

British Columbia Oil & Gas Exploration Activity Report 2006



Oil and Gas Division
Resource Development and Geoscience Branch





Ministry of
Energy, Mines and
Petroleum Resources

Oil and Gas Division
Resource Development and Geoscience Branch

BRITISH COLUMBIA OIL & GAS EXPLORATION ACTIVITY REPORT 2006

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TABLE OF CONTENTS

ABSTRACT	2
INTRODUCTION	2
DATA SOURCES	4
2006 OIL AND GAS EXPLORATION ACTIVITY	4
Liard Basin and Fold Belt Region	7
Fort Nelson/Northern Plains Region	7
Fort St. John Region	15
Deep Basin Region	20
Northern Foothills Region	24
Southern Foothills Region	28
INTERIOR BASINS OF BRITISH COLUMBIA	31
COALBED GAS IN BRITISH COLUMBIA	33
CBG Tenure Activity in 2006	34
CBG Drilling Activity in 2006	34
Industry Highlights	34
CONCLUSION	36
ACKNOWLEDGEMENTS	36
REFERENCES	36

BRITISH COLUMBIA OIL & GAS EXPLORATION ACTIVITY REPORT 2006

Chris Adams¹, Michelle Schwabe¹ and Janet Riddell¹

ABSTRACT

In 2006, drilling activity in British Columbia reached the second highest level ever recorded. Raw natural gas production, which has seen an increase of 40 per cent over the last ten years, reached over three billion cubic feet (Bcf) per day and conventional oil production was 28,200 barrels per day. In 2006, raw gas reserves resulting from exploration and development activities were successful in replacing 176 per cent of the year's total gas production. The established remaining raw gas reserves estimate of 16.4 trillion cubic feet (Tcf) is the highest level in the history of the province and represents a four per cent increase over 2005 year-end reserves. Bonuses collected from the sale of British Columbia's Crown petroleum and natural gas rights in 2006 totalled \$630 million, almost reaching the record total achieved three years earlier. The annual average price per hectare of \$912 was the second highest ever recorded in the province.

Exploration activity highlights in 2006 are covered for six resource regions in northeast British Columbia: Laird Basin and Fold Belt; Fort Nelson/Northern Plains; Fort St. John; Deep Basin; Northern Foothills; and the Southern Foothills. The Helmet area of the Fort Nelson region saw the highest activity in the province as producers continue to focus on Jean Marie tight gas development using horizontal drilling technology. In the Fort St. John region, the Chinchaga River and Drake areas witnessed strong drilling activity driven by development of the Lower Charlie/Lake Montney "A" pool as well as the Notikewin and Gething play trends. The western edge of the Fort St. John region has also seen significant activity with expansion of a Triassic Halfway tight gas play and the development of new concepts in Cretaceous horizons. Operators in the Deep Basin region were kept busy exploiting tight gas targets such as the Lower Cretaceous Cadomin Formation. The Cutbank, Kelly, and Noel areas continue to see the highest activity in this region but activity in the Bisette Creek/Swan Lake areas has doubled over the past year as producers exploit the Triassic shale gas potential from the Montney turbidites. In the Northern and Southern Foothills regions, Talisman Energy Inc. has used its extensive thrust and fold belt exploration experience to open a new exploration fairway in the Outer Foothills.

A number of requests for Crown petroleum and natural gas (PNG) rights and project proposals for coalbed gas (CBG) development were received in 2006. The BC Oil and Gas Commission (OGC) approved six applications for CBG test holes and eight well authorizations. A total of twelve wells/test holes were drilled in the areas of Hudson's Hope and Elk Valley. Eighty-seven wells drilled in the province to date have been identified as coalbed gas wells.

The Nechako Basin Project is in its second full year of a multi-year research program designed to generate new geoscience data and interpretations to facilitate oil and gas exploration. The primary objective of the project is to determine whether the essential components of a petroleum system exist in the Nechako Basin. In 2006, geological reconnaissance in the Nechako Basin Project expanded to the northwest area to include the Fawnie and Nechako Ranges. Follow-up was also conducted in some of the 2005 study areas.

Adams, C., Schwabe, M., Riddell, J., British Columbia Oil & Gas Exploration Activity Report 2006, BC Ministry of Energy, Mines and Petroleum Resources, pages 1-37.

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Keywords: exploration and development, industry activity, northeastern British Columbia, petroleum and natural gas rights, resource region, land sales, drilling, production, reserves, rig releases, coalbed gas, interior basins.

INTRODUCTION

The Province of British Columbia continues to reap the rewards of being one of the most competitive oil and gas development jurisdictions in North America. While

promoting the development of conventional, unconventional and frontier oil and gas resource opportunities, the Province has taken specific measures to ensure these opportunities are managed in an environmentally and socially responsible manner.

Exploration and development activity by the oil and gas industry is a major force in the provincial economy

and provides substantial opportunities for British Columbians. Industry achieved near record drilling activity in 2006 with 1,417 wells rig released in the province (OGC, 2007). Crown revenue generated from royalties, land sale bonuses and fees was \$2.14 billion and capital spending by industry is projected to reach \$4.7 billion¹ in 2006 (Figure 1).

