalty ends, the Minister must send the council a notice indicating that it has ended and the reasons why it has ended.

Calculation and Payment of Compensatory Royalty

Royalty formula

98 (1) The compensatory royalty that is payable for a month is

(a) in the case of a vertical triggering well, or a deviated triggering well that is producing from a single spacing unit, an amount equal to the amount that would have been payable by the holder as royalty in that month if the triggering well were producing from the First Nation spacing unit; and

(b) in the case of a horizontal or multilateral triggering well, or a deviated triggering well that is producing from more than one spacing unit, an amount equal to the percentage of the amount referred to in paragraph (a) calculated in accordance with the formula

$$(L/T) \times 100$$

where

L is the length of the portion of the triggering well that is located in the adjoining off-reserve spacing unit and is capable of producing oil or gas from the offset zone, and

T is the portion of the total length of the well that is capable of producing oil or gas.

First nation interest

(2) If the First Nation to which a compensatory royalty is owed has an interest or rights in the spacing unit in which the triggering well is located, the compensatory royalty payable for a month is an amount prorated in accordance with the formula

$$C \times (100 - I)/100$$

where

C is the amount of the compensatory royalty calculated in accordance with subsection (1); and

I is the percentage interest of the First Nation in the off-reserve spacing unit.

Volume and price [FV discrepant]

(3) For the purpose of calculating the compensatory royalty for a month,

(a) the volume of oil, gas or condensate to be used in the royalty formula is the volume of oil, raw gas or condensate that was produced in the month by the triggering well, as shown by the records of the provincial authority; and

(b) the price of oil, gas or condensate to be used in the royalty formula is

(i) in the case of oil, in Saskatchewan, the price indicated in the Monthly Crude Oil Royalty / Tax Factor History published by the Ministry of the Economy and, in the other provinces, the monthly par price for light, medium, heavy or ultra heavy oil, as the case may be, published by Alberta's Department of Energy,

(ii) in the case of gas, in Saskatchewan, the price indicated in the *Monthly Natural Gas Royalty / Tax Factor History* published by the Ministry of the Economy and, in the other provinces, the Gas Reference Price in the monthly information letter entitled *Natural Gas Royalty Prices and Allowances* published by Alberta's Department of Energy, and

(iii) in the case of condensate, the Pentanes Plus Reference Price in the monthly information

letter entitled *Natural Gas Royalty Prices and Allowances* published by Alberta's Department of Energy.

Heating value

(4) If the royalty calculation requires the conversion of \$/GJ into a price in \$/10³m³, the heating value is 37.7 GJ/10³m³.

No deduction

(5) In calculating the compensatory royalty, no deduction for costs or allowances is to be made.

Transitional provision

(6) This section does not apply in respect of a compensatory royalty that is owed under the *Indian Oil and Gas Regulations, 1995*.

Calculation and payment of royalty

99 The holder must provide the Minister, on or before the 25th day of the third month after the month in which the oil or gas from the triggering well is produced, the royalty payable and, in prescribed form, the information that is required to verify its calculation.

Amended spacing unit

100 The obligation to pay compensatory royalty continues despite any change in the size of the First Nation or the off-reserve spacing unit in which the triggering well is located if the two units continue to adjoin.

End of compensatory royalty

101 (1) The obligation to pay a compensatory royalty ends if the holder

(a) establishes any of the circumstances set out in subsection 97(1); or

(b) surrenders their rights down to the base of the offset zone in the spacing unit to which the offset notice applies, except for any rights in a zone from which a well is productive or that is

subject to a unit agreement or to a storage agreement that has been approved by the provincial authority.

Notice to holder

(2) After determining whether a circumstance mentioned in subsection 97(1) has been established, the Minister must send the holder a notice of the determination and, if the obligation ends, the day on which it ends.

Final day of obligation

(3) The obligation to pay a compensatory royalty ends

(a) if the holder sends the Minister a notice establishing a circumstance mentioned in subsection 97(1), on the first day of the month in which the information is received; or

(b) if the holder has surrendered their rights, on the first day of the month following the month in which a notice of the surrender is received.

Notice to council

(4) If the obligation to pay a compensatory royalty ends, the Minister must send the council a notice indicating that it has ended and the reasons why it has ended.

Transitional provision

102 Subject to subsection 98(6), sections 94 to 101 and subsection 112 apply in respect of any subsurface contract that was granted under the *Indian Act* or the Act.

Offset Wells

Failure to produce

103 (1) If an offset well fails to produce any oil or gas for three consecutive months after the offset period has expired, the holder must pay a compensatory royalty in respect of the triggering well whose production was to be offset.

Beginning of royalty obligation

(2) The obligation to pay the compensatory royalty begins on the first day of the month following the three-month period.

Notice to council

(3) The Minister must send the council a notice that the holder has become obliged to pay a compensatory royalty.

Service Wells**Application for approval**

104 (1) A well must not be used as a service well unless the prior approval of the Minister has been obtained.

Content of application

(2) The application for approval must be in prescribed form, be accompanied by a copy of the provincial authority's approval of the service well and set out the following information:

(a) a description of the well,

- (b) a detailed description of the proposed uses of the well and any related facilities; and
- (c) the bonus and the annual compensation to be paid for any disposal rights.

Approval

(3) The Minister must approve the proposed uses of the service well if

- (a) the application is made in accordance with subsection (2);
- (b) the approval of the council has been obtained; and
- (c) the approval will benefit the relevant First Nation.

Notice to Minister

(4) The holder must notify the Minister of any changes in the provincial authorization referred to in subsection (2).

Exception

105 Section 104 does not apply to a service well that is part of a project approved by the provincial authority or a bitumen recovery project that has been approved by the Minister.

Transitional provision

106 Section 104 does not apply in respect of a disposal rights agreement that was entered before these Regulations come into force.

Single spacing unit pooling

107 (1) If a well is completed in a First Nation spacing unit that is subject to more than one subsurface contract or in a spacing unit in which the First Nation interest is less than 100%, the Minister must determine the percentage of production from the well to be allocated to each contract in the spacing unit or to the First Nation portion of the spacing unit, based on the area of lands in each contract.

Notice to holder and council

(2) The Minister must give each holder and the council notice of the percentage of the production that is allocated to each contract in First Nation lands.

Multiple spacing unit production

108 (1) If a well is producing from more than one spacing unit and the lands from which it is producing are not entirely First Nation lands or are not subject to a single contract, the Minister must determine the percentage of production from the well to be allocated to the First Nation portion of each spacing unit or to each contract, as the case may be, based on the criteria used by the provincial authority in making such allocations.

Notice to holder and council

(2) The Minister must give each holder and the council notice of the percentage of the production that is allocated to the First Nation portion of each spacing unit or each contract, as the case may be.

Unit agreement

109 (1) The Minister may, with the prior approval of the council, enter into a unit agreement.

Allocation of production

(2) The calculation of royalties payable under a contract that is subject to a unit agreement must be based on the production allocated to each tract as specified in the agreement.

Surrender, Default and Cancellation

Surrender of subsurface rights

110 (1) The holder of a subsurface contract may surrender their rights in the contract by sending the Minister a notice of the surrender in prescribed form.

Partial surrender of subsurface rights

(2) In a partial surrender of subsurface rights,

(a) all the rights in a spacing unit must be surrendered; and

(b) the annual rent for subsequent years is reduced in proportion to the reduction of lands in the contract area, to a minimum of \$100.

Notice to council

(3) When a subsurface contract is surrendered, the Minister must send a copy of the notice of surrender to the council and, in the case of a partial surrender, a copy of the amended contract.

Surrender of surface rights

111 (1) The holder of a surface contract may surrender their rights in the contract, in whole or in part, by applying in prescribed form for the approval of the Minister.

Notice to council

(2) The Minister must send the council a copy of the application.

Approval

(3) The Minister must approve the surrender if

(a) the holder is not in default under the contract, these Regulations or an order given under the Act;

(b) the Minister and the council have inspected the area of the contract to be surrendered and the Minister has confirmed that the remediation and reclamation of the surface in that area is satisfactory; and

(c) in the case of a partial surrender, the boundaries of the remaining contract area continue to meet the requirements of these Regulations.

Adjusted rent

(4) If the surrender of rights in a surface contract is partial, the annual rent for subsequent years is reduced in proportion to the reduction of the lands in the contract area. However, the annual rent must be no less than the rent payable for 1.6 hectares.

Notice to council

(5) When the surrender of a surface contract is approved, the Minister must send the council a notice of the surrender.

Non-compliance notice

112 (1) If a holder fails to comply with their contract, the Act or these Regulations, the Minister may send them a notice that describes the non-compliance and warns that the contract will be cancelled if the holder is in default.

Response to notice

(2) Within 30 days after the day on which the notice is received, the holder must remedy the non-compliance identified in the notice or, if the non-compliance does not relate to money owed under the Act, submit a plan to the Minister that shows how and when it will be remedied and

why the proposed deadline is justified in the circumstances. Subsequently, the holder must remedy the non-compliance in accordance with the plan.

Deficient plan

(3) If a plan does not meet the requirements of subsection (2), the Minister must send the holder a notice to that effect that identifies its deficiencies.

Amended plan

(4) A holder that receives a notice sent under subsection (3) must

(a) within 30 days after the day on which the notice is received, submit an amended plan that corrects the deficiencies identified in the notice; and

(b) remedy the non-compliance in accordance with the plan.

Default

(5) A holder that receives a notice sent under subsection (1) is in default if they do not comply with the requirements of subsection (2) or, if applicable, subsection (4).

Cancellation for default

(6) The Minister must cancel the contract of a holder that is in default.

Non-payment of compensatory royalty

(7) If a contract is to be cancelled for non-payment of a compensatory royalty, the Minister must cancel the rights conferred by the contract down to the base of the offset zone in the spacing unit to which the offset notice applies, except for any rights in a spacing unit referred to in paragraphs 63(1)(a) to (e).

Cancellation notice

(8) When a contract is cancelled, the Minister must send the holder a notice informing them that their contract is cancelled, the reason for the cancellation and the effective date of the

cancellation.

Notice to council

(9) The Minister must send the council a copy of any notice sent under this section.

Continuing liability

113 When a contract ends for any reason, any liabilities for outstanding amounts that are owed under the contract, any liabilities for damages resulting from operations carried out under the contract and any obligations respecting abandonment, remediation and reclamation survive the end of the contract.

Administrative Monetary Penalties

Designated provisions

114 The provisions set out in Schedule 6 are designated as provisions the contravention of which is a violation that may be proceeded with in accordance with sections 21 to 28 of the Act.

Transitional Provisions

Executive Director

115 The powers, duties and functions of the Executive Director under the *Indian Oil and Gas Regulations, 1995* are to be exercised or performed by the Minister and any reference in a contract to the Executive Director is deemed to be a reference to the Minister.

Permits

116 Sections 15, 16, 18 to 21 of the *Indian Oil and Gas Regulations, 1995* continue to apply in respect of permits granted under those Regulations.

Repeal

117 The *Indian Oil and Gas Regulations, 1995*¹ are repealed.

Coming into Force

S.C. 2009, c. 7

118 These Regulations come into force on the day on which section 1 of *An Act to Amend the Indian Oil and Gas Act* comes into force, but if they are registered after that day, they come into force on the day on which they are registered.

SCHEDULE 1

(Subsection 25(1), paragraphs 29(2)(e) and 42(1)(a), subsection 45(3) and paragraph 76(1)(d))

FEES

Column 1	Column 2	
Item	Service	Fee (\$)
1	Subsurface contract application	250
2	Surface lease application	50
3	Right-of-way application	50
4	Exploration licence application	25
5	Assignment approval application	50
6	Record search	25

SCHEDULE 2

(Subsections 49(1) and (2))

Initial Term of Permits

Definitions

1 The following definitions apply in this Schedule.

Area 1 refers to the lands described as being in Area 1 in Schedule 2 of the *Petroleum and Natural Gas Drilling Licence Regulation*, B.C. Reg 10/82. (*zone 1*)

Area 2 refers to the lands described as being in Area 2 in Schedule 2 of the *Petroleum and Natural Gas Drilling Licence Regulation*, B.C. Reg 10/82. (*zone 2*)

Area 3 refers to the lands described as being in Area 3 in Schedule 2 of the *Petroleum and Natural Gas Drilling Licence Regulation*, B.C. Reg. 10/82. (*zone 3*)

Foothills Region refers to the lands in the Foothills Region referred to in Schedule 1 of the *Petroleum and Natural Gas Tenure Regulation*, Alta. Reg. 263/1997. (*région des contreforts*)

Northern Region refers to the lands in the Northern Region referred to in Schedule 1 of the *Petroleum and Natural Gas Tenure Regulation*, Alta. Reg. 263/1997. (*région du Nord*)

Plains Region refers to the lands in the Plains Region referred to in Schedule 1 of the *Petroleum and Natural Gas Tenure Regulation*, Alta. Reg. 263/1997. (*région des plaines*)

township means a township laid out in accordance with to sections 55–61 of *The Land Surveys Regulations*, RRS c. L.-4.1. (*canton*) (*canton*)

Column 1	Column 2	Column 3	
Item	Province	Region	Initial Term (Years)
1	Nova Scotia	The entire province	Three
2	New Brunswick	The entire province	Three
3	Manitoba	The entire province	Three
4	British Columbia	Area 1	Three
5	Area 2	Four	
6	Area 3	Five	
7	Saskatchewan	Lands located south of Township 55	Two
8	Lands located north of Township 54 but south of Township 66	Three	
9	Lands located north of Township 65	Four	

Column 1	Column 2	Column 3	
Item	Province	Region	Initial Term (Years)
1	Nova Scotia	The entire province	Three
10	Alberta	Plains Region	Two
11	Northern Region	Four	
12	Foothills Region	Five	

TABLE

SCHEDULE 3

(Subsections 1(1) and 52(2))

Zones — Intermediate Term^{*}

Definitions

1 The following definitions apply in this Schedule.

ILND means the internal limit of a zone, whether upper or lower, that is not defined. (*LIND*)

KB means kelly bushing, that is, the point on the rotary drilling table from which downhole well log depths are measured. (*FE*)

NDE means not deep enough and in relation to a reference well means that the well was not drilled to a depth that was sufficient to penetrate the upper or lower limit of a particular zone. (*FI*)

NP means not present and in relation to a zone means that the zone is not present at the location where the reference well was drilled. (*NP*)

TVD means true vertical depth. (*PVR*)

Zones

2 (1) For each reserve specified in this Schedule, the zones that may be selected are the zones set out in column 1 that correspond to the well log data set out in column 2 that match the well log data for the well that was drilled or re-entered by the holder.

