

Royalty Programs for Deep Gas Wells

Petroleum and Natural Gas Act

Latest Revision: This bulletin has been rewritten and replaces the previous version dated July 2014. For a summary of the key changes, see Latest Revision at the end of this document.

This bulletin provides specific information on the deep well credit, the deep re-entry credit and the deep discovery well exemption for natural gas producers. The credits and exemption are earned by drilling on both Crown and freehold lands, and may be applied against either gas royalties or freehold production taxes.

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Obtaining a Credit or Exemption

We determine a well's eligibility, what credit or exemption applies, and the credit or exemption amounts. Eligibility is based on the information the well operator provides on the drilling and completion reports, directional surveys, and information submitted to the Oil and Gas Commission (OGC) through [eSubmission](#). It is important to note that the OGC verifies the depths to completion points for all wells.

We allocate deep well credits and deep re-entry credits for a qualifying well between each royalty taxpayer with a reporting interest in the deepest well event, based on

information provided in the Petrinex Royalty Tax Payer module (or on the Reporting Interest Statement **BC12** for periods prior to October 2018).

A well event may qualify for the **deep discovery well exemption** and either the deep well or deep re-entry credit. Producers are entitled to the exemption or credit that provides the greatest benefit.

Note: A well can qualify for both the deep well and deep re-entry credits; however, for royalty purposes, a gas well event consists of all completions in a geological zone. Consequently, if a deep re-entry well event is in the same zone as a deep well event, the deep re-entry credit will displace any unused balance of the deep well credit.

The deep well or deep re-entry credit is deducted from royalties on production from all deep well events within the same well.

Applying the Credit to Net Royalties

There is a minimum royalty program in place that may limit the amount of deep well credit or deep re-entry credit a producer may deduct from the gross royalty payable less producer cost of service (PCOS). For detailed information on the Minimum Royalty Program and how it affects the application of a deep well or deep re-entry credit to net royalties, refer to **Bulletin PNG 008**, Minimum Royalty Program.

Royalties are calculated based on marketable gas volumes reported in Petrinex using the Allocations, NGL & Sulphur Valuation, Oil Pipeline Splits, and Oil Valuation Royalty Tax Payer modules.

Your monthly Crown invoice summary PDF/CSV will show your royalty payable after deducting any allowable deep well or deep well re-entry credit. Your Gas Invoice Deep Well Bank Invoice Details CSV will show the producer's opening balance for the month, the amount used or transferred, and the closing balance. A distinction is not made on the invoice between the producer's deep well and deep re-entry credits.

If the unused balance of the credit for a well event is less than the gross royalty payable less PCOS for the well event, the invoice will show the net royalty payable after deducting the unused balance. Minimum royalties are not applicable in the month the credit is depleted.

If the reporting interests in the deepest well event are changed, we transfer a portion of any unused balance in the deep well credit to the purchaser based on the new reporting interests.

The following sections describe how we calculate the deep well credit, the deep re-entry credit and the deep discovery well exemption.

Deep Well Credit

Qualifying Criteria

Only gas wells are eligible for a deep well credit. The deepest productive well event in the well is used to determine the true vertical depth (TVD).

Effective April 1, 2014, deep gas wells are classified as either tier 1 or tier 2. The tier of the well depends on the type of deep gas well and the well spud date.

Shallow gas wells with long horizontal segments that have a spud date on or after April 1, 2014 are classified as tier 1. All other wells that qualify or have qualified for deep well credits are classified as tier 2.

Tier 1

Wells qualify for the tier 1 deep well credit if the well meets **all** the following criteria:

- The well is a horizontal well
- The well has a spud date on or after April 1, 2014
- The deepest productive well event in the well has a TVD to a completion point in the well of 1,900 metres or less
- The deepest productive well event in the well has a deep well depth greater than 2,500 metres

Tier 1 deep well credits range from a minimum of \$445,430 (for wells with a deep well depth of 2,501 metres) to a maximum of \$2,811,000 (for wells with deep well depth of 5,500 metres or deeper).

Tier 2

Wells qualify for the tier 2 deep well credit if the gas well meets the following criteria.

For vertical wells:

- The well has a spud date on or after January 1, 2009
- The deepest productive well event in the well has a TVD to a completion point in the well greater than 2,500 metres

For horizontal wells:

- The well has a spud date on or after September 1, 2009
- The deepest productive well event in the well has a TVD to a completion point in the well greater than 1,900 metres
- The deepest productive well event in the well has a deep well depth greater than 2,500 metres

Tier 2 deep well credits range from a minimum of \$1,400 (for wells with an east sweet deep well depth of 2,501 metres spudded on or before August 31, 2009) to a maximum of \$4,715,000 (for wells with a west special sour deep well depth of 5,500 metres or deeper spudded after August 31, 2009).