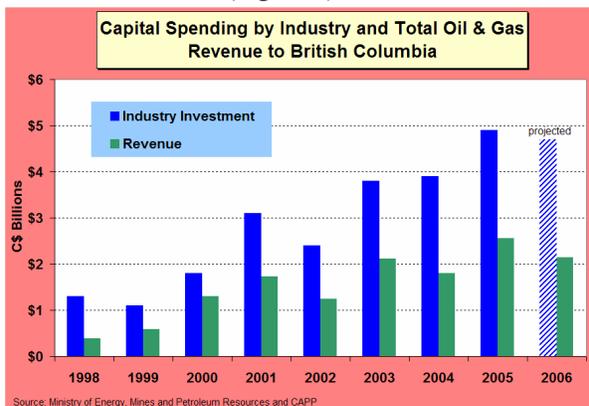


Figure 1. Industry investment and direct oil and gas revenue.

The number of wells rig released in the province in 2006 fell by only one per cent from the previous year (Figure 2). Most drilling occurred in the northeastern portion of the province with minor activity recorded in southeastern British Columbia, focusing on coalbed gas exploration.

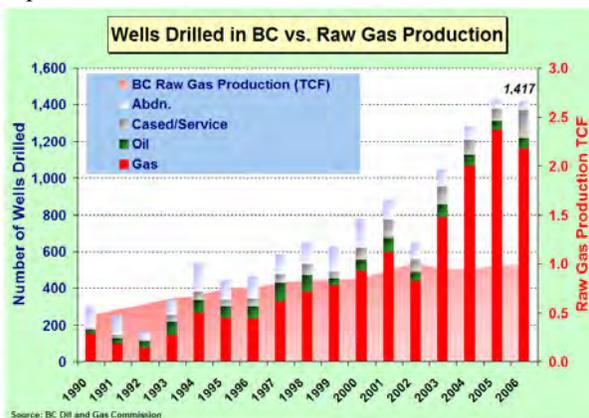


Figure 2. Number of wells drilled in British Columbia

At the end of 2006, raw natural gas production in the province reached 3.2 Bcf² per day and conventional oil production was 28,200 barrels per day. The industry's exploration and development activities have contributed reserve additions that have more than replaced annual gas production for the last nine years (Figure 3).

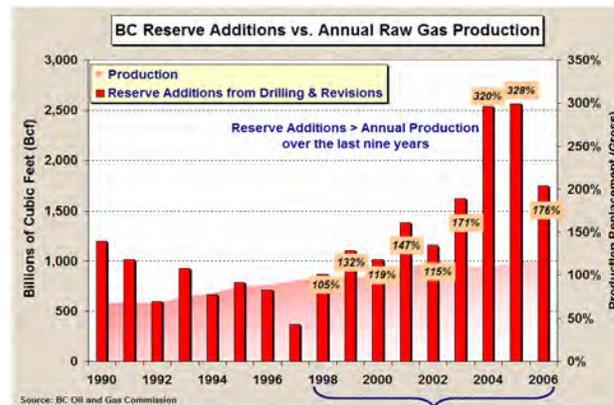


Figure 3. BC's annual natural gas reserve additions

In addition, the 2006 reserves to production ratio (R/P) of 16.5 years is up again for the fourth year in a row, after a long period of slow decline (Figure 4).

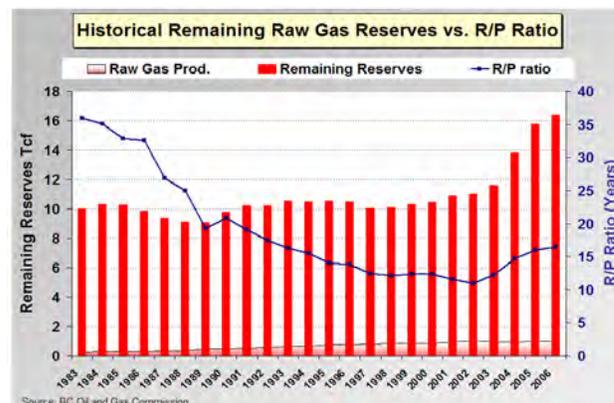


Figure 4. Reserves to production ratio in British Columbia

The generally consistent nature of the reserves to production ratio over the last decade is a key measure of sustainability. It demonstrates the success that exploration and production companies have in converting BC's undiscovered resources into reserves. To measure how sustainable this trend is, the Resource Development and Geoscience Branch of the BC Ministry of Energy, Mines and Petroleum Resources (EMPR), in collaboration with the National Energy Board (NEB), completed a review of the undiscovered natural gas resource potential for northeastern British Columbia (EMPR/NEB, 2006). This report can be viewed at www.em.gov.bc.ca or at www.neb-one.gc.ca.

Historically, drilling and production activity in British Columbia has focused on the shallower Cretaceous and Triassic gas and oil-prone reservoirs in the Fort St. John region and on the shallower depths of the larger mid-Devonian gas pools in the Northern Plains region. Unlike other portions of the Western Canada Sedimentary Basin (WCSB), the northeast region of British Columbia has not seen a major shift towards development/step out drilling. The region continues to see wells drilled for resource-play exploitation.