Multiple reference wells

(2) If there is more than one set of well log data in column 2, the set derived from the reference well that is nearest the earning well must be used to determine the zones.

Minister's determination

3 If an earning well is drilled into a zone that is not identified in a table to this Schedule, the Minister must determine the upper and lower limit of the deepest zone penetrated by the well based on a review of the log data that relate to other wells in the vicinity and on any other log data that are available and relate to lands in the vicinity.

Alexander 134

Column 1 Column 2

Well Log Data

Item	Zone	00/11-11-56-27W4	00/8-1-56-27W4	Electric Log (ft.KB)	Induction Log (mKB)	Density Log (mKB)
1	Edmonton, Belly River and Lea Park		surface to 615.0			
2	Waipiabi and SWSP		615.0 to 939.0			
3	Viking		3090 to 3250	939.0 to 989.0	934.5 to 979.5	
4	Joli Fou		3250 to 3293	989.0 to 997.0	979.5 to 992.0	
5	Mannville, including Upper Mannville, Glauconite, Ostracod, Basal Quartz "A" and Lower Basal Quartz		3293 to 4112	997.0 to NDE	992.0 to 1218.0	
6	Wabamun		4112 to NDE	NDE	1218.0 to 1384.5	

Column 1 Column 2

Well Log Data

00/11-11-56-27W4 02/6-15-56-27W4

00/8-1-56-27W4

Item	Zone	Electric Log (ft.KB)	Induction Log (mKB)	Density Log (mKB)
7	Calmar	NDE	NDE	1384.5 to 1393.5
8	Nisku	NDE	NDE	1393.5 to NDE
9	Ireton	NDE	NDE	NDE
10	Cooking Lake	NDE	NDE	NDE

Alexander 134A

Column 1 Column 2

Well Log Data

00/13-22-61-17W5 00/3-32-63-22W5

Item	Zone	Neut to Dens m.KB TVD	Neut to Dens m.KB
1	Edmonton, Belly River and Lea Park	surface to 1147.7	
2	Wapiabi, Cardium and Second White Specks	1147.7 to 1663.7	
3	Viking and Joli Fou	1663.7 to 1688.3	
4	Mannville	1688.3 to 1948.1	
5	Fernie and Nordegg	1948.1 to 2024.3	
6	Montney	2024.3 to 2048.3	
7	Belloy	2048.3 to 2064.5	
8	Shunda	2064.5 to 2124.4	
9	Pekisko	2124.4 to 2170.0	
10	Banff and Exshaw	2170.0 -NDE	2472.0 to 2668.0
11	Wabamun	2668.0 to 2893.0	
12	Graminia and Blueridge	2893.0 to 2946.0	
13	Nisku	2946.0 to 3100.0	
14	Ireton	3100.0 to 3273.0	
15	Duvernay	3273.0 to 3334.8	
16	Cooking Lake and Beaverhill Lake	3334.8 to 3385.0	
17	Swan Hills	3385.0 to 3422.0	
18	Watt Mountain	3422.0 to NDE	

Alexis 133

Column 1	Column 2
Well Log Data	
00/10-23-55-4W5	
Item	Zone
1	Edmonton, Belly River and Lea Park
2	Wapiabi and Second White Specks
3	Viking and Joli Fou
4	Mannville
5	Banff and Exshaw
6	Wabamun
7	Winterburn Group
8	Ireton
9	Cooking Lake

Acoustilog m.KB
 surface to 760.0
 760.0 to 1125.0
 1125.0 to 1170.0
 1170.0 to 1328.5
 1328.5 to 1480.5
 1480.5 -1661.0
 1661.0 to 1707.5
 1707.5 to NDE

Alexis Whitecourt 232

Column 1	Column 2
Well Log Data	
00/2-31-60-12W5	
Item	Zone
1	Edmonton, Belly River and Lea Park
2	Wapiabi and Second White Specks
3	Viking and Joli Fou
4	Mannville
5	Nordeg
6	Shunda and Pekisko
7	Banff and Exshaw
8	Wabamun
9	Winterburn Group
10	Ireton and Duvernay
11	Swan Hills
12	Watt Mountain

Acoustilog m.KB MD
 surface to 936.5
 936.5 to 1381.3
 1381.3 to 1415.0
 1415.0 to 1655.0
 1655.0 to 1691.0
 1691.0 to 1737.0
 1737.0 to 1920.5
 1920.5 to 2137.0
 2137.0 to 2234.0
 2234.0 to 2575.5
 2575.5 to 2711.0
 2711.0 to NDE

Amber River 211, Hay Lake 209 and Zama Lake 210

Column 1 Column 2

Well Log Data

Amber river	Hay lake	Hay lake	Zama lake		
00/11-20-114-6w6	00/4-1-112-5w6	00/6-28-112-5w6	00/2-12-112-8w6		
Item	Zone	Sonic log (m.)	Dens-neut log (m.)	Density log (ft.)	Induction log (m.)
1	Wilrich	Surface to 249.0	Surface to 242.0	Surface to 279.0	
2	Bluesky and gething	249.0 to 261.0	242.0 to 261.5	279.0 to 296.0	
3	Banff	261.0 to 344.0	261.5 to 318.7	296.0 to 441.0	
4	Wabamun	344.0 to 548.0	318.7 to nde	ILND to 1712	441.0 to 633.0
5	Trout river, Kakisa,	548.0 to	1712 to 2220	633.0 to	
6	Redknife and Jean marie	710.0		797.0	
7	Fort simpson	710.0 to 1232.7	2220 to 3842	797.0 to 1305.5	
8	Muskwa and waterways	1232.7 to 1310.7	3842 to 4192	1305.5 to 1394.0	
9	Slave point	1310.7 to 1387.0	4192 to 4396	1394.0 to 1478.0	
10	Watt mountain and sulphur point	1387.0 to 1422.0	4396 to 4525	1478.0 to 1524.0	
11	Muskeg and keg river	1422.0 to 1680.0	4525 to 5468	1524.0 to 1780.0	
12	Chinchaga	1680.0 to nde	5468 to NDE	1780.0 to NDE	

Beaver 152

Column 1 Column 2

Well Log Data

00/4-6-82-3W6

Item	Zone	Neutron-Density Log (m.KB)
1	Shaftesbury	surface to 508.0
2	Paddy, Cadotte and Harmon	508.0 to 580.0
3	Notikewin and Falher	580.0 to 920.0
4	Bluesky and Gething	920.0 to 996.0
5	Fernie and Nordegg	996.0 to 1085.0
6	Montney	1085.0 to 1307.8
7	Belloy	1307.8 to 1358.0
8	Taylor Flat	1358.0 to 1395.0
9	Kiskatinaw	1395.0 to 1406.0
10	Golata	1406.0 to 1435.0
11	Debolt	1435.0 to NDE

Beaver Lake 131

Column 1	Column 2			
Well Log Data				
00/7-3-66-13W4	00/12-35-66-12W4	00/6-20-66-13W4		
Item	Zone	Induction Log (m.KB)	Induction Log (m.KB)	Sonic Log (m.KB)
1	Colorado shales	surface to 294.5	surface to 308.0	
2	Viking and Joli Fou	294.5 to 335.0	308.0 to 348.3	
3	Mannville	335.0 to NDE	348.3 to 542.0	318.0 to 486.0
4	Grosmont	NDE	542.0 to NDE	486.0 to 542.0

Big Island Cree Territory 124

Column 1	Column 2		
Well Log Data			
31/7-26-62-25W3	01/10-20-63-24W3		
Item	Zone	Neutron-Density Log (m.KB)	Neutron-Density Log (m.KB)
1	Second White Specks	138.3 to 192.0	

2	St. Walburg and Viking	ILND to 286.0	192.0 to 272.4
3	Mannville	286.0 -NDE	272.4 to 502.0
4	Souris River	502.0 to NDE	

Birdtail Creek 57

Column 1	Column 2
Well Log Data	
00/12-10-15-27W1	00/3-21-15-27W1
Dens/Neut Log (m.KB)	Sonic Log (ft.KB)
Item	Zone
	surface to 244.0 surface to 800
1	Second White Specks 244.0 to 369.0 800 to 1200
2	Swan River (Mannville) 369.0 to 408.5 1200 to 1340
3	Jurassic 408.5 to 479.0 1340 to 1554
4	Lodgepole 479.0 to 538.3 1554 to 1734
5	Bakken 538.3 to 540.3 1734 to 1742
6	Torquay 540.3 to 570.3 1742 to NDE
7	Birdbear 570.3 to NDE NDE
8	Duperow NDE NDE

Blood 148

Column 1	Column 2
Well Log Data	
00/6-35-5-25W4	00/12-28-7-23W4 00/6-24-8-23W4
Item	Zone
	Neut-Dens Log (m.KB) Neut-Dens Log (m.KB) Neut-Dens Log (m.KB)
1	Belly River and Pakowki surface to 1177.0 surface to 859.8 surface to 662.0
2	Milk River 1177.0 to 1278.3 859.8 to 975.3 662.0 to 783.0
3	Colorado Shale 1278.3 to 1629.0 975.3 to 1289.5 783.0 to 1086.5
4	Second White Specks and Barons 1629.0 to 1761.0 1289.5 to 1385.5 1086.5 to 1165.5
5	Bow Island 1761.0 to 1883.0 1385.5 to 1529.3 1186.0 to 1333.0
6	Mannville Group 1883.0 to 2090.0 1529.3 to 1727.5 1333.0 to NDE

7	Rierdon	2090.0 to 2187.5	1727.5 to 1807.8	NDE
8	Livingstone ^A	2187.5 to 2435.5	1807.8 to 1994.3	NDE
9	Banff and Exshaw ^B	2435.5 to 2550.0	1994.3 to 2157.5	NDE
10	Big Valley and Stettler	2550.0 to 2720.5	2157.5 to 2309.0	NDE
11	Winterburn Group	2720.5 to NDE	2309.0 to NDE	NDE
12	Woodbend Group	NDE	NDE	NDE

^A Formation equivalence of Livingstone is Rundle

^B Formation equivalence of Exshaw is Bakken

Buck Lake 133C

Column 1 Column 2

Well Log Data

00/6-20-45-5W5

Item	Zone	Induction Log (ft.KB)
1	Belly River and Lea Park	surface to 4650
2	Wapiabi	4650 to 5167
3	Cardium and Blackstone	5167 to 5590
4	SWSP	5590 to 6173
5	Viking and Joli Fou	6173 to 6316
6	Viking and Joli Fou	6173 to 6316
7	Mannville	6316 to 6855
8	Nordegg	6855 to 6922
9	Pekisko	6922 to 6982
10	Banff	6982 to NDE

Carry The Kettle Nakoda First Nation 76 - 33

Column 1 Column 2

Well Log Data

31/14-29-21-19W3

Item	Zone	Induction Log (M.KB)
1	Lea Park	surface to 219.0

2	Milk River	219.0 to 397.6
3	Colorado Group	397.6 to NDE

Cold Lake 149, 149A, 149B

Column 1 Column 2

Well Log Data

Cold Lake #149 Cold Lake #149A & B

00/2-13-61-3W4 00/6-7-64-2W4

Item	Zone	(Induction log m.KB)	(Induction log m.KB)
1	Shales	ILND to 265.0	
2	Viking and Joli Fou	265.0 to 304.0	
304.0 to 495.3	305.0 to NDE		
3	Beaverhill Lake Group	495.3 to NDE	NDE

Drift Pile River 150

Column 1 Column 2

Well Log Data

00/10-6-74-12W5 00/7-25-73-12W5

Item	Zone	Neut-Dens Log (m. KB)	Density Log (m.KB)
1	Second White Specks	219.5 to 310.0	
2	Shaftsbury	310.0 to 418.0	222.5 to 420.5
3	Peace River and Harmon	418.0 to 450.4	420.5 to 451.3
4	Spirit River	450.4 to 707.5	451.3 to 739.0
5	Bluesky and Gething	707.5 to 764.0	739.0 -788.0
6	Shunda	764.0 to 830.0	788.0 to 799.0
7	Pekisko	830.0 to NDE	799.0 to 856.0
8	Banff	NDE	856.0 to 1081.5
9	Wabamun	NDE	1081.5 to 1350.0
10	Winterburn Group	NDE	1350.0 to 1483.0
11	Ireton	NDE	1483.0 to 1680.0
12	Leduc	NDE	1680.0 to 1805.0
13	Beaverhill Lake	NDE	1805.0 to 1926.5
14	Slave Point and Ft. Vermillion	NDE	1926.5 to 1960.5

15	Watt Mntn. and Gilwood	NDE	1960.5 to 1973.0
16	Muskeg	NDE	1973.0 to NDE

Halfway River 168

Column 1 Column 2

Well Log Data

00/1-34-86-25W6

Item	Zone	Sonic Log (TVD m.KB)
1	Wilrich	surface to 710.0
2	Bluesky and Gething	710.0 to 840.5
3	Cadomin	840.5 to 889.0
4	Nikanassin	889.0 to 994.0
5	Fernie and Nordegg	994.0 to 1112.0
6	Pardonet and Baldonnel	1112.0 to 1150.0
7	Charlie Lake	1150.0 to 1466.5
8	Halfway	1466.5 to 1517.0
9	Doig	1517.0 to 1651.5
10	Montney	1651.5 to 1960.0
11	Belloy	1960.0 to NDE