Note: Deep gas wells with a spud date on or after April 1, 2014 are prevented from having both ultramarginal and deep status because horizontal wells are no longer eligible for ultramarginal status and depth requirements restrict vertical wells from qualifying as ultramarginal or deep status.

Spud dates after August 31, 2009

For horizontal wells with a spud date **after August 31, 2009**, the minimum TVD to completion point to qualify for a deep well credit was reduced to 1,901 metres. However, horizontal wells with spud dates **after** August 31, 2009 must also have a deep well depth greater than 2,500 metres to qualify for a deep well credit.

Well events in a well with a spud date **after** August 31, 2009 will not receive a deep well credit if the well event is ultramarginal (it may be marginal). For example, if a horizontal well event with a spud date **after** August 31, 2009 is ultramarginal and has a TVD to top of pay and TVD to completion point between 1,900 and 2,300 metres, it does not qualify as a deep well event.

Spud dates between January 1, 2009 and August 31, 2009

For wells with a spud date **on or after January 1, 2009 (but before September 1, 2009)**, the eligibility for deep well credits is based on the true vertical depth (TVD) to a completion point in the well. TVD to the completion point is the distance from the completion point to a point directly above the completion point that is at the same elevation as the kelly bushing used in drilling the well. The completion point depends on the type of well, as follows:

- For vertical wells with open hole completions, the completion point is the bottom of the casing
- For vertical wells that do not have open hole completions, the completion point is the bottom of the deepest perforations in the casing
- For horizontal wells, the completion point is the point in the well bore at which the angle of the well bore first exceeds 80 degrees from vertical

Horizontal wells are wells with a wellbore that is:

- drilled at an angle of at least 80 degrees from the vertical, where the angle is measured for a line connecting the wellbore's initial point of penetration into a productive zone to the end point in that zone, and
- at least 100 metres in length from point of penetration into the productive zone to the end point in that zone.

A vertical well is any well, including a directional well, that **does not** qualify as a horizontal well.

Producers qualify for the deep well credit if the well meets the following criteria:

- The well has a spud date on or after January 1, 2009
- The deepest productive well event in the well has a TVD to a completion point in the well greater than:
 - 2,500 metres if it is in a vertical well, and
 - 2,300 metres if it is in a horizontal well.

We obtain TVD to completion point information from the drilling and completion data industry provides to the OGC.

A well event is given deep status at the time the initial well completion event is reported to the OGC by [eSubmission](#). The deep well credit is made effective for the first production month; however, ultramarginal status is not determined until after the first 12 months on production. This means that if a well event is found to be ultramarginal, invoices are amended back to the first production month to allow the ultramarginal reduction and to reverse the deep credit that was previously in effect.

Spud dates after November 30, 2003 and before January 1, 2009

Well events with spud dates **after November 30, 2003 and before January 1, 2009** continue to have the same definitions, qualifying criteria, and calculations they had on December 31, 2008. Contact us if you need more information about these wells.

Calculating the Credit

The value of the tier 1 deep well credit is designed to cover a portion of the drilling and completion costs for shallower wells with long horizontal segments. We calculate the credit amount using Table 3 below and the appropriate formula.

The value of the tier 2 deep well credit is designed to reflect higher drilling and completion costs that relate to factors such as bottom hole location, the hydrogen sulphide (H₂S) content and the depth of the well. We categorize the well type, determine which section of the Deep Well Credit Table 1 or 2 applies and then calculate

the credit amount using the appropriate formula. Each of these steps is explained further below.

Well Type

We determine the well type using two variables:

1. Bottom hole location (east or west)

To recognize the higher costs associated with drilling in specific underdeveloped areas of the province, there are two bottom hole location categories: east and west.

Schedule 1 describes the locations within the east area for wells with spud dates **on or after January 1, 2009**. Locations that are not on these schedules are considered to be in the west areas. **Figure 1** is a map of the east/west lines for wells with spud dates **on or after January 1, 2009**.

2. H₂S content (special sour or sweet)

To recognize the higher costs associated with sour gas, there are two categories based on H₂S content: special sour and sweet. Deep wells classified as special sour are eligible for a greater credit than wells classified as sweet.

For a well to be classified as special sour, it must meet the required distance from an urban centre and the corresponding maximum potential H₂S release rate as outlined below.