Heart Lake 167

Column 1 Column 2

Well Log Data

00/13-18-70-10W4

Item	Zone	Induction Log (m.KB)
1	Viking and Joli Fou	268.0 to 306.0
2	Mannville	306.0 to 502.0
3	Woodbend Group	502.0 to NDE

Horse Lakes 152B

Column 1 Column 2

Well Log Data

00/8-27-73-12W6

Item	Zone	Sonic Log (m. KB)
1	Puskwaskau, Badheart, Cardium and Kaskapau	surface to 928.0
2	Doe Creek Mbr.	928.0 to 976.0
3	Dunvegan	976.0 to 1140.0
4	Shaftsbury	1140.0 to 1468.0
5	Paddy	1468.0 to 1496.0
6	Cadotte and Harmon	1496.0 to 1553.0
7	Notikewin	1553.0 to 1625.0
8	Falher and Wilrich	1625.0 to 1879.0
9	Bluesky and Gething	1879.0 to 2021.5
10	Cadomin	2021.5 to 2050.5
11	Nikanassin	2050.5 to 2157.5
12	Fernie	2157.5 to 2248.0
13	Nordegg	2248.0 to 2275.0
14	Charlie Lake	2275.0 to 2477.5
15	Halfway	2477.5 to 2504.0
16	Doig	2504.0 to 2553.0
17	Montney	2553.0 to NDE

Kehewin 123

Column 1 Column 2

Well Log Data

00/7-10-59-6W4 00/10-9-59-6W4^A

Induction Log (ft. KB) Induction Log (m.KB)

Item	Zone	surface to 1053	
1	Viking and Joli Fou	1053 to 1189	
2	Mannville	1189 to 1858	359.0 to NDE
3	Woodbend Group	1858 to NDE	NDE

^A Colony channel

Little Pine (116) and Poundmaker (114)

Column 1	Column 2			
Well Log Data				
21/6-7-46-21W3	21/15-29-44-23W3 ^A	11/2-33-44-24w3		
Item	Zone	Induction Log (m.KB)	Neut-Dens Log (m.KB)	Neut-Dens Log (m.KB)
1	Second White Specks	458.3 to 543.0		
2	Viking and Joli Fou	543.0 to 585.0		
3	Mannville	437.5 to 601.0	532.0 to ILND	585.0 to 736.5
4	Duperow	601.0 to NDE	736.5 to NDE	

^A Colony channel

Loon Lake 235 and Swampy Lake 236

Column 1	Column 2	
Well Log Data		
00/1-20-86-9W5		
Item	Zone	Neutron-Density Log (m.KB)
1	Clearwater	315.0 to 373.0
2	Banff	373.0 to 494.0
3	Wabamun	494.0 to 777.0
4	Winterburn	777.0 to 963.0
5	Ireton	963.0 to 1233.0
6	Beaverhill Lake	1233.0 to 1343.7
7	Slave Point and Ft. Vermillion	1343.7 to 1377.5
8	Watt Mountain	1377.5 to 1382.7
9	Muskeg	1382.7 to 1452.0
10	Granite Wash	1452.0 to 1487.0
11	PreCambrian	1487.0 to NDE

Makao 120, Onion Lake 119-1, 119-2 and Seekaskootch 119

Column 1 Column 2

Well Log Data

11/14-8-56-27W3 00/11-23-54-1W4 41/6-4-55-25W3

Item	Zone	Neut-Dens Log (m.KB TVD)	Neut-Dens Log (m.KB)	Neut-Dens Log (m.KB)
1	Second White Specks	surface to 322.0	346.0 to 428.0	
2	St. Walburg (La Biche (AB)	ILND to 433.5	322.0 to 365.0	428.0 to 478.8
3	Viking	433.5 to 474.4	365.0 to 402.0	478.8 to 515.4
4	Mannville	474.4 to 648.0	402.0 to 536.0	515.4 to ILND
5	Duperow	648.0 to NDE	536.0 to NDE	

Ministikwan 161 and Makwa 129

Column 1 Column 2

Well Log Data

41/8-25-58-25W3 31/8-34-58-25W3

Item	Zone	Neutron-Density Log (m.KB)	Neutron-Density Log (m.KB)
1	Second White Specks, St. Walburg and Viking	219.0 to 346.5	254.6 to 387.6
2	Mannville	346.5 to NDE	387.6 to 627.0
3	Duperow	NDE	627.0 to NDE

Neekaneet Cree Nation 160A

Column 1 Column 2

Well Log Data

21/8-32-7-28W3

Item	Zone	Neutron-Density Log (m.KB)
1	Belly River	surface to 625.4
2	Lea Park and Ribstone Creek	625.4 to 807.0

3	Milk River	807.0 to 946.3
4	Medicine Hat	946.3 to 1107.0
5	Second White Specks	1107.0 to 1272.0
6	Viking and Joli Fou	1272. 0 to 1390.3
7	Mannville	1390.3 to 1479.3
8	Vanguard	1479.3 to 1523.0
9	Shaunovan and Gravelbourg	1523.0 to 1574.5
10	Mission Canyon	1574.5 to NDE

Ocean Man 69 and Flying Dust First Nation 105

Column 1	Column 2	
Well Log Data		
Neut-Dens Log (m.KB) Sonic Log (m.KB)		
Item	Zone	31/11-11-10-8W2 01/9-30-10-7W2
1	Gravelbourg	ILND to 1102.0
2	Watrous	1102.0 to 1184.4
3	Alida and Tilston	1184.4 to NDE
4	Souris Valley	ILND to 1433.5 NDE
5	Bakken	1433.5 to 1451.0 NDE
6	Torquay	1451.0 to NDE NDE

Pigeon Lake 138A^A

Column 1	Column 2				
Well Log Data					
00/12-36-46-28W4	04/15-24-46-28W4	00/9-18-46-27W4	00/12-20-47-27W4		
Item	Zone	GR-Neutron (ft.KB)	Neut-Dens log (m.KB)	Electric Log (ft.KB)	Electric Log (ft.KB)
1	Edmonton, Belly River and Lea Park	surface to 1036.0			
2	Wapiabi	1036.0 to 1197.0			
3	Cardium and Blackstone	1197.0 to 1281.3	3850 to 4020 ^B		

4	Second White Specks	1281.3 to 1423.7
5	Viking and Joli Fou	1423.7 to 1472.0
6	Upper Mannville	1472.0 to 1610.3
7	Lower Mannville	1610.3 to NDE
8	Wabamun	5591 -6295
9	Calmar and Nisku	6295 to 6492
10	Ireton	6492 to 6670
11	Leduc	6670 to NDE 6434 to 7210 ^C

^A The First Nation lands are located at the Banff subcrop limit. Any Banff/Exshaw remnants will be earned with the Lower Mannville.

^B Bonnie Glen Cardium Unit No. 1: definition of unitized zone

^C Bonnie Glen D-3A Gas Cap Unit: definition of unitized zone

Puskiakiwenin 122 and Unipouheos 121

Column 1 Column 2

Well Log Data

00/11-21- 56-3W4	00/6-16-57- 3W4 ^A	00/13-26-57- 4W4 ^B	00/8-16-58- 3W4		
Item	Zone	Induction Log (m.KB)	Induction Log (m.KB)	Induction Log (m.KB TVD)	Induction Log (m.KB)
1	Viking and Joli Fou	371.0 to 411.5			
2	Mannville	411.5 to 546.5	409.5 to NDE	416.5 to NDE	403.0 to 575.0
3	Woodbend Group	546.5 to NDE	NDE	NDE	575.0 to NDE

^A McLaren channel

^B McLaren channel

Red Pheasant 108

Column 1	Column 2			
Well Log Data				
11/15-14-61-26W3	11/11-5-60-23W3	41/7-15-59-24W3		
Item	Zone	Neutron-Density Log (m.KB)	Neutron-Density Log (m.KB)	Neutron-Density Log (m.KB)
1	Second White Specks	160.8 to 239.7	176.0 to 253.0	
2	St. Walburg	239.7 to 279.0	253.0 to 300.0	
3	Viking	279.0 to 324.0	300.0 to 339.5	
4	Mannville	292.3 to ILND	324.0 to 586.0	339.5 to 576.0
5	Souris River	586.0 to NDE	576.0 to NDE	

Saddle Lake 125

Column 1	Column 2		
Well Log Data			
00/11-32-57-11W4	02/6-29-57-13W4		
Induction Log (ft.KB)	Induction Log (m.KB)		
Item	Zone		
1	Second White Specks	393.0 to 491.0	
2	Viking and Joli Fou	1412 to 1542	491.0 to 528.3
3	Mannville	1542 to 2132	528.3 to 710.7
4	Ireton	2132 to NDE	710.7 to 872.3
5	Cooking Lake	NDE	872.3 to 934.0
6	Beaverhill Lake	NDE	934.0 to NDE

Samson 137, 137A, Louis Bull 138B, Ermineskin 138 and Montana 139

Column 1	Column 2		
Well Log Data			
00/6-17-46-24W4	00/9-35-44-25W4	00/14-32-44-25W4	00/10-13-44-23W4

Item	Zone	Neut to Dens m.KB	Neut to Dens TVD m.KB	Neut to Dens m.KB	Neut to Dens ft.KB
1	Edmonton, Belly River and Lea Park	surface to 831.0	surface to 944.0	surface to 925.0	surface to 2707
2	Wapiabi	831.0 to 1067.0	944.0 to 1183.3	925.0 to 1166.0	2707 to 3466
3	Second White Specks	1067.0 to 1199.0	1183.3 to 1311.0	1166.0 to 1295.3	3466 to 3866
4	Viking and Joli Fou	1199.0 to 1251.5	1311.0 to 1363.6	1295.3 to 1350.7	3866 to 4040
5	Mannville	1251.5 to 1439.3	1363.6 to 1558.2	1350.7 to 1530.0	4040 to 4815
6	Banff	1439.3 to 1451.0	NP	1530.0 to 1543.0	NP
7	Wabamun	1451.0 to 1613.7	1558.2 to 1772.6	1543.0 to 1763.0	4815 to NDE
8	Calmar and Nisku	1613.7 to 1665.5	1772.6 to NDE	1763.0 to 1818.3	NDE
9	Ireton	1665.5 to 1904.0	NDE	1818.3 to NDE	NDE
10	Cooking Lake	1904.0 to NDE	NDE	NDE	NDE

Sawridge 150G

Column 1 Column 2

Well Log Data

00/2-6-73-5W5 00/4-19-71-4W5^A

Item	Zone	Sonic Log (ft.KB)	Induction Log (ft.KB)
1	Colorado Group	surface to 1248	
2	Viking	1248 to 1334	
3	Mannville	1334 to 2240	
4	Banff and Exshaw	2240 to 2440	
5	Wabamun	2440 to 3336	
6	Winterburn	3336 to 3647	
7	Ireton	3647 to 4888	
8	Waterways	4888 to 5450	
9	Slave Point	5450 to 5496	

10	Watt Mountain	5496 to 5578	
11	Gilwood	5578 to 5860	6112 to 6146 ^A
12	Muskeg	5860 to 5920	
13	Keg River	5920 to 6321	
14	Lower Elk Point	6321 to NDE	

^A Mitsue Gilwood Sand Unit No. 1: definition of unitized zone

Sharphead 141(extinct)

Column 1 Column 2

Well Log Data

00/6-1-43-26W4 00/14-2-43-26W4

Item	Zone	Induction Log (m.KB)	Sonic Log (m.KB)
1	Horseshoe Canyon	surface to 552.0	
2	Belly River and Lea Park	552.0 to 1016.0	
3	Wapiabi, Cardium and Blackstone	1016.0 to 1270.0	
4	Second White Specks	ILND to 1384.5	1270.0 to 1405.0
5	Viking and Joli Fou	1384.5 to 1436.0	1405.0 to NDE
6	Mannville	1436.0 to 1625.0	NDE
7	Banff and Exshaw	1625.0 to 1652.5	NDE
8	Wabamun	1652.5 to NDE	NDE

Siksika 146

Column 1 Column 2

Well Log Data

00/14-3-23-23W4 00/5-19-22-23W4 00/4-4-21-20W4 00/2-29-20-20W4 00/6-20-20-19W4

Item	Zone	Sonic Log (m.KB)	Neut-Dens (m.KB)	Neut-Dens (m.KB)	Neut-Dens (m.KB)	Sonic Log (m.KB)
1	Edmonton, Belly River and Pakowki	surface to 854.5	surface to 810.0	surface to 593.0	surface to 630.0	surface to 656.0
2	Milk River	854.5 to 937.5	810.0 to 892.0	593.0 to 686.0	630.0 to 722.5	656.0 to 738.5
3	Upper Colorado and	937.5 to	892.0 to	686.0 to	722.5 to	738.5 to

	Medicine Hat	1242.0	1200.0	977.5	1018.6	1026.6
4	Second White Specks	1242.0 to 1370.7	1200.0 to 1330.0	977.5 to 1095.4	1018.6 to 1144.0	1026.6 to 1147.7
5	Viking	1370.7 to 1475.0	1330.0 to 1441.5	1095.4 to 1203.7	1144.0 to 1248.5	1147.7 to 1250.0
6	Mannville	1475.0 to 1647.0	1441.5 to 1595.5	1203.7 to 1350.0	1248.5 to 1431.3	1250.0 to 1413.7
7	Pekisko	1647.0 to 1752.0	1595.5 to NDE	1350.0 to NDE	1431.3 to 1477.3	1413.7 to 1476.3
8	Banff and Exshaw	1752.0 to 1896.0	NDE	NDE	1477.3 to 1617.0	1476.3 to 1630.0
9	Wabamun	1896.0 to 2065.7	NDE	NDE	1617.0 to 1753.0	1630.0 to 1755.0
10	Calmar and Nisku	2065.7 to 2096.0	NDE	NDE	1753.0 to 1796.5	1755.0 to 1793.7
11	Ireton and Leduc	2096.0 to 2312.0	NDE	NDE	1796.5 to NDE	1793.7 to NDE
12	Cooking Lake	2312.0 to 2365.0	NDE	NDE	NDE	NDE
13	Beaverhill Lake Group	2365.0 - 2514.5	NDE	NDE	NDE	NDE
14	Elk Point Group	2514.5 to NDE	NDE	NDE	NDE	NDE

Stoney 142, 143, 144 and Tsuut'ina Nation 145

Column 1 Column 2

Well Log Data

00/8-13-27-3W5	00/2-33-25-6W5 ^A	00/10-34-24-6W5(5-34) ^B	00/5-24-27-6W5 \$ ^C		
Item	Zone	Induction Log (m.KB)	Neutron Log (ft.KB MD)	Sonic Log (ft.KB MD)	Sonic Log (ft.KB MD)
1	Belly River	surface to 1743.0			
2	Wapiabi	1743.0 to 2121.0			
3	Cardium and Blackstone	2121.0 to 2418.0			
4	Viking and Joli Fou	2418.0 to 2498.0			
5	Blairmore ^D	2498.0 to 2729.0			

6	Mount Head	NP			
7	Turner Valley	2729.0 to 2775.0	^A 11154 to 11485	11920 to 12280 ^B	9978 to 10198 ^C
8	Shunda	2775.0 to 2828.0			
9	Pekisko	2828.0 to 2929.0			
10	Banff and Exshaw	2929.0 to 3079.0			
11	Wabamun Group	3079.0 to 3318.0			
12	Winterburn Group	3318.0 to 3356.0			
13	Ireton	3356.0 to 3368.0			
14	Leduc	3368.0 to 3599.0			
15	Cooking Lake	3599.0 to NDE			

^A Jumping Pound West Unit #1: definition of unitized zone

^B Jumping Pound West Unit #2: definition of unitized zone

^C Wildcat Hills Unit: definition of unitized zone

^D Includes any remnant Jurassic strata: Fernie, Nordegg

Stony Plain 135

Column 1	Column 2		
Well Log Data			
03/13-3-52-26W4	00/14-3-52-26W4		
Item	Zone	Induction Log (m.KB)	Electric Log (m.KB)
1	Edmonton, Belly River and Lea Park	surface to 691.0	
2	Wapiabi and Second White Specks	691.0 to 1029.0	
3	Viking and Joli Fou	1029.0 to 1076.0	
4	Mannville Group	1076.0 to 1332.0	
5	Wabamun	1332.0 to 1421.0	
6	Graminia, Calmar and Nisku	1421.0 to 1502.0	
7	Ireton, Leduc and Cooking Lake	1502.0 to NDE	
8	1573.4 to NDE ^A		

^A Leduc/Cooking Lake only

Sturgeon Lake 154

Column 1	Column 2		
Well Log Data			
00/9-18-70-23W5 00/4-25-70-23W5			
Item	Zone	Sonic Log (ft.KB)	Sonic Log (ft.KB)
1	Wapiabi, Bad Heart and Kaskapau	surface to 2721	surface to 2605
2	Dunvegan and Shaftesbury	2721 to 3467	2605 to 3327
3	Peace River and Harmon	3467 to 3623	3327 to 3482
4	Spirit River	3623 to 4573	3482 to 4440
5	Bluesky and Gething	4573 to 4805	4440 to 4586
6	Cadomin	4805 to 4890	4586 to 4658
7	Fernie and Nordegg	4890 to 5092	4658 to 4949
8	Montney	5092 to 5459	4949 to 5288
9	Belloy	5459 to 5590	5288 to 5373
10	Debolt	5590 to 6186	5373 to 5997
12	Shunda	6186 to 6473	5997 to 6290
13	Pekisko	6473 to 6674	6290 to 6486
14	Banff and Exshaw	6674 to 7397	6486 to 7228
15	Wabamun	7397 to 8184	7228 to 8021
16	Winterburn	8184 to 8496	8021 to 8422
17	Ireton and Leduc	8496 to NDE	8422 to 9316
18	Beaverhill Lake Gp.	NDE	9316 to 9610
19	Slave Point	NDE	9610 to 9660
20	Gilwood and Granite Wash	NDE	9660 to 9730
21	PreCambrian	NDE	9730 to NDE

Sucker Creek 150A

Column 1	Column 2
Well Log Data	
00/16-36-74-15W5	

Item	Zone	Sonic Log (m.KB)
1	Shaftesbury	surface to 428
2	Paddy, Cadotte and Harmon	428 to 463
3	Spirit River Formation	463 to 737
4	Bluesky and Gething	737 to 768
5	Debolt	768 to 863
6	Shunda	863 to 976
7	Pekisko	976 to 1031
8	Banff	1031 to 1265
9	Wabamun	1265 to 1535
10	Winterburn Group	1535 to 1657
11	Woodbend Group	1657 to 1956
12	Beaverhill Lake and Slave Point	1956 to 2084
13	Gilwood and Watt Mountain	2084 to 2113
14	Granite Wash	2113 to 2152
15	PreCambrian	2152 to NDE

Sunchild 202 and O'Chiese 203

Column 1	Column 2	Column 3		
Well Log Data				
00/4-11-44-10W5	00/10-15-43-10W5	00/6-30-42-9W5		
Item	Zone	Neut-Dens Log (m.KB)	Neut-Dens Log (m.KB)	Neut-Dens Log (m.KB)
1	Edmonton and Belly River	surface to 1765.0	surface to 1742.0	surface to 1700.0
2	Upper Colorado	1765. 0 to 2120.0	1742.0 to 2126.0	1700.0 to 2062.0
3	Cardium	2120.0 to 2186.0	2126.0 to 2197.7	2062.0 to 2134.7
4	Lower Colorado	2186.0 to 2522.5	2197.7 to 2499.0	2134.7 to 2451.9
5	Viking	2522.5 to 2550.0	2499.0 to 2526.0	2451.9 to 2478.6
6	Upper Mannville	2550.0 to 2720.0	2526.0 to 2678.0	2478.6 to 2627.0
7	Lower Mannville	2720.0 to 2791.4	2678.0 to 2757.0	2627.0 to 2702.5
8	Fernie, Rock Creek and Poker Chip	2791.4 to 2833.0	2757.0 to 2794.8	2702.5 to 2741.8
9	Nordeg	2833.0 to 2861.0	2794.8 to 2824.0	2741.8 to 2771.0
10	Shunda	2861.0 to 2892.2	2824.0 to 2854.8	2771.0 to 2804.2

11	Pekisko	2892.2 to 2926.0	2854.8 to 2905.0	2804.2 to 2839.0
12	Banff and Exshaw	2926.0 to NDE	2905.0 to NDE	2839.0 to 3021.3
13	Wabamun	NDE	NDE	3021.3 to NDE

Thunderchild 115K and Thunderchild First Nation 115B, 115C, 115D, 115E, 115F, 115G, 115H, 115I, 115J, 115L, 115M, 115N, 115Q, 115R, 115S, 115T, 115U, 115V, 115W, 115X, 115Z

Column 1 Column 2

Well Log Data

91/5-25-59-23W3 21/16-3-52-20W3

Item	Zone	Neut-Dens Log (m.KB MD)	Neut-Dens Log (m.KB)
1	St. Walburg and Viking	231.6 to 320.8	
2	Mannville	320.8 to NDE	454.0 to 672.0
3	Devonian	NDE	672.0 to NDE

Utikoomak Lake 155

Column 1 Column 2

Well Log Data

00/6-30-80-9W5

12-28-80-9W5

2-21-79-8W5

Item	Zone	Sonic Log (m.KB)	Electric Log (ft.KB)	Electric Log (ft.KB)
1	Peace River and Spirit River	315.5 to 558.7		
2	Shunda and Pekisko	558.7 to 607.0		
3	Banff and Exshaw	607.0 to 884.0		
4	Wabamun	884.0 to 1125.0		
5	Winterburn	1125.0 -1267.0		
6	Ireton	1267.0 to 1568.0		
7	Beaverhill Lake	1568.0 to 1686.0		
8	Slave Point and Ft. Vermillion	1686.0 to 1718.0		
9	Watt Mountain and Gilwood	1718.0 to	5552 to 5576 ^A	5689 to 5771 ^B

		1724.0
10	Muskeg, Keg River and Granite Wash	1724.0 to 1755.0
11	PreCambrian	1755.0 to NDE

^A West Nipisi Unit No. 1: definition of unitized zone

^B Nipisi Gilwood Unit No. 1: definition of unitized zone

Wabamun 133A

Column 1	Column 2	
Well Log Data		
00/15-23-52-4W5		
Item	Zone	Sonic Log (m.KB)
1	Belly River	surface to 710.0
2	Lea Park	710.0 -865.0
3	Wapiabi	865.0 to 1016.0
4	Cardium and L. Colorado	1016.0 to 1245.0
5	Viking and Joli Fou	1245.0 to 1295.5
6	Mannville	1295.5 to 1474.0
7	Banff and Exshaw	1474.0 to 1631.0
8	Wabamun	1631.0 to 1790.0
9	Graminia, Blueridge, Calmar and Nisku	1790.0 to 1877.0
10	Ireton	1877.0 to NDE

Wabasca 166, 166A, 166B, 166C, 166D

Column 1	Column 2	
00/11-10-81-25W4		
Item	Zone	Induction Log (ft.KB)
1	Pelican and Joli Fou	720 to 824
2	Mannville	824 to 1608
3	Wabamun	1608 to 1677
4	Winterburn	1677 to NDE

White Bear 70

Column 1 Column 2

Well Log Data

01/5-15-10-2W2

Item	Zone	Neutron Log (ft.KB)
1	Viking	2670 to 2843
2	Mannville	2843 to 3200
3	Gravelbourg and Watrous	3200 to 3902
4	Tilston and Souris Valley	3902 to 4380
5	Bakken	4380 to 4420
6	Torquay	4420 to 4590
7	Birdbear	4590 to 4690
8	Duperow	4690 to 5214
9	Souris River	5214 to 5593
10	Dawson Bay	5593 to 5780
11	Prairie Evaporite	5780 to NDE

White Fish Lake 128

Column 1 Column 2

Well Log Data

00/14-11-62-13W4 00/10-16-62-12W4

Colony channel non channel

Item	Zone	Induction Log (m.KB)	Induction Log (m.KB)
1	Viking and Joli Fou	347.6 to 386.0	347.0 to 383.5
2	Mannville	386.0 to NDE	383.5 to 539.5
3	Woodbend Group	539.5 to NDE	

Woodland Cree 226, 227, 228

Column 1 Column 2

Well Log Data

00/6-18-87-18W5	00/7-24-86-14W5	00/9-34-86-17W5		
Item	Zone	Sonic Log (m.KB)	Sonic Log (m.KB)	Neut-Dens Log (m.KB)
1	Bullhead Group	surface to 494.0	surface to 475.0	surface to 498.0
2	Debolt, Shunda and Pekisko	494.0 to 753.0	475.0 to 518.5	498.0 to 504.0 ^A
3	Banff and Exshaw	753.0 to 1051.0	518.5 to 823.0	
4	Wabamun	1051.0 to 1312.0	823.0 to 1078.0	
5	Winterburn	1312.0 to 1397.0	1078.0 to 1205.5	
6	Ireton	1397.0 to 1662.0	1205.5 to 1509.0	
7	Beaverhill Lake	1662.0 to 1700.0	1509.0 to 1566.0	
8	Slave Point	1700.0 to NDE	1566.0 to 1613.5	
9	Granite Wash	1613.5 to 1614.0		
10	PreCambrian	1614.0 to NDE		

^A Debolt only

SCHEDULE 4

(Subsection 63(1))

Zones — Continuation^{*}

Definitions

1 The following definitions apply in this Schedule.

ILND means the internal limit of a zone, whether upper or lower, that is not defined. (*LIND*)

KB means kelly bushing, that is, the point on the rotary drilling table from which downhole well log depths are measured. (*FE*)

NDE means that the depth to which the reference well was drilled was insufficient to yield the relevant log data. (*FI*)

NP means a zone that is not present at the location where the reference well was drilled. (*NP*)

TVD means true vertical depth. (*PVR*)

Zones

2 (1) In the case of a contract that is continued on the basis of any of the paragraphs of 63(1), for each reserve specified in this Schedule, the zones with respect to which continuation may be sought are the zones set out in column 1 that correspond to the well log data set out in column 2.

Multiple reference wells

(2) If there is more than one set of well log data in column 2, the set derived from the reference well that is nearest the relevant spacing unit must be used to determine the zones that may be continued.

Minister's determination

3 If the zone with respect to which the contract may be continued is not identified in a table to this Schedule, the Minister must determine the upper and lower limits of the relevant zone, based on a review of well log data that relate to wells in the vicinity of the relevant spacing unit and on any other well log data that are available and relate to lands in the vicinity.