Distance from the Well to the Corporate Boundaries of an Urban Centre	Maximum Potential H ₂ S Release Rate From the Well
Within 500 metres	0.01 m ³ /s or greater and less than 0.1 m ³ /s
Within 1.5 kilometres	0.1 m ³ /s or greater and less than 0.3 m ³ /s
Within 5 kilometres	0.3 m ³ /s or greater and less than 2.0 m ³ /s
5 kilometres or greater	2.0 m ³ /s or greater

All deep wells that do not meet the above criteria are classified as sweet.

Deep Well Credit Tables

The well type determines which of the following tables we use for calculating the credit. Tier 2 wells with spud dates after August 31, 2009 receive a credit that is 15% higher than wells with spud dates on or before August 31, 2009. The higher credit is reflected in the Cumulative and Incremental Value columns in Tables 1 and 2 below.

Table 1(For **qualifying** Tier 2 wells with spud dates on or before August 31, 2009)

West Special Sour			East Special Sour		
Table Depth (Metres)	Cumulative Value (\$000)	Incremental Value (\$/Metre)	Table Depth (Metres)	Cumulative Value (\$000)	Incremental Value (\$/Metre)
2500	0	4200	2500	0	1500
3000	2100	600	3000	750	650
3500	2400	700	3500	1075	750
4000	2750	800	4000	1450	850
4500	3150	900	4500	1875	1000
5000	3600	1000	5000	2375	1100
5500	4100		5500	2925	
West Sweet			East Sweet		
Table Depth (Metres)	Cumulative Value (\$000)	Incremental Value (\$/Metre)	Table Depth (Metres)	Cumulative Value (\$000)	Incremental Value (\$/Metre)
2500	0	3800	2500	0	1400
3000	1900	550	3000	700	600
3500	2175	600	3500	1000	700
4000	2475	700	4000	1350	800
4500	2825	800	4500	1750	900
5000	3225	900	5000	2200	1000
5500	3675		5500	2700	

Table 2(For **qualifying** Tier 2 wells with spud dates after August 31, 2009)

West Special Sour			East Special Sour		
Table Depth (Metres)	Cumulative Value (\$000)	Incremental Value (\$/Metre)	Table Depth (Metres)	Cumulative Value (\$000)	Incremental Value (\$/Metre)
2500	0	4830	2500	0	1725
3000	2415	690	3000	863	748
3500	2760	805	3500	1236	863
4000	3163	920	4000	1668	978
4500	3623	1035	4500	2156	1150
5000	4140	1150	5000	2731	1265
5500	4715		5500	3364	
West Sweet			East Sweet		
Table Depth (Metres)	Cumulative Value (\$000)	Incremental Value (\$/Metre)	Table Depth (Metres)	Cumulative Value (\$000)	Incremental Value (\$/Metre)
2500	0	4370	2500	0	1610
3000	2185	633	3000	805	690
3500	2501	690	3500	1150	805
4000	2846	805	4000	1553	920
4500	3249	920	4500	2013	1035
5000	3709	1035	5000	2530	1150
5500	4226		5500	3105	

Table 3
(For **qualifying Tier 1** wells with spud dates after March 31, 2014)

Deep Well Depth (Metres)	Cumulative Value (\$000)	Incremental Value (\$/Metre)
2500	445	430
3000	660	720
3500	1020	980
4000	1510	1006
4500	2013	974
5000	2500	622
5500	2811	

The Formula

Using one of the tables above, we calculate a producer's deep well credit for a qualifying well as follows:

$$[\text{cumulative value} + \text{incremental value} \times (\text{deep well depth of the deepest well event} - \text{table depth})] \times \text{producer's share}$$

Deep well depth on or after January 1, 2009

For well events in wells with spud dates on or after January 1, 2009, deep well depth is calculated in the following ways:

- In a vertical well, deep well depth is the measured depth to the completion point (MDCP). For a well event that is in a vertical well and is **not** an open hole completion, this is the distance along the well bore from the kelly bushing of the rig used to drill the well to the bottom of the deepest perforation in the well event. For a well event that is in a vertical well and is an open hole completion, this is the distance along the well bore to the bottom of the casing.
- In a horizontal well, deep well depth is MDCP plus the horizontal length factor (HLF) multiplied by the positive difference between total measured depth and MDCP, as follows:

$$\text{MDCP} + [\text{HLF} \times (\text{total measured depth} - \text{MDCP})]$$

The HLF is calculated as follows:

- for a well event in a well that has a spud date **on or before August 31, 2009**, and an MDCP of between 2,300 metres and 2,875 metres, the HLF is:

$$[60 - 0.035 \times (\text{MDCP} - 2,300)] / 100$$

- for a well event in a well that has a spud date **after August 31, 2009**, and a MDCP equal to or less than 2,875 metres, the HLF is the lesser of:
 - 1, or
 - $[60 - 0.035 \times (\text{MDCP} - 2,300)] / 100$
- for a well event with a MDCP deeper than 2,875 metres, the HLF is 0.4.