Alexander 134

Column 1 Column 2

Well Log Data

00/11-11-56-
27W4^A 02/6-15-56-27W4

00/8-1-56-
27W4

Item	Zone	Electric Log (ft.KB)	Induction Log (m. KB)	Density Log (m.KB)
1	Edmonton and Belly River	surface to 485.0		
2	Lea Park	485.0 to 615.0		
3	Waipiabi	615.0 to 805.5		
4	SWSP	805.5 to 939.0		
5	Viking	3090 to 3250	939.0 to 989.0	934.5 to 979.5
6	Joli Fou	3250 to 3293	989.0 to 997.0	979.5 to 992.0
7	Mannville, including Upper Mannville, Glauconite	3293 to 3790	997.0 to 1150.5	992.0 to 1141.5
8	Ostracod	3790 to 3836	1150.5 to 1163.5	1141.5 to 1155.0
9	Basal Quartz "A"	3836 to 3852	1163.5 to 1172.0	1155.0 to 1161.0
10	Lower Basal Quartz	3852 to 4112	1172.0 to NDE	1161.0 to 1218.0
11	Wabamun	4112 to NDE	NDE	1218.0 to 1384.5
12	Calmar and Nisku	NDE	NDE	1384.5 to 1393.5
13	Ireton	NDE	NDE	NDE
14	Cooking Lake	NDE	NDE	NDE

^A 11-11 Alexander Basal Quartz Gas Unit Well (Basal Quartz 'A' gas: definition of unitized zone)

Alexander 134A

Column 1 Well Log Data	Column 2		
00/13-22-61- 17W5	00/3-32-63-22W5		
Item	Zone	Neut to Dens m.KB TVD	Neut to Dens m.KB
1	Edmonton and Belly River	surface to 1055.6	
2	Lea Park	1055.6 to 1147.7	
3	Wapiabi and Cardium	1147.7 to 1406.5	
4	Second White Specks	1406.5 to 1663.7	
5	Viking	1663.7 to 1682.0	
6	Joli Fou	1682.0 to 1688.3	

7	Upper Mannville	1688.3 to 1904.2	
8	Bluesky	1904.2 to 1921.9	
9	Gething	1921.9 to 1948.1	
10	Fernie and Nordegg	1948.1 to 2024.3	
12	Montney	2024.3 to 2048.3	
13	Belloy	2048.3 to 2064.5	
14	Shunda	2064.5 to 2124.4	
15	Pekisko	2124.4 to 2170.0	
16	Banff and Exshaw	2170.0 to NDE	2472.0 to 2668.0
17	Wabamun	2668.0 to 2893.0	
18	Graminia and Bluebridge	2893.0 to 2946.0	
19	Nisku	2946.0 to 3100.0	
20	Ireton	3100.0 to 3273.0	
21	Duvernay	3273.0 to 3334.8	
22	Cooking Lake and Beaverhill Lake	3334.8 to 3385.0	
23	Swan Hills	3385.0 to 3422.0	
24	Watt Mountain	3422.0 to NDE	

Alexis 133

Column 1	Column 2	
Well Log Data		
00/10-23-55-4W5		
Item	Zone	Acoustilog m.KB
1	Edmonton and Belly River	surface to 617.0
2	Lea Park	617.0 to 760.0
3	Wapiabi	760.0 to 960.5
4	Second White Specks	960.5 to 1125.0
5	Viking	1125.0 to 1158.5
6	Joli Fou	1158.5 to 1170.0
7	Upper Mannville	1170.0 to 1319.0
8	Lower Mannville	1319.0 to 1328.5
9	Banff	1328.5 to 1478.0
10	Exshaw	1478.0 to 1480.5
11	Wabamun	1480.5 -1661.0

12	Winterburn Group	1661.0 to 1707.5
13	Ireton	1707.5 to NDE
14	Cooking Lake	

Alexis Whitecourt 232

Column 1	Column 2	
Well Log Data		
00/2-31-60-12W5		
Item	Zone	Acoustilog m.KB MD
1	Edmonton and Belly River	surface to 837.0
2	Lea Park	837.0 to 936.5
3	Wapiabi	936.5 to 1169.0
4	Second White Specks	1169.0 to 1381.3
5	Viking	1381.3 to 1409.0
6	Joli Fou	1409.0 to 1415.0
7	Upper Mannville	1415.0 to 1606.0
8	Lower Mannville	1606.0 to 1655.0
9	Nordeg	1655.0 to 1691.0
10	Shunda	1691.0 to 1704.0
11	Pekisko	1704.0 to 1737.0
12	Banff	1737.0 to 1917.9
13	Exshaw	1917.9 to 1920.5
14	Wabamun	1920.5 to 2137.0
15	Winterburn Group	2137.0 to 2234.0
16	Ireton	2234.0 to 2535.0
17	Duvernay	2535.0 to 2575.5
18	Swan Hills	2575.5 to 2711.0
19	Watt Mountain	2711.0 to NDE

Amber River 211, Hay Lake 209 and Zama Lake 210

Column 1	Column 2		
Well Log Data			
Amber river	Hay lake	Hay lake	Zama lake

00/11-20-114-6W6	00/4-1-112-5W6	00/6-28-112-5W6	00/2-12-112-8W6		
Item	Zone	Sonic Log (m.KB)	Dens-Neut Log (m.KB)	Density Log (ft.KB)	Induction Log (m.KB)
1	Wilrich	surface to 249.0	surface to 242.0	surface to 279.0	
2	Bluesky and Gething	249.0 to 261.0	242.0 to 261.5	279.0 to 296.0	
3	Banff	261.0 to 344.0	261.5 to 318.7	296.0 to 441.0	
4	Wabamun	344.0 to 548.0	318.7 to NDE	ILND to 1712	441.0 to 633.0
5	Trout River, Kakisa and Redknife	548.0 to 697.0	1712 to 2177	633.0 to 785.5	
6	Jean Marie	697.0 to 710.0	2177 to 2220	785.5 to 797.0	
7	Fort Simpson	710.0 to 1232.7	2220 to 3842	797.0 to 1305.5	
8	Muskwa and Waterways	1232.7 to 1310.7	3842 to 4192	1305.5 to 1394.0	
9	Slave Point	1310.7 to 1387.0	4192 to 4396	1394.0 to 1478.0	
10	Watt Mountain	1387.0 to 1389.0	4396 to 4422	1478.0 to 1481.0	
11	Sulphur Point	1389.0 to 1422.0	4422 to 4525	1481.0 to 1524.0	
12	Muskeg and Keg River	1422.0 to 1680.0	4525 to 5468	1524.0 to 1780.0	
13	Chinchaga	1680.0 to NDE	5468 to NDE	1780.0 to NDE	

Beaver 152

Column 1	Column 2	
Well Log Data		
00/4-6-82-3W6		
Item	Zone	Neutron-Density Log (m.KB)
1	Shaftesbury	surface to 508.0
2	Paddy, Cadotte and Harmon	508.0 to 580.0

3	Notikewin and Falher	580.0 to 920.0
4	Bluesky and Gething	920.0 to 996.0
5	Fernie and Nordegg	996.0 to 1085.0
6	Montney	1085.0 to 1307.8
7	Belloy	1307.8 to 1358.0
8	Taylor Flat	1358.0 to 1395.0
9	Kiskatinaw	1395.0 to 1406.0
10	Golata	1406.0 to 1435.0
11	Debolt	1435.0 to NDE

Beaver Lake 131

Column 1	Column 2			
Well Log Data				
00/7-3-66-13W4	00/12-35-66-12W4	00/6-20-66-13W4		
Item	Zone	Induction Log (m.KB)	Induction Log (m.KB)	Sonic Log (m.KB)
1	Colorado shales	surface to 294.5	surface to 308.0	
2	Viking and Joli Fou	294.5 to 335.0	308.0 to 348.3	
3	Colony	335.0 to 344.5	348.3 to 358.6	
4	Upper Grand Rapids 2A	344.5 to 365.0	358.6 to 383.0	
5	Upper Grand Rapids 2B	365.0 to 383.3	383.0 to 402.0	
6	Lower Grand Rapids 1	383.3 to 398.0	402.0 to 418.0	318.0 to 486.0
7	Lower Grand Rapids 2	398.0 to 421.0	418.0 to 445.3	
8	Upper Clearwater	421.0 to 449.5	445.3 to 470.6	
9	Lower Clearwater	449.5 to 483.5	470.6 to 500.3	
10	McMurray	483.5 to NDE	500.3 to 542.0	
11	Grosmont	NDE	542.0 to NDE	486.0 to 542.0

Big Island Cree Territory 124

Column 1	Column 2		
Well Log Data			
31/7-26-62-25W3	01/10-20-63-24W3		
Item	Zone	Neutron-Density Log (m.KB)	Neutron-Density Log (m.KB)
1	Second White Specks	138.3 to 192.0	
2	St. Walburg	192.0 to 221.0	
3	Viking	ILND to 286.0	221.0 to 272.4
4	Colony and McLaren ^A	286.0 -316.0	272.4 to 300.8
5	Waseca	316.0 to 333.0	300.8 to ILND
6	Lower Mannville	333.0 -ILND	
7	Souris River	502.0 to NDE	

^A Beacon Hill Mannville Voluntary Gas Unit: definition of unitized zone

Birdtail Creek 57

Column 1	Column 2		
Well Log Data			
00/12-10-15-27W1	00/3-21-15-27W1		
Item	Zone	Dens/Neut Log (m.KB)	Sonic Log (ft.KB)
1	Second White Specks	244.0 to 369.0	800 to 1200
2	Swan River (Mannville)	369.0 to 408.5	1200 to 1340
3	Jurassic	408.5 to 479.0	1340 to 1554
4	Lodgepole	479.0 to 538.3	1554 to 1734
5	Bakken	538.3 to 540.3	1734 to 1742
6	Torquay	540.3 to 570.3	1742 to NDE
7	Birdbear	570.3 to NDE	NDE
8	Duperow	NDE	NDE

Blood 148

Column 1	Column 2
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Well Log Data

00/6-35-5-25W4

00/12-28-7-23W4

00/6-24-8-23W4

Item	Zone	Neut-Dens Log (m.KB)	Neut-Dens Log (m.KB)	Neut-Dens Log (m.KB)
1	Belly River	surface to 1129.5	surface to 798.5	surface to 619.5
2	Pakowki	1129.5 to 1177.0	798.5 to 859.8	619.5 to 662.0
3	Milk River	1177.0 to 1278.3	859.8 to 975.3	662.0 to 783.0
4	Colorado Shale	1278.3 to 1629.0	975.3 to 1289.5	783.0 to 1086.5
5	Second White Specks	1629.0 to 1761.0	1289.5 to 1385.5	1086.5 to 1165.5
6	Barons	NP	NP	1165.5 to 1186.0
7	Bow Island	1761.0 to 1883.0	1385.5 to 1529.3	1186.0 to 1333.0
8	Mannville Group	1883.0 to 2090.0	1529.3 to 1727.5	1333.0 to NDE
9	Rierdon	2090.0 to 2187.5	1727.5 to 1807.8	NDE
10	Livingstone ^A	2187.5 to 2435.5	1807.8 to 1994.3	NDE
11	Banff	2435.5 to 2546.0	1994.3 to 2153.3	NDE
12	Exshaw ^B	2546.0 to 2550.0	2153.3 to 2157.5	NDE
13	Big Valley and Stettler	2550.0 to 2720.5	2157.5 to 2309.0	NDE
14	Winterburn Group	2720.5 to NDE	2309.0 to NDE	NDE
15	Woodbend Group	NDE	NDE	NDE

^A Formation equivalence of Livingstone is Rundle

^B Formation equivalence of Exshaw is Bakken

Buck Lake 133C

Column 1

Column 2

Well Log Data

00/6-20-45-5W5

Item	Zone	Induction Log (ft.KB)
1	Belly River	surface to 4193
2	Lea Park	4193 to 4650
3	Wapiabi	4650 to 5167
4	Cardium	5167 to 5302
5	Blackstone	5302 to 5590

6	SWSP	5590 to 6173
7	Viking	6173 to 6270
8	Joli Fou	6270 to 6316
9	Mannville	6316 to 6855
10	Nordegg	6855 to 6922
11	Pekisko	6922 to 6982
12	Banff	6982 to NDE

Carry The Kettle Nakoda First Nation 76 - 33

Column 1	Column 2
Well Log Data	
31/14-29-21-19W3	
Item	Zone Induction Log (M.KB)
1	Lea Park surface to 219.0
2	Milk River 219.0 to 397.6
3	Colorado Group 397.6 to NDE

Cold Lake 149, 149A, 149B

Column 1	Column 2
Well Log Data	
Cold Lake (149) Cold Lake (149A&B)	
00/2-13-61-3W4 00/6-7-64-2W4	
Item	Zone (Induction log m.KB) (Induction log m. KB)
1	shales ILND to 265.0
2	Viking and Joli Fou 265.0 to 304.0
3	Colony 304.0 to 319.0 305.0 to 324.3
4	McLaren 319.0 to 329.5 324.3 to 334.0
5	Waseca 329.5 to 346.0 334.0 to 350.0
6	Sparky 346.0 to 363.0 350.0 to 366.5
7	General Petroleums 363.0 to 373.0 366.5 to 378.0
8	Rex 373.0 to 411.5 378.0 to 408.0
9	Lloydminster 411.5 to 453.0 408.0 to 452.0
10	Cummings 453.0 to 495.3 452.0 to NDE

Drift Pile River 150

Column 1	Column 2		
Well Log Data			
00/10-6-74-12W5 00/7-25-73-12W5			
Item	Zone	Neut-Dens Log (m. KB)	Density Log (m.KB)
1	Second White Specks	219.5 to 310.0	
2	Shaftsbury	310.0 to 418.0	222.5 to 420.5
3	Peace River and Harmon	418.0 to 450.4	420.5 to 451.3
4	Spirit River	450.4 to 707.5	451.3 to 739.0
5	Bluesky	707.5 to 739.0	739.0 -763.0
6	Gething	739.0 to 764.0	763.0 to 788.0
7	Shunda	764.0 to 830.0	788.0 to 799.0
8	Pekisko	830.0 to NDE	799.0 to 856.0
9	Banff	NDE	856.0 to 1081.5
10	Wabamun	NDE	1081.5 to 1350.0
11	Winterburn Group	NDE	1350.0 to 1483.0
12	Ireton	NDE	1483.0 to 1680.0
13	Leduc	NDE	1680.0 to 1805.0
14	Beaverhill Lake	NDE	1805.0 to 1926.5
15	Slave Point	NDE	1926.5 to 1950.0
16	Fort Vermillion	NDE	1950.0 to 1960.5
17	Watt Mntn. and Gilwood	NDE	1960.5 to 1973.0
18	Muskeg	NDE	1973.0 to NDE

Halfway River 168

Column 1	Column 2	
Well Log Data		
00/1-34-86-25W6		
Item	Zone	Sonic Log (TVD m.KB)
1	Wilrich	surface to 710.0
2	Bluesky and Gething	710.0 to 840.5

3	Cadomin	840.5 to 889.0
4	Nikanassin	889.0 to 994.0
5	Fernie and Nordegg	994.0 to 1112.0
6	Pardonet and Baldonnel	1112.0 to 1150.0
7	Charlie Lake	1150.0 to 1466.5
8	Halfway	1466.5 to 1517.0
9	Doig	1517.0 to 1651.5
10	Montney	1651.5 to 1960.0
11	Belloy	1960.0 to NDE

Heart Lake 167

Column 1	Column 2
Well Log Data	
00/13-18-70-10W4	
Item	Zone Induction Log (m.KB)
1	Viking and Joli Fou 268.0 to 306.0
2	Colony 306.0 to 330.5
3	Upper Grand Rapids 330.5 to 363.0
4	Lower Grand Rapids 363.0 to 409.5
5	Clearwater 409.5 to 461.5
6	McMurray 461.5 to 502.0
7	Woodbend Group 502.0 to NDE

Horse Lakes 152B

Column 1	Column 2
Well Log Data	
00/8-27-73-12W6	
Item	Zone Sonic Log (m. KB)
1	Puskwaskau surface to 402.5
2	Badheart 402.5 to 446.0
3	Cardium 446.0 to 483.0
4	Kaskapau 483.0 to 928
5	Doe Creek Mbr. 928.0 to 976.0

6	Dunvegan	976.0 to 1140.0
7	Shaftsbury	1140.0 to 1468.0
8	Paddy	1468.0 to 1496.0
9	Cadotte	1496.0 to 1521.0
10	Harmon	1521.0 to 1553.0
11	Notikewin	1553.0 to 1625.0
12	Falher	1625.0 to 1812.5
13	Wilrich	1812.5 to 1879.0
14	Bluesky	1879.0 to 1921.5
15	Gething	1921.5 to 2021.5
16	Cadomin	2021.5 to 2050.5
17	Nikanassin	2050.5 to 2157.5
18	Fernie	2157.5 to 2248.0
19	Nordegg	2248.0 to 2275.0
20	Charlie Lake	2275.0 to 2477.5
21	Halfway	2477.5 to 2504.0
22	Doig	2504.0 to 2553.0
23	Montney	2553.0 to NDE

Kehewin 123

Column 1	Column 2		
Well Log Data			
00/7-10-59-6W4	00/10-9-59-6W4 ^A		
Induction Log (ft. KB)	Induction Log (m.KB)		
Item	Zone	surface to 1053	
1	Viking and Joli Fou	1053 to 1189	
2	Colony	1189 to 1218	359.0 to 386.0
3	McLaren	1218 to 1261	absent
4	Waseca	1261 to 1315	386.0 to 401.0
5	Sparky	1315 to 1381	401.0 to 421.0
6	GP	1381 to 1490	421.0 to 457.0
7	Rex-Lloydminster	1490 to 1644	457.0 to 499.0
8	Cummings	1644 to 1858	499.0 to NDE
9	Woodbend Group	1858 to NDE	NDE

^A Colony channel

Little Pine 116 and Poundmaker 114

Column 1	Column 2			
Well Log Data				
21/6-7-46-21W3	21/15-29-44-23W3 ^A	11/2-33-44-24w3		
Item	Zone	Induction Log (m.KB)	Neut-Dens Log (m.KB)	Neut-Dens Log (m.KB)
1	Second White Specks	458.3 to 543.0		
2	Viking and Joli Fou	543.0 to 585.0		
3	Colony	437.5 to 459.0	532.0 to 554.0	585.0 to 600.8
4	McLaren	459.0 to 469.0	554.0 to 569.0	600.8 to 611.5
5	Waseca	469.0 to 485.5	569.0 to 588.0	611.5 to 634.7
6	Sparky	485.5 to 501.0	588.0 -611.0	634.7 to 646.0
7	General Petroleums	501.0 to 518.3	611.0 to ILND	646.0 to 656.5
8	Rex	518.3 to 531.0	656.5 to 668.7	
9	Lloydminster	531.0 to 543.3	668.7 to 683.4	
10	Cummings	543.3 to 573.3	683.4 to 702.0	
11	Dina	573.3 to 601.0	702.0 to 736.5	
12	Duperow	601.0 to NDE	736.5 to NDE	

^A Colony channel

Loon Lake 235 and Swampy Lake 236

Column 1	Column 2	
Well Log Data		
00/1-20-86-9W5		
Item	Zone	Neutron-Density Log (m.KB)
1	Clearwater	315.0 to 373.0
2	Banff	373.0 to 494.0

3	Wabamun	494.0 to 777.0
4	Winterburn	777.0 to 963.0
5	Ireton	963.0 to 1233.0
6	Beaverhill Lake	1233.0 to 1343.7
7	Slave Point	1343.7 to 1361.0
8	Ft. Vermillion	1361.0 to 1377.5
9	Watt Mountain	1377.5 to 1382.7
10	Muskeg	1382.7 to 1452.0
11	Granite Wash	1452.0 to 1487.0
12	PreCambrian	1487.0 to NDE

Makao 120, Onion Lake 119–1, 119–2 and Seekaskootch 119

Column 1 Column 2

Well Log Data

11/14-8-56-27W3 00/11-23-54-1W4 41/6-4-55-25W3

Item	Zone	Neut-Dens Log (m.KB TVD)	Neut-Dens Log (m.KB)	Neut-Dens Log (m.KB)
1	Second White Specks	surface to 322.0	346.0 to 428.0	
2	St. Walburg (La Biche (AB)	ILND to 433.5	322.0 to 365.0	428.0 to 478.8
3	Viking	433.5 to 474.4	365.0 to 402.0	478.8 to 515.4
4	Colony	474.4 to 488.9	402.0 to 415.0	515.4 to ILND
5	McLaren	488.9 to 500.3	415.0 to 429.5	
6	Waseca	500.3 to 517.9	429.5 to 441.0	
7	Sparky	517.9 to 534.0	441.0 to 464.0	
8	General Petroleums	534.0 to 548.9	464.0 to 476.0	
9	Rex	548.9 to 582.0	476.0 to 499.0	
10	Lloydminster	582.0 to 602.6	499.0 to 515.0	
11	Cummings and Dina	602.6 to 648.0	515.0 to 536.0	
12	Duperow	648.0 to NDE	536.0 to NDE	

Ministikwan 161 and Makwa 129

Column 1 Column 2
 Well Log Data
 41/8-25-58-
 25W3 31/8-34-58-25W3

Item	Zone	Neutron-Density Log (m.KB)	Neutron-Density Log (m.KB)
1	Second White Specks, St. Walburg and Viking	219.0 to 346.5	254.6 to 387.6
2	Colony	346.5 to 371.0	387.6 to 408.0
3	McLaren	371.0 -383.0	408.0 to 421.0
4	Waseca	383.0 to 407.0	421.0 to 440.0
5	Sparky	407.0 -422.3	440.0 to 460.0
6	General Petroleums	422.3 to 433.0	460.0 to 471.2
7	Rex, Lloydminster, Cummings and Dina	433.0 to NDE	471.2 to 627.0
8	Duperow	NDE	627.0 to NDE

Neekaneet Cree Nation 160A

Column 1 Column 2
 Well Log Data
 21/8-32-7-28W3

Item	Zone	Neutron-Density Log (m.KB)
1	Belly River	surface to 625.4
2	Lea Park	625.4 to 658.4
3	Ribstone Creek	658.4 to 807.0
4	Milk River	807.0 to 946.3
5	Medicine Hat	946.3 to 1107.0
6	Second White Specks	1107.0 to 1272.0
7	Viking and Joli Fou	1272.0 to 1390.3
8	Mannville	1390.3 to 1479.3
9	Vanguard	1479.3 to 1523.0
10	Shaunovan	1523.0 to 1562.0
11	Gravelbourg	1562.0 to 1574.5
12	Mission Canyon	1574.5 to NDE

Ocean Man 69 and Flying Dust First Nation 105

Column 1 Column 2

Well Log Data

31/11-11-10-8W2 01/9-30-10-7W2

Item	Neut-Dens Log (m.KB)	Sonic Log (m.KB)	
1	Gravelbourg	ILND to 1102.0	
2	Watrous	1102.0 to 1184.4	
3	Alida and Tilston	1184.4 to NDE	
4	Souris Valley	ILND to 1433.5	NDE
5	Bakken	1433.5 to 1451.0	NDE
6	Torquay	1451.0 to NDE	NDE

Pigeon Lake 138A^A

Column 1 Column 2

Well Log Data

00/12-36-46-28W4 04/15-24-46-28W4 00/9-18-46-27W4 00/12-20-47-27W4

Item	Zone	GR-Neutron (ft.KB)	Neut-Dens log (m.KB)	Electric Log (ft.KB)	Electric Log (ft.KB)
1	Edmonton, Belly River and Lea Park	surface to 1036.0			
2	Wapiabi	1036.0 to 1197.0			
3	Cardium and Blackstone	1197.0 to 1281.3	3850 to 4020 ^B		
4	Second White Specks	1281.3 to 1423.7			
5	Viking and Joli Fou	1423.7 to 1472.0			
6	Upper Mannville	1472.0 to 1610.3			
7	Lower Mannville	1610.3 to NDE			
8	Wabamun	5591 -6295			
9	Calmar and Nisku	6295 to 6492			

10	Ireton	6492 to 6670
11	Leduc	6670 to NDE 6434 to 7210 ^C

^A The First Nation lands are located at the Banff subcrop limit. Any Banff/Exshaw remnants will be continued with the Lower Mannville.

^B Bonnie Glen Cardium Unit No. 1: definition of unitized zone

^C Bonnie Glen D-3A Gas Cap Unit: definition of unitized zone

Puskiakiwenin 122 and Unipouheos 121

Column 1 Column 2

Well Log Data

00/11-21-56-3W4	00/6-16-57-3W4 ^A	00/13-26-57-4W4 ^B	00/8-16-58-3W4		
Item	Zone	Induction Log (m.KB)	Induction Log (m.KB)	Induction Log (m.KB TVD)	Induction Log (m.KB)
1	Viking and Joli Fou	371.0 to 411.5			
2	Colony	411.5 to 427.5	409.5 to 420.0	416.5 to 427.5	403.0 to 420.0
3	McLaren	427.5 to 436.5	420.0 to 441.0	427.5 to 444.3	420.0 to 428.6
4	Waseca	436.5 to 449.5	441.0 to 456.0	444.3 to 462.7	428.6 to 447.0
5	Sparky	449.5 to 472.0	456.0 to 475.0	462.7 to 484.3	447.0 to 460.5
6	General Petroleums	472.0 to 485.0	475.0 to 488.5	484.3 to 498.0	460.5 to 475.6
7	Rex	485.0 to 491.0	488.5 to 498.5	498.0 to 509.2	475.6 to 487.5
8	Lloydminster	491.0 to 528.0	498.5 to 537.0	509.2 to NDE	487.5 to 533.0
9	Cummings	528.0 to 546.5	537.0 to NDE	NDE	533.0 to 575.0
10	Woodbend Group	546.5 to NDE	NDE	NDE	575.0 to NDE

^A McLaren channel

^B McLaren channel

Red Pheasant 108

Column 1 Column 2

Well Log Data

11/15-14-61-26W3 11/11-5-60-23W3 41/7-15-59-24W3

Item	Zone	Neutron-Density Log (m.KB)	Neutron-Density Log (m.KB)	Neutron-Density Log (m.KB)
1	Second White Specks	160.8 to 239.7	176.0 to 253.0	
2	St. Walburg	239.7 to 279.0	253.0 to 300.0	
3	Viking	279.0 to 324.0	300.0 to 339.5	
4	Mannville	292.3 to ILND	324.0 to 586.0	339.5 to 576.0
5	Souris River	586.0 to NDE	576.0 to NDE	

Saddle Lake 125

Column 1 Column 2

Well Log Data

00/11-32-57-11W4 02/6-29-57-13W4^A

Induction Log (ft.KB) Induction Log (m.KB)

Item	Zone	surface to 393.0	
1	Second White Specks	393.0 to 491.0	
2	Viking and Joli Fou	1412 to 1542	491.0 to 528.3
3	Colony	1542 to 1582	528.3 to ILND
4	Upper Grand Rapids	1582 to 1710	
5	Lower Grand Rapids	1710 to 1844	
6	Clearwater	1844 to 2025	
7	McMurray	2025 to 2132	ILND to 710.7
8	Ireton	2132 to NDE	710.7 to 872.3
9	Cooking Lake	NDE	872.3 to 934.0
10	Beaverhill Lake	NDE	934.0 to NDE