This formula will give a result that is greater than 0.6 for well events with spud dates after August 31, 2009 and MDCP less than 2,300 metres. For example, if MDCP is 1,900 metres, the horizontal length factor is 0.74. For well events with spud dates on or before August 31, 2009, the horizontal length factor cannot be more than 0.6 because MDCP may not be less than 2,300 metres.

Table depth

The table depth for a well is the deep well depth of the deepest well event rounded down to the nearest 500 metres. For example, if the deepest well event has a deep well depth of 3,785 metres, the table depth is 3,500. Possible table depths are listed in the tables above.

Cumulative value

The cumulative value for a well is shown in the cumulative value column on the same row as the table depth for the well in the appropriate table above. For example, for a west special sour well with a spud date on or before August 31, 2009, in which the deep well depth of the deepest well event is 3,785 metres, the cumulative value is \$2,400,000, as shown in the 3,500 metre row of the West Special Sour table in Table 1 above.

Incremental value

The incremental value for a well is shown in the incremental value column on the same row as the table depth for the well in the appropriate table above. It is the additional credit per metre of depth in excess of the table depth. For example, for a west special sour well with a spud date on or before August 31, 2009, in which the deep well depth of the deepest well event is 3,785 metres, the incremental value is \$700 per metre, as shown in the 3,500 metre row of the West Special Sour table in Table 1 above.

Producer's share

The producer's share is the producer's proportionate interest in the deepest well event in that well. If there is more than one producer with an ownership interest in production from the deepest well event, each producer will be allocated a portion of the deep well credit based on their ownership share.

Example 1

Spud date:	January 2020
Type of well:	Vertical
H₂S content:	Special sour
Location:	West
MDCP:	3,785 metres
Producer's share:	Producer A owns 60% and Producer B owns 40%

The deep well credit is calculated using the West Special Sour table in Table 2 above as a Tier 2 well. Each value and the amount of the deep well credit are determined as follows:

Deep well depth	= the MDCP (vertical well) = 3,785 metres
Table depth	= deep well depth rounded down to the nearest 500 metres = 3,500 metres
Cumulative value	= amount in 3,500 row = \$2,760,000
Incremental value	= amount in 3,500 row = \$805 per metre
Deep well credit	= cumulative value + [incremental value X (deep well depth – table depth)] = \$2,760,000 + [\$805 X (3,785 - 3,500)] = \$2,989,425
Producer A	= \$2,989,425 X 60% = \$1,793,655
Producer B	= \$2,989,425 X 40% = \$1,195,770

Example 2

Spud date:	January 2020
Type of well:	Horizontal
H₂S content:	Sweet
Location:	East
MDCP:	2,655 metres
Total measured depth:	2,910 metres
Producer's share:	Producer A owns 50% and Producer B owns 50%

The deep well credit is calculated using the East Sweet table in Table 2 above as a Tier 2 well. Each value and the amount of the deep well credit are determined as follows:

Horizontal length factor (HLF)	$= [60 - 0.035 \times (\text{MDCP} - 2,300)] / 100$ $= [60 - 0.035 \times (2,655 - 2,300)] / 100$ $= 0.47575$
Deep well depth	$= \text{MDCP} + [\text{HLF} \times (\text{total measured depth} - \text{MDCP})]$ $= 2,655 + [0.47575 \times (2,910 - 2,655)]$ $= 2,776 \text{ metres}$
Table depth	$= \text{deep well depth rounded down to the nearest 500 metres}$ $= 2,500 \text{ metres}$
Cumulative value	$= \text{amount in 2,500 row}$ $= \$0$
Incremental value	$= \text{amount in 2,500 row}$ $= \$1,610 \text{ per metre}$
Deep well credit	$= \text{cumulative value} + [\text{incremental value} \times (\text{deep well depth} - \text{table depth})]$ $= \$0 + [\$1,610 \times (2,776 - 2,500)]$ $= \mathbf{\$444,360}$
Producer A	$= \$444,360 \times 50\%$ $= \mathbf{\$222,180}$
Producer B	$= \$444,360 \times 50\%$ $= \mathbf{\$222,180}$

Deep Re-Entry Credit

The deep re-entry credit was introduced to maximize the development of known resources by encouraging producers to re-enter previously drilled wells and drill deeper.

Qualifying Criteria

Producers qualify for the deep re-entry credit if the well event meets **all** the following criteria:

- The well has a re-entry date after November 30, 2003
- An application to alter the well has been submitted and approved before re-entry
- If the well has a spud date on or after January 1, 2009, the TVD to the completion point of the re-entry well event is greater than 2,300 metres

Calculating the Credit

The value of the deep re-entry credit is designed to reflect higher drilling and completion costs related to the location of the well and the additional amount of drilling that is done (incremental drilled distance).

We determine a deep re-entry credit for each deep re-entry well event using the values in one of the two tables below and the incremental drilled distance.

Bottom hole location (east or west)

Similar to the deep well credit, there are two bottom hole location categories: east and west. The east and west areas for deep re-entry credits are the same as the areas used for deep well credits. [Schedule 1](#) describes locations within the east area for re-entries with a re-entry date **on or after January 1, 2009**. Locations that are not on these schedules are considered to be in the west area. [Figure 1](#) is a map of the lines between the east and west areas for re-entries.

Deep Re-entry Credit Tables

West			East		
Table Distance (metres)	Cumulative Value (\$)	Incremental Value (\$/Metre)	Table Distance (metres)	Cumulative Value (\$)	Incremental Value (\$/Metre)
100	0	750	100	0	450
300	150,000	500	300	90,000	300
1,500	750,000		1,500	450,000	

The Formula

Based on the two tables above, we calculate the deep re-entry credit using the following formula.

$$[\text{cumulative value} + \text{incremental value} \times (\text{incremental drilled distance} - \text{table distance})] \times \text{producer's share}$$

Incremental drilled distance

This is the difference between the total measured depth (TMD) of the well after the well has been altered and the TMD before the well was altered. The TMD is the sum of the lengths of all the vertical and horizontal wellbores in the well.

Table distance

The table distance for a deep re-entry well event is the incremental drilled distance rounded down to the nearest value in the table distance column in the appropriate table above. For example, if a re-entered well had a TMD of 5,000 metres before alteration and 5,450 metres after alteration, the incremental drilled distance would be 450 metres and the table distance would be 300 metres.

Cumulative value

The cumulative value for a deep re-entry well event is shown in the cumulative value column on the same row as the table distance for the well event in the appropriate table above. For example, for a deep re-entry well event in the west with a table distance of 300 metres, the cumulative value is \$150,000, as shown in the 300 metre row of the West table above.

Incremental value

The incremental value for a deep re-entry well event is shown in the incremental value column on the same row as the table distance for the well event in the appropriate table

above. It is the additional credit per metre of incremental distance in excess of the table distance. For example, for a deep re-entry well event in the west with an incremental distance of 450 metres, the incremental value is \$500 per metre, as shown in the 300 metre row of the West table above.

Producer’s share

This is the producer’s proportionate interest in the deep re-entry well event. If there is more than one producer with an ownership interest in production from the well event, each producer will be allocated a portion of the deep re-entry credit based on their ownership share.

Example

Spud Date: August 2014
Re-entry date: January 2020
Location: East
TMD before alteration: 1,800 metres
TMD after alteration: 2,900 metres
Producer’s share: Producer A owns 60% and Producer B owns 40%

The deep re-entry credit is calculated using the East table above. Each value and the amount of the deep re-entry credit are determined as follows:

Incremental distance = TMD before alteration - TMD after alteration
= 2,900 - 1,800
= 1,100 metres

Table distance = the incremental distance rounded down to the nearest amount in the table distance column
= 300 metres

Cumulative value = amount in 300 row
= \$90,000

Incremental value = amount in 300 row
= \$300 per metre

Deep re-entry credit = cumulative value + [incremental value X (incremental distance - table distance)]
= \$90,000 + [\$300 X (1,100 - 300)]
= **\$330,000**

Producer A = \$330,000 X 60%
= **\$198,000**

Producer B = \$330,000 X 40%
= **\$132,000**

Deep Discovery Well Exemption

The deep discovery well exemption is an exemption from the payment of royalties. It was introduced to stimulate growth in areas that are beyond existing infrastructure, and to provide additional relief for extremely high-risk drilling.

Qualifying Criteria

For well events in wells with spud dates **on or after January 1, 2009**, top of pay is replaced by the completion point in the well event. All other criteria for the exemption remain the same.