^A Mitsue Gilwood Sand Unit No. 1: definition of unitized zone

Samson 137, 137A, Louis Bull 138B, Ermineskin 138 and Montana 139

Column 1 Column 2

Well Log Data

00/6-17-46-24W4	00/9-35-44-25W4	00/14-32-44-25W4	00/10-13-44-23W4		
Item	Zone	Neut to Dens m.KB	Neut to Dens TVD m.KB	Neut to Dens m.KB	Neut to Dens ft.KB
1	Edmonton and Belly River	surface to 702.0	surface to 817.5	surface to 793.0	surface to 2230
2	Lea Park	702.0 to 831.0	817.5 to 944.0	793.0 to 925.0	2230 to 2707
3	Wapiabi	831.0 to 1067.0	944.0 to 1183.3	925.0 to 1166.0	2707 to 3466
4	Second White Specks	1067.0 to 1199.0	1183.3 to 1311.0	1166.0 to 1295.3	3466 to 3866
5	Viking	1199.0 to 1229.7	1311.0 to 1342.0	1295.3 to 1330.0	3866 to 3970
6	Joli Fou	1229.7 to 1251.5	1342.0 to 1363.6	1330.0 to 1350.7	3970 to 4040
7	Mannville	1251.5 to 1439.3	1363.6 to 1558.2	1350.7 to 1530.0	4040 to 4815
8	Banff	1439.3 to 1451.0	NP	1530.0 to 1543.0	NP
9	Wabamun	1451.0 to 1613.7	1558.2 to 1772.6	1543.0 to 1763.0	4815 to NDE
10	Calmar and Nisku	1613.7 to 1665.5	1772.6 to NDE	1763.0 to 1818.3	NDE
11	Ireton	1665.5 to 1904.0	NDE	1818.3 to NDE	NDE
12	Cooking Lake	1904.0 to NDE	NDE	NDE	NDE

Sawridge 150G

Column 1 Column 2

Well Log Data

00/2-6-73-5W5 00/4-19-71-4W5^A

Item	Zone	Sonic Log (ft.KB)	Induction Log (ft.KB)
1	Colorado Group	surface to 1248	
2	Viking	1248 to 1334	

3	Mannville	1334 to 2240	
4	Banff and Exshaw	2240 to 2440	
5	Wabamun	2440 to 3336	
6	Winterburn	3336 to 3647	
7	Ireton	3647 to 4888	
8	Waterways	4888 to 5450	
9	Slave Point	5450 to 5496	
10	Watt Mountain	5496 to 5578	
11	Gilwood	5578 to 5860	6112 to 6146 ^A
12	Muskeg	5860 to 5920	
13	Keg River	5920 to 6321	
14	Lower Elk Point	6321 to NDE	

^A Mitsue Gilwood Sand Unit No. 1: definition of unitized zone

Sharphead 141 (extinct)

Column 1 Column 2

Well Log Data

00/6-1-43-26W4 00/14-2-43-26W4

Item	Zone	Induction Log (m.KB)	Sonic Log (m.KB)
1	Horseshoe Canyon	surface to 552.0	
2	Belly River and Lea Park	552.0 -1016.0	
3	Wapiabi, Cardium and Blackstone	1016.0 to 1270.0	
4	Second White Specks	ILND to 1384.5	1270.0 to 1405.0
5	Viking and Joli Fou	1384.5 to 1436.0	1405.0 to NDE
6	Mannville	1436.0 to 1625.0	NDE
7	Banff and Exshaw	1625. 0 -1652.5	NDE
8	Wabamun	1652.5 to NDE	NDE

Siksika 146

Column 1 Column 2

Well Log Data

00/14-3-23-23W4	00/5-19-22-23W4	00/4-4-21-20W4	00/2-29-20-20W4	00/6-20-20-19W4		
Item	Zone	Sonic Log (m.KB)	Neut-Dens (m.KB)	Neut-Dens (m.KB)	Neut-Dens (m.KB)	Sonic Log (m.KB)
1	Edmonton and Belly River	surface to 812.0	surface to 763.5	surface to 548.5	surface to 585.0	surface to 603.5
2	Pakowki	812.0 to 854.5	763.5 to 810.0	548.5 to 593.0	585.0 to 630.0	603.5 to 656.0
3	Milk River	854.5 to 937.5	810.0 to 892.0	593.0 to 686.0	630.0 to 722.5	656.0 to 738.5
4	Upper Colorado (to top SWSP)	937.5 to 1242.0	892.0 to 1200.0	686.0 to 977.5	722.5 to 1018.6	738.5 to 1026.6
5	Medicine Hat	982.3 to 1019.0	936.5 to 971.3	725.0 to 765.0	765.0 to 803.0	778.0 to 817.5
6	Second White Specks	1242.0 to 1370.7	1200.0 to 1330.0	977.5 to 1095.4	1018.6 to 1144.0	1026.6 to 1147.7
7	Viking Lag Sand	NP	1330.0 to 1333.0	1095.4 to 1101.0	NP	NP
8	Viking (Bow Island)	1370.7 to 1475.0	1333.0 - 1441.5	1101.0 to 1203.7	1144.0 to 1248.5	1147.7 to 1250.0
9	Mannville	1475.0 to 1647.0	1441.5 to 1595.5	1203.7 to 1350.0	1248.5 to 1431.3	1250.0 to 1413.7
10	Pekisko	1647.0 to 1752.0	1595.5 to NDE	1350.0 to NDE	1431.3 to 1477.3	1413.7 to 1476.3
11	Banff and Exshaw	1752.0 to 1896.0	NDE	NDE	1477.3 to 1617.0	1476.3 to 1630.0
12	Wabamun	1896.0 to 2065.7	NDE	NDE	1617.0 to 1753.0	1630.0 to 1755.0
13	Calmar and Nisku	2065.7 to 2096.0	NDE	NDE	1753.0 to 1796.5	1755.0 to 1793.7
14	Ireton and Leduc	2096.0 to 2312.0	NDE	NDE	1796.5 to NDE	1793.7 to NDE
15	Cooking Lake	2312.0 to 2365.0	NDE	NDE	NDE	NDE
16	Beaverhill Lake Group	2365.0 - 2514.5	NDE	NDE	NDE	NDE
17	Elk Point Group	2514.5 to NDE	NDE	NDE	NDE	NDE

Stoney 142,143,144 and Tsuut'ina Nation 145

Column 1 Column 2

Well Log Data

00/8-13-27-3W5	00/2-33-25-6W5 ^A	00/10-34-24-6W5(5-34) ^B	00/5-24-27-6W5 ^C		
Item	Zone	Induction Log (m.KB)	Neutron Log (ft.KB MD)	Sonic Log (ft.KB MD)	Sonic Log (ft.KB MD)
1	Belly River	surface to 1743.0			
2	Wapiabi	1743.0 to 2121.0			
3	Cardium and Blackstone	2121.0 to 2418.0			
4	Viking and Joli Fou	2418.0 to 2498.0			
5	Blairmore ^D	2498.0 to 2729.0			
6	Mount Head	NP			
7	Turner Valley	2729.0 to 2775.0	11154 to 11485 ^A	11920 to 12280 ^B	9978 to 10198 ^C
8	Shunda	2775.0 to 2828.0			
9	Pekisko	2828.0 to 2929.0			
10	Banff and Exshaw	2929.0 to 3079.0			
11	Wabamun Group	3079.0 to 3318.0			
12	Winterburn Group	3318.0 to 3356.0			
13	Ireton	3356.0 to 3368.0			
14	Leduc	3368.0 to 3599.0			
15	Cooking Lake	3599.0 to NDE			

^A Jumping Pound West Unit #1: definition of unitized zone

^B Jumping Pound West Unit #2: definition of unitized zone

^C Wildcat Hills Unit: definition of unitized zone

^D Includes any remnant Jurassic strata: Fernie, Nordegg

Stony Plain 135

Column 1	Column 2	
Well Log Data		
03/13-3-52-26W4	00/14-3-52-26W4	
Item	Zone	Induction Log (m.KB) Electric Log (m.KB)
1	Edmonton and Belly River	surface to 529.0
2	Lea Park	529.0 to 691.0
3	Wapiabi	691.0 to 890.0
4	Second White Specks	890.0 to 1029.0
5	Viking and Joli Fou	1029.0 to 1076.0
6	Mannville Group	1076.0 to 1332.0
7	Wabamun	1332.0 to 1421.0
8	Graminia, Calmar and Nisku	1421.0 to 1502.0
9	Ireton, Leduc and Cooking Lake	1502.0 to NDE
10	1573.4 to NDE ^A	

^A Leduc/Cooking Lake only

Sturgeon Lake 154

Column 1	Column 2	
Well Log Data		
00/9-18-70-23W5	00/4-25-70-23W5	
Item	Zone	Sonic Log (ft.KB) Sonic Log (ft.KB)
1	Wapiabi	surface to 1844 surface to 1755
2	Bad Heart	1844 to 1897 1755 to 1795
3	Kaskapau	1897 to 2721 1795 to 2605
4	Dunvegan	2721 to 2960 2605 to 2835
5	Shaftesbury	2960 to 3467 2835 to 3327
6	Peace River	3467 to 3540 3327 to 3395
7	Harmon	3540 to 3623 3395 to 3482
8	Spirit River	3623 to 4573 3482 to 4440
9	Bluesky and Gething	4573 to 4805 4440 to 4586
10	Cadomin	4805 to 4890 4586 to 4658
11	Fernie and Nordegg	4890 to 5092 4658 to 4949
12	Montney	5092 to 5459 4949 to 5288

13	Belloy	5459 to 5590	5288 to 5373
14	Debolt	5590 to 6186	5373 to 5997
15	Shunda	6186 to 6473	5997 to 6290
16	Pekisko	6473 to 6674	6290 to 6486
17	Banff	6674 to 7378	6486 to 7208
18	Exshaw	7378 to 7397	7208 to 7228
19	Wabamun	7397 to 8184	7228 to 8021
20	Winterburn	8184 to 8496	8021 to 8422
21	Ireton	8496 to 8637	8422 to 9316
22	Leduc	8637 to NDE	NP
23	Beaverhill Lake Gp.	NDE	9316 to 9610
24	Slave Point	NDE	9610 to 9660
25	Gilwood and Granite Wash	NDE	9660 to 9730
26	PreCambrian	NDE	9730 to NDE

Sucker Creek 150A

Column 1	Column 2	
Well Log Data		
00/16-36-74-15W5		
Item	Zone	Sonic Log (m.KB)
1	Shaftesbury	surface to 428
2	Paddy, Cadotte and Harmon	428 to 463
3	Spirit River Formation	463 to 737
4	Bluesky and Gething	737 to 768
5	Debolt	768 to 863
6	Shunda	863 to 976
7	Pekisko	976 to 1031
8	Banff	1031 to 1265
9	Wabamun	1265 to 1535
10	Winterburn Group	1535 to 1657
11	Woodbend Group	1657 to 1956
12	Beaverhill Lake and Slave Point	1956 to 2084
13	Gilwood and Watt Mountain	2084 to 2113
14	Granite Wash	2113 to 2152
15	PreCambrian	2152 to NDE

Sunchild 202 and O'Chiese 203

Column 1	Column 2			
Well Log Data				
00/4-11-44-10W5	00/10-15-43-10W5	00/6-30-42-9W5		
Item	Zone	Neut-Dens Log (m.KB)	Neut-Dens Log (m.KB)	Neut-Dens Log (m.KB)
1	Edmonton and Belly River	surface to 1765.0	surface to 1742.0	surface to 1700.0
2	Upper Colorado	1765. 0 to 2120.0	1742.0 to 2126.0	1700.0 to 2062.0
3	Cardium	2120.0 to 2186.0	2126.0 to 2197.7	2062.0 to 2134.7
4	Lower Colorado	2186.0 to 2522.5	2197.7 to 2499.0	2134.7 to 2451.9
5	Viking	2522.5 to 2550.0	2499.0 to 2526.0	2451.9 to 2478.6
6	Upper Mannville	2550.0 to 2720.0	2526.0 to 2678.0	2478.6 to 2627.0
7	Lower Mannville	2720.0 to 2791.4	2678.0 to 2757.0	2627.0 to 2702.5
8	Fernie, Rock Creek and Poker Chip	2791.4 to 2833.0	2757.0 to 2794.8	2702.5 to 2741.8
9	Nordegg	2833.0 to 2861.0	2794.8 to 2824.0	2741.8 to 2771.0
10	Shunda	2861.0 to 2892.2	2824.0 to 2854.8	2771.0 to 2804.2
11	Pekisko	2892.2 to 2926.0	2854.8 to 2905.0	2804.2 to 2839.0
12	Banff and Exshaw	2926.0 to NDE	2905.0 to NDE	2839.0 to 3021.3
13	Wabamun	NDE	NDE	3021.3 to NDE

Thunderchild 115K and Thunderchild First Nation 115B,115C, 115D, 115E, 115F, 115G, 115H, 115I, 115J, 115L, 115M, 115N, 115Q, 115R, 115S, 115T, 115U, 115V, 115W, 115X, 115Z

Column 1	Column 2		
Well Log Data			
91/5-25-59-23W3	21/16-3-52-20W3		
Item	Zone	Neut-Dens Log (m.KB MD)	Neut-Dens Log (m.KB)
1	St. Walburg	231.6 to 274.4	
2	Viking	274.4 to 320.8	
3	Colony	320.8 to 340.0	454.0 to 478.0
4	McLaren	340.0 to 352.0	478.0 to 489.0
5	Waseca	352. 0 to ILND	489.0 to 516.0

6	Sparky	516.0 to 546.0
7	General Petroleums	546.0 to 575.0
8	Rex	575.0 to 608.0
9	Lloydminster	608.0 to 646.0
10	Cummings	646.0 to 672.0
11	Devonian	672.0 to NDE