Producers are eligible for the deep discovery well exemption for a well event that meets **all** the following criteria:

- The well event discovers a new gas pool
- The spud date is after November 30, 2003 and before January 1, 2009, or if the spud date is on or after January 1, 2009, the well event has a TVD to the completion point that is deeper than 4,000 metres
- The surface location of the well is at least 20 kilometres away from the surface location of any well in a recognized pool of the same formation

The OGC will determine if a well event discovers a new gas pool and will provide the producer with written notification that the well event qualifies for the deep discovery well exemption.

Calculating the Exemption

Natural gas produced from a deep discovery well event is exempt from the payment of royalties for the first 36 producing months or 283,000,000 m³ of raw gas, whichever comes first.

If a deep discovery well event also qualifies for a deep well credit or a deep re-entry credit, producers are entitled to the exemption or credit, whichever one provides the greatest benefit. To ensure maximum benefit, we calculate both the value of the exemption each month and the cumulative value. When the 36-month exemption ends or the maximum exempt volume has been reached, we compare the cumulative value to

the deep well credit or deep re-entry credit. If the deep well credit or deep re-entry credit is greater, the additional amount will be deducted from future royalties.

Need more info?

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Fax: 250-952-0191

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Latest Revision

February 2021

- Updated to reflect process changes due to the implementation of Petrinex
 - Updated the examples
 - Other minor changes
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Schedule 1

East Area for Wells with Spud Dates on or After January 1, 2009

East deep well and deep re-entry credit tables apply to well events that have spud dates on or after January 1, 2009 and are located in any of the areas listed below. The areas referred to in (i) to (xxxvi) and (lxiv) to (lxxiii) are described in accordance with the National Topographical Survey. The areas referred to in (xxxvii) to (lxiii), are described in accordance with the Dominion Land Survey System.

- (i) The portion of Group 095-A-01 to Group 095-A-04 (inclusive) that is located within British Columbia
- (ii) The portion of Group 095-B-01 to Group 095-B-04 (inclusive) that is located within British Columbia
- (iii) The portion of Group 095-C-01 that is located within British Columbia
- (iv) Group 094-P-01 to Group 094-P-16 (inclusive)
- (v) Group 094-O-01 to Group 094-O-3 (inclusive)
- (vi) Blocks A to C, Units 1-7 and 11-100 of Block D, and Blocks E to L of Group 094-O-04
- (vii) Group 094-O-05 to Group 094-O-16 (inclusive)
- (viii) Units 11-100 of Block A, Units 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block B, Units 71-77, 81-87, 91-97 of Block E, Units 71-100 of Block F, Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-100 of Block G, Blocks H to K (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block L of Group 094-N-01
- (ix) Units 71-77, 81-87, 91-97 of Block G, Units 71-100 of Block H, Block I, Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block J of Group 094-N-07
- (x) Blocks A to C (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block D, Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-100 of Block E, Blocks F to L (inclusive) of Group 094-N-08
- (xi) Blocks A-D, Units 1-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block E, Blocks F-K (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block L of Group 094-N-09
- (xii) Block A, Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block B, Units 1-7, 11-17, 21-27 of Block G, Units 1-30 of Block H of Group 094-N-10
- (xiii) Block A, Units 1-73, 81-83, 91-93 of Block B, Units 1-70 of Block C, Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67 of Block D, Units 1-3, 11-13, 21-23, 31-33, 41-43, 51-53, 61-63, 71-73, 81-83, 91-93 of Block G, Block H and I, Units 1-3, 11-13, 21-23, 31-33, 41-43, 51-53, 61-63, 71-73, 81-83, 91-93 of Block J of Group 094-N-16
- (xiv) Group 094-J-01 to Group 094-J-03 (inclusive)

- (xv) Blocks A to C (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block D, Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block E, Blocks F to K (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block L of Group 094-J-04
- (xvi) Blocks A to C (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block D, Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block E, Blocks F to K (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block L of Group 094-J-05
- (xvii) Group 094-J-06 to 094-J-11 (inclusive)
- (xviii) Blocks A to C (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block D, Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block E, Blocks F to K (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block L of Group 094-J-12
- (xix) Blocks A to C (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block D, Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block E, Blocks F to K (inclusive), Units 1-7, 11-17, 21-27, 31-37, 41-47, 51-57, 61-67, 71-77, 81-87, 91-97 of Block L of Group 094-J-13
- (xx) Group 094-J-14 to Group 094-J-16 (inclusive)
- (xxi) Group 094-I-01 to Group 094-I-16 (inclusive)
- (xxii) Group 094-H-01 to Group 094-H-16 (inclusive)
- (xxiii) Block A, Units 1-3, 11-13, 21-23, 31-37, 41-47, 51-57, 61-67, 71-100 of Block B, Units 71, 81, 91 of Block C, Unit 91 of Block E, Units 1, 11-15, 21-25, 31-35, 41-45, 51-59, 61-69, 71-79, 81-89, 91-100 of Block F, Blocks G to K (inclusive), Units 1, 11, 21, 31-33, 41-43, 51-55, 61-65, 71-75, 81-85, 91-97 of Block L of Group 094-G-01
- (xxiv) Units 31, 41, 51-53, 61-63, 71-73, 81-83, 91-95 of Block A, Units 51, 61, 71-73, 81-83, 91-95 of Block G, Units 1-5, 11-17, 21-27, 31-39, 41-49, 51-100 of Block H, Block I, Units 1-5, 11-15, 21-25, 31-37, 41-47, 51-59, 61-69, 71-79, 81-89, 91-100 of Block J, Unit 91 of Block K of Group 094-G-07
- (xxv) Block A to Block C (inclusive), Units 1-7, 11-19, 21-29, 31-100 of Block D, Blocks E to L of Group 094-G-08
- (xxvi) Group 094-G-09
- (xxvii) Block A and B, Units 1, 11-13, 21-23, 31-33, 41-43, 51-55, 61-65, 71-77, 81-87, 91-100 of Block C, Unit 91 of Block D, Units 1, 11-13, 21-23, 31-37, 41-47, 51-100 of Block E, Blocks F to L (inclusive) of Group 094-G-10
- (xxviii) Units 51, 61, 71-75, 81-85, 91-99 of Block H, Units 1-9, 11-100 of Block I, Units 11-13, 21-23, 31-37, 41-47, 51-100 of Block J, Units 51, 61, 71-73, 81-83, 91-97 of Block K of Group 094-G-11
- (xxix) Units 71-73, 81-83, 91-97 of Block A, Units 71, 81, 91-95 of Block F, Units 31-35,

- 41-45, 51-59, 61-69, 71-100 of Block G, Units 1-7, 11-19, 21-29, 31-100 of Block H, Blocks I and J, Units 1-5, 11-19, 21-29, 31-100 of Block K, Units 31-33, 41-43, 51-57, 61-67, 71-77, 81-87, 91-97 of Block L of Group 094-G-13
- (xxx) Blocks A and B, Units 1-7, 11-100 of Block C, Units 11, 21, 31-33, 41-43, 51-59, 61-69, 71-100 of Block D, Blocks E to L (inclusive) of Group 094-G-14
 - (xxxix) Group 094-G-15 and Group 094-G-16
 - (xxxii) Unit 91 of Block H, Units 1, 11-13, 21-23, 31-37, 41-47, 51-57, 61-67, 71-79, 81-89, 91-100 of Block I, Units 91-93 of Block J of Group 094-B-16
 - (xxxiii) The portion of Group 094-A-09 to Group 094-A-11 that is located outside the Peace River Block
 - (xxxiv) The portion of Block I, Units 1, 11-15, 21-25, 31-35, 41-45, 51-57, 61-67, 71-100 of Block J, Units 71, 81, 91 of Block K of Group 094-A-12 that is located outside the Peace River Block
 - (xxxv) Blocks A and B, Units 1, 11-13, 21-23, 31-35, 41-45, 51-55, 61-65, 71-77, 81-87, 91-99 of Block C, Units 11-13, 21-23, 31-35, 41-45, 51-57, 61-67, 71-79, 81-89, 91-100 of Block E, Units 1-9, 11-100 of Block F, Blocks G to L (inclusive) of Group 094-A-13
 - (xxxvi) Group 094-A-14 to Group 094-A-16 (inclusive)
 - (xxxvii) The portion of the Peace River Block within Sections 1-3, 10-15, 22-29, 2-36 of Township 88 Range 23 W6M
 - (xxxviii) The portion of the Peace River Block with Township 88 east of Range 23 W6M within British Columbia
 - (xxxix) Sections 1-3, 10-15, 22-27, 34-36 of Township 87 Range 23 W6M
 - (xl) Township 87 east of Range 23 W6M within British Columbia
 - (xli) Sections 1-5, 8-16, 21-28, 33-36 of Township 86 Range 23 W6M
 - (xlii) Township 86 east of Range 23 W6M within British Columbia
 - (xliiii) Sections 1, 2, 12, 13, 24 of Township 85 Range 24 W6M
 - (xliv) Township 85 east of Range 24 W6M within British Columbia
 - (xlv) Sections 1-5, 8-16, 22-27, 35, 36 of Township 84 Range 24 W6M
 - (xlvi) Township 84 east of Range 24 W6M within British Columbia
 - (xlvii) Sections 1, 12, 13, 24 of Township 83 Range 25 W6M
 - (xlviii) Township 83 east of Range 25 W6M within British Columbia
 - (xlix) Sections 1, 2, 10-15, 22-27, 34-36 of Township 82 Range 25 W6M
 - (l) Township 82 east of Range 25 W6M within British Columbia
 - (li) Sections 12, 13, 24-26, 35, 36 of Township 81 Range 25 W6M
 - (lii) Township 81 east of Range 25 W6M within British Columbia
 - (liii) Sections 1-3, 9-16, 20-29, 31-36 of Township 80 Range 24 W6M
 - (liv) Township 80 east of Range 24 W6M within British Columbia
 - (lv) Sections 12, 13, 23-26, 34-36 of Township 79 Range 24 W6M