Utikoomak Lake 155

Column 1 Column 2

Well Log Data

00/6-30-80-
9W5

12-28-80-9W5

2-21-79-8W5

Item	Zone	Sonic Log (m.KB)	Electric Log (ft.KB)	Electric Log (ft.KB)
1	Peace River and Spirit River	315.5 to 558.7		
2	Shunda and Pekisko	558.7 to 607.0		
3	Banff and Exshaw	607.0 to 884.0		
4	Wabamun	884.0 to 1125.0		
5	Winterburn	1125.0 -1267.0		
6	Ireton	1267.0 to 1568.0		
7	Beaverhill Lake	1568.0 to 1686.0		
8	Slave Point and Ft. Vermillion	1686.0 to 1718.0		
9	Watt Mountain and Gilwood	1718.0 to 1724.0	5552 to 5576 ^A	5689 to 5771 ^B
10	Muskeg and Keg River	1724.0 to 1750.0		
11	Granite Wash	1750.0 -1755.0		
12	PreCambrian	1755.0 to NDE		

^A West Nipisi Unit No. 1: definition of unitized zone

^B Nipisi Gilwood Unit No. 1: definition of unitized zone

Wabamun 133A

Column 1 Column 2

Well Log Data

00/15-23-52-4W5

Item	Zone	Sonic Log (m.KB)
1	Belly River	surface to 710.0
2	Lea Park	710.0 -865.0
3	Wapiabi	865.0 to 1016.0
4	Cardium and L. Colorado	1016.0 to 1245.0
5	Viking	1245.0 to 1276.0
6	Joli Fou	1276.0 to 1295.5
7	Upper Mannville	1295.5 to 1424.0
8	Glaucinite	1424.0 to 1445.0
9	Lower Mannville	1445.0 to 1474.0
10	Banff and Exshaw	1474.0 to 1631.0
11	Wabamun	1631.0 to 1790.0
12	Graminia, Blueridge and Calmar	1790.0 to 1840.0
13	Nisku	1840.0 to 1877.0
14	Ireton	1877.0 to NDE

Wabasca 166, 166A, 166B, 166C, 166D

Column 1 Column 2

Well Log Data

00/11-10-81-25W4

Item	Zone	Induction Log (ft.KB)
1	Pelican and Joil Fou	720 to 824
2	Grand Rapids	824 to 1116
3	Clearwater	1116 to 1452
4	Wabiskaw	1452 to 1536
5	McMurray	1536 to 1608
6	Wabamun	1608 to 1677
7	Winterburn	1677 to NDE

White Bear 70

Column 1	Column 2	
Well Log Data		
01/5-15-10-2W2		
Item	Zone	Neutron Log (ft.KB)
1	shales	
2	Viking	2670 to 2843
3	Mannville	2843 to 3200
4	Gravelbourg	3200 to 3645
5	Watrous	3645 to 3902
6	Tilston	3902 to 3944
7	Souris Valley	3944 to 4380
8	Bakken	4380 to 4420
9	Torquay	4420 to 4590
10	Birdbear	4590 to 4690
11	Duperow	4690 to 5214
12	Souris River	5214 to 5593
13	Dawson Bay	5593 to 5780
14	Prairie Evaporite	5780 to NDE

White Fish Lake 128

Column 1	Column 2		
Well Log Data			
00/14-11-62-13W4 00/10-16-62-12W4			
Colony channel	non channel		
Item	Zone	Induction Log (m.KB)	Induction Log (m.KB)
1	shales		
2	Viking and Joli Fou	347.6 to 386.0	347.0 to 383.5
3	Colony	386.0 to 426.0	383.5 to 397.5
4	Upper Grand Rapids 2	426.0 -439.0	397.5 to 431.0
5	Lower Grand Rapids 1	439.0 -453.0	431.0 to 445.0
6	Lower Grand Rapids 2	453.0 to 471.0	445.0 -459.0
7	Upper Clearwater	471.0 to 498.0	459.0 -491.5
8	Lower Clearwater	498.0 to 522.0	491.5 to 516.5
9	McMurray	522.0 to NDE	516.5 to 539.5

Woodland Cree 226, 227, 228

Column 1	Column 2			
Well Log Data				
00/6-18-87-18W5	00/7-24-86-14W5	00/9-34-86-17W5		
Item	Zone	Sonic Log (m.KB)	Sonic Log (m.KB)	Neut-Dens Log (m.KB)
1	Bullhead Group	surface to 494.0	surface to 475.0	surface to 498.0
2	Debolt	494.0 to 540.0	NP	498.0 to 504.0
4	Shunda	540.0 to 664.0	NP	
5	Pekisko	664.0 to 753.0	475.0 to 518.5	
6	Banff and Exshaw	753.0 to 1051.0	518.5 to 823.0	
7	Wabamun	1051.0 to 1312.0	823.0 to 1078.0	
8	Winterburn	1312.0 to 1397.0	1078.0 to 1205.5	
9	Ireton	1397.0 to 1662.0	1205.5 to 1509.0	
10	Beaverhill Lake	1662.0 to 1700.0	1509.0 to 1566.0	
11	Slave Point	1700.0 to NDE	1566.0 to 1613.5	
12	Granite Wash	1613.5 to 1614.0		
13	PreCambrian	1614.0 to NDE		

SCHEDULE 5

(Subsection 83(1))

Royalties

Interpretation

Definition of *marketable gas*

1 In this schedule, *marketable gas* means gas, consisting mainly of methane, that meets industry or utility specifications for use as a domestic, commercial or industrial fuel or as an industrial raw material.

Oil Royalty

Calculation of royalty — oil

2 (1) The royalty on oil that is obtained from, or attributable to, a contract area comprises the basic royalty determined under subsection (2) or (3) plus the supplementary royalty determined under subsection (5), all amounts to be calculated at the time and place of production.

Basic royalty — first five years

(2) During the five-year period beginning on the day on which production of oil from a contract area begins, the basic royalty is the part of the oil that is obtained from, or attributable to, each well during each month of that period, calculated in accordance with the table to this subsection.

TABLE

Column 1 Column 2

Item	Monthly Production	Royalty Per Month
	(m ³)	
1	Less than 80	10% of the total number of cubic metres
2	80 to 160	8 m ³ plus 20% of the number of cubic metres in excess of 80
3	More than 160	24 m ³ plus 26% of the number of cubic metres in excess of 160

Basic royalty — subsequent years

(3) Beginning immediately after the period referred to in subsection (2), the basic royalty is the part of the oil that is obtained from, or attributable to, each well in a contract area during each

subsequent month, calculated in accordance with the table to this subsection.

TABLE

Column 1	Column 2	
Item	Monthly Production (m ³)	Royalty Per Month
1	Less than 80	10% of the total number of cubic metres
2	80 to 160	8 m ³ plus 20% of the number of cubic metres in excess of 80
3	More than 160 to 795	24 m ³ plus 26% of the number of cubic metres in excess of 160
4	More than 795	189 m ³ plus 40% of the number of cubic metres in excess of 795

Notice to council

(4) The Minister must send the council notice of the date of commencement determined under subsection (2).

Supplementary royalty

(5) The supplementary royalty is

(a) in respect of oil to which subsection (2) applies, the royalty determined by the formula

$$(T - B) 0.50 (P - R)$$

where

T is the amount of oil, in cubic metres, that is obtained from, or attributable to, each well in a contract area during the month,

B is the basic oil royalty, in cubic metres, calculated under subsection (2) or (3),

P is the actual selling price of the oil per cubic metre, and

R is the reference price, equal to

(i) in the case of oil obtained from a source set out in column 2 of the table to this subsection, the amount set out in column 3, and

(ii) in any other case, \$25 per cubic metre;

and

(b) in respect of oil to which subsection (3) applies, the royalty determined by the formula

$$(T - B) [0.75 (P - R - \$12.58) + \$6.29]$$

where

T is the amount of oil, in cubic metres, that is obtained from, or attributable to, each well in the contract area during the month,

B is the basic oil royalty, in cubic metres, calculated under subsection (2) or (3),

P is the actual selling price of the oil per cubic metre, and

R is the reference price, equal to

(a) in the case of oil obtained from a source set out in column 2 of the table to this subsection, the amount set out in column 3, and

(b) in any other case, \$25 per cubic metre.

TABLE

Column 1	Column 2	Column 3	
Item	Reserve	Source Producing Before January 1, 1974	Reference Price (\$/m ³)
1	Pigeon Lake Indian	Cardium	24.04
	Reserve No. 138A	Leduc	25.37
2	Sawridge Indian		
	Reserve No. 150G	Gilwood Sand	25.13
3	Stony Plain Indian	Lower Cretaceous	24.64
	Reserve No. 135	Acheson Leduc	24.45
	Sturgeon Lake	Yekau Lake Leduc	25.01
4	Indian Reserve No. 154	Leduc	21.51
5	Utikoomak Indian	Gilwood Sand Unit No. 1	25.00
	Reserve No. 155A	West Nipisi Unit No. 1	24.58
6	Whitebear Indian	10-2-10-2 W2 well	22.40
	Reserve No. 70	8-9-10-2 W2 well	22.63
7	Blackfoot Indian		
	Reserve No. 146	6-25-20-21 W4 well	18.19
8	Ermineskin Indian		
	Reserve No. 138	6-11-45-25 W4 well	19.18

Gas Royalty

Calculation of royalty — gas

3 (1) When gas that is obtained from, or attributable to, a contract area is sold, the royalty payable is the gross royalty value of the gas, determined under subsection (2), less the portion of the cost of gathering, dehydrating, compressing and processing the gas that is equal to its gross

royalty value divided by its total value.

Gross royalty

(2) The gross royalty value of gas that is obtained from or attributable to a contract area is the basic gross royalty value of 25% of the quantity of that gas multiplied by the actual selling price plus the supplementary gross royalty value determined under subsection (3), all amounts to be calculated at the time and place of production.

Supplementary gross royalty

(3) The supplementary gross royalty value on gas, individually determined for each gas component produced, is equal to the sum of the products obtained by multiplying 75% of the quantity of each gas component by

(a) in the case of marketable gas,

(i) if the actual selling price exceeds $\$10.65/10^3 \text{ m}^3$ but does not exceed $\$24.85/10^3 \text{ m}^3$, 30% of the difference between the actual selling price per 10^3 m^3 and $\$10.65/10^3 \text{ m}^3$, or

(ii) if the actual selling price exceeds $\$24.85/10^3 \text{ m}^3$, $\$4.26/10^3 \text{ m}^3$ plus 55% of the portion of the actual selling price in excess of $\$24.85/10^3 \text{ m}^3$;

(b) in the case of pentanes plus, if the actual selling price exceeds \$27.68 per cubic metre, 50% of the portion of the actual selling price in excess of \$27.68 per cubic metre;

(c) in the case of sulphur, if the actual selling price exceeds \$39.37 per tonne, 50% of the portion of the actual selling price in excess of \$39.37 per tonne;

(d) in the case of other components from a source that produces marketable gas, an amount equal to the product obtained by multiplying the actual selling price of each of those components by the percentage by which the overall royalty rate for marketable gas, taking both basic and supplementary gross royalty values into account, exceeds 25%; and

(e) in the case of other components from a source that does not produce marketable gas, the lesser of one third of the actual selling price of that component and the amount determined under any special agreement entered into under subsection 4(2) of the Act.

Measurement of volumes

(4) For the purposes of this section, volumes referred to are volumes measured at standard

conditions of 101.325 kPa and 15°C.

Notice to council

(5) The Minister must send the council notice of any costs that are deducted under subsection (1) for gathering, dehydrating, compressing and processing.

Royalty on Oil or Gas Consumed

No royalty payable

4 (1) Despite sections 2 and 3, the royalty payable on oil or gas obtained from, or attributable to, a contract area is nil if the oil or gas is consumed in drilling for, producing or processing oil or gas that is obtained from, or attributable to, that contract area.

Royalty payable

(2) However, subsection (1) does not apply in respect of oil or gas that is consumed for the production or processing of crude bitumen.

SCHEDULE 6

(Section 114)

Administrative Monetary Penalties

PART 1

Indian Oil and Gas Act

Column 1	Column 2	
Item	Provision	Penalty (\$)
1	5(1)(a)(i)	10 000
2	5(1)(a)(ii)	10 000
3	16	10 000
4	17(2)	10 000

PART 2

Indian Oil And Gas Regulations

Column 1	Column 2	
Item	Provision	Penalty (\$)
1	16	10 000
2	19(2)	1 000
3	21(a)(i)	1 000
4	21(a)(ii)	1 000
5	21(a)(iii)	1 000
6	21(a)(iv)	1 000
7	21(a)(v)	1 000
8	21(b)(i)	1 000
9	21(b)(ii)	1 000
10	21(b)(iii)	1 000
11	21(b)(iv)	1 000
12	21(b)(v)	1 000
13	21(b)(vi)	1 000
14	21(c)(i)	1 000

Column 1 Column 2

Item	Provision	Penalty (\$)
15	21(c)(ii)	1 000
16	21(c)(iii)	1 000
17	21(c)(iv)	1 000
18	21(c)(v)	1 000
19	21(c)(vi)	1 000
20	21(c)(vii)	1 000
21	21(d)(i)	1 000
22	21(d)(ii)	1 000
23	21(d)(iii)	1 000
24	21(d)(iv)	1 000
25	21(d)(v)	1 000
26	21(d)(vi)	1 000
27	21(d)(vii)	1 000
28	21(d)(viii)	1 000
29	21(e)	1 000
30	21(f)	1 000
31	28	10 000
32	32(1)	2 500
33	32(2)(a)	10 000
34	32(2)(b)	2 500 (per hole)
35	32(2)(c)	2 500
36	32(2)(d)	10 000
37	32(2)(f)	1 500
38	33(1)	10 000
39	34	10 000
40	59(2)	10 000
41	76(5)	10 000
42	79	10 000
43	80(2)(a)	1 000
44	80(2)(b)	1 000
45	80(2)(c)	1 000
46	80(2)(d)	1 000
47	81(1)	2 000
48	99	1 000