- (lvi) Township 79 east of Range 24 W6M within British Columbia
- (lvii) Section 36 of Township 78 Range 24 W6M
- (lviii) Sections 1-4, 9-17, 19-36 of Township 78 Range 23 W6M
- (lix) Township 78 east of Range 23 W6M within British Columbia
- (lx) Sections 1, 12-14, 23-27, 34-36 of Township 77 Range 23 W6M
- (lxi) Township 77 east of Range 23 W6M within British Columbia
- (lxii) The portion of the Peace River Block within Section 36 of Township 76 Range 23 W6M
- (lxiii) The portion of the Peace River Block within Township 76 east of Range 23 W6M within British Columbia
- (lxiv) Group 093-P-01
- (lxv) Units 1-5, 11-15, 21-25, 31-37, 41-47, 51-100 of Block A, Units 51, 61, 71-73, 81-83, 91-97 of Block B, Units 71, 81, 91-93 of Block E, Units 11, 21, 31-33, 41-43, 51-57, 61-67, 71-100 of Block F, Units 1-7, 11-100 of Block G, Blocks H to K (inclusive), Units 1-3, 11-15, 21-25, 31-37, 41-47, 51-100 of Block L of Group 093-P-02
- (lxvi) Units 51, 61, 71-73, 81-83, 91-95 of Block I of Group 093-P-03
- (lxvii) Units 1-5, 11-19, 21-29, 31-100 of Block A, Units 31, 41, 51-53, 61-63, 71-75, 81-85, 91-97 of Block B, Units 71, 81, 91 of Block F, Units 1-7, 11-17, 21-27, 31-39, 41-49, 51-59, 61-69, 71-100 of Block G, Blocks H to J (inclusive), Units 1, 11-13, 21-23, 31-35, 41-45, 51-55, 61-65, 71-75, 81-85, 91-97 of Block K of Group 093-P-06
- (lxviii) Group 093-P-07 and Group 093-P-08
- (lxix) The portion of Group 093-P-09 and Group 093-P-10 that is located outside of the Peace River Block
- (lxx) The portion of Blocks A, B, Units 1-7, 11-19, 21-29, 31-39, 41-49, 51-59, 61-69, 71-100 of Block C, Units 71, 81, 91-93 of Block D, Units 1-3, 11-13, 21-23, 31-33, 41-43, 51-55 of Block E, Blocks F to H (inclusive) of Group 093-P-11 that is located outside of the Peace River Block
- (lxxi) Units 51, 61, 71-73, 81-83, 91-97 of Block H, Units 1-7, 11-17, 21-27, 31-100 of Block I, Units 31, 41, 51-53, 61-63, 71-77, 81-87, 91-100 of Block J, Unit 91 of Block K of Group 093-I-09
- (lxxii) Units 51, 61, 71, 81, 91 of Block H, Units 1, 11-13, 21-23, 31-33, 41-43, 51-53, 61-63, 71-73, 81-83, 91-95 of Block I of Group 093-I-15
- (lxxiii) Blocks A, B, Units 1, 11-17, 21-27, 31-100 of Block C, Units 31, 41, 51-55, 61-65, 71-77, 81-87, 91-97 of Block D, Units 1-7, 11-19, 21-29, 31-39, 41-49, 51-100 of Block E, and Blocks F to L (inclusive) of Group 093-I-16

Figure 1: East/West Lines for Wells with Spud Dates on or After January 1, 2009