Over the past few years, several new resource plays such as the Jean Marie, Doig/Montney and Cadomin formations have accounted for a significant portion of

¹ Estimated number - the official number is not yet available from the Canadian Association of Petroleum Producers.

² As reported by the Mineral, Oil and Gas Revenue Branch of the Ministry of Small Business and Revenue.

recent drilling in the province and it is likely that 2007 will see this trend continue. *Figure 5* displays a breakdown of the initial marketable gas reserves by geological period and illustrates where industry has directed its efforts. The data is based on 2005 year-end reserves.

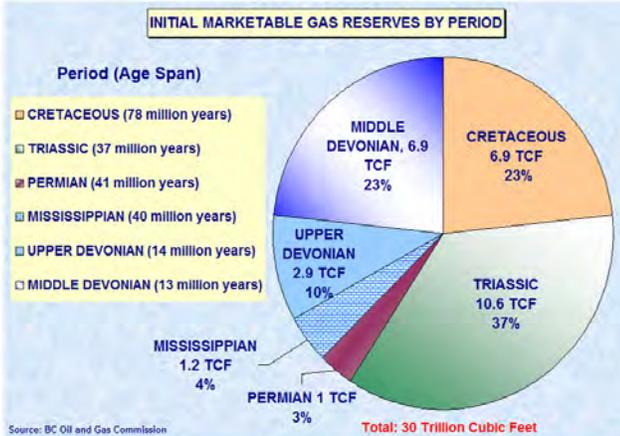


Figure 5. Distribution of marketable gas reserves by geological period.

DATA SOURCES

Since 1998, the BC Oil & Gas Commission (OGC) has been the regulatory agency for oil and gas operations in British Columbia. Basic data and statistics regarding oil and gas activity can be acquired from the OGC website at www.ogc.gov.bc.ca.

The OGC is also responsible for maintaining the provincial reserves database. The most recent reserve statistics in this report are sourced from the

Hydrocarbon and By-Product Reserves in British Columbia 2006 (OGC, 2007). This new report estimating British Columbia’s oil, natural gas and associated by-product reserves to year-end 2006 will be released in September 2007.

Data for this exploration and activity summary has been collected from available public sources. No confidential data or information has been utilized in its preparation.

2006 OIL AND GAS EXPLORATION ACTIVITY

Bonuses collected from the sale of British Columbia’s Crown petroleum and natural gas rights in 2006 totalled \$630 million, while the average price per hectare came in at \$912 (*Figure 6*). Both figures were just shy of record totals achieved in 2005. The largest distribution of those payments was seen in the Fort St. John resource region, which brought in a total of \$245 million from the purchase of 326,434 hectares (*Figure 7*).

In 2006, the BC Oil and Gas Commission issued 1,730 well licences (*Figure 8*). This represents the second highest ever annual level of well licences issued in the province. Ninety-three per cent of these well licences listed gas as the objective, while seven per cent targeted oil.

For ease of analyses and description, activity in northeastern British Columbia has been broken down by regions, derived from physiographic and geologic attributes as well as previous EMPR competitiveness studies (*Figure 9*). Exploration activity is discussed for each of these regions in the sections that follow.

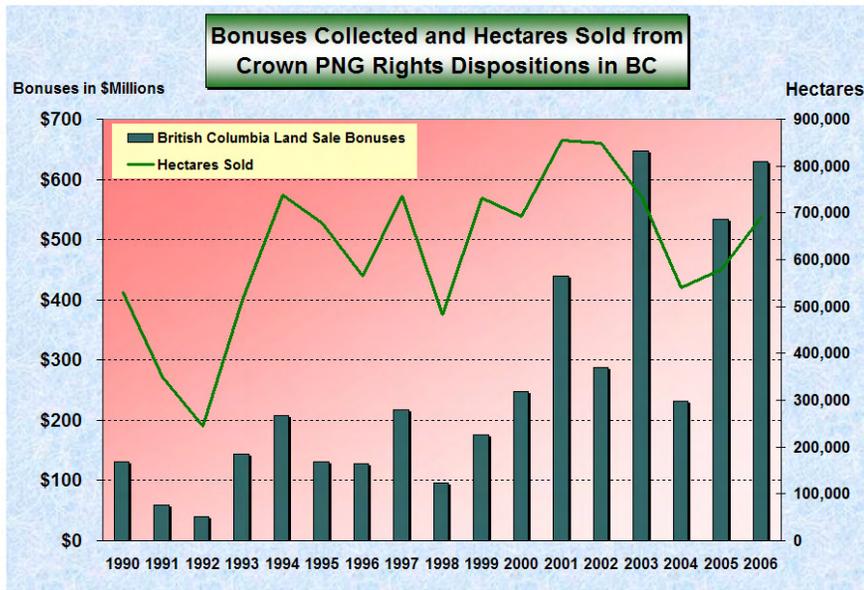


Figure 6. Bonuses collected annually from Crown PNG rights auctions in British Columbia.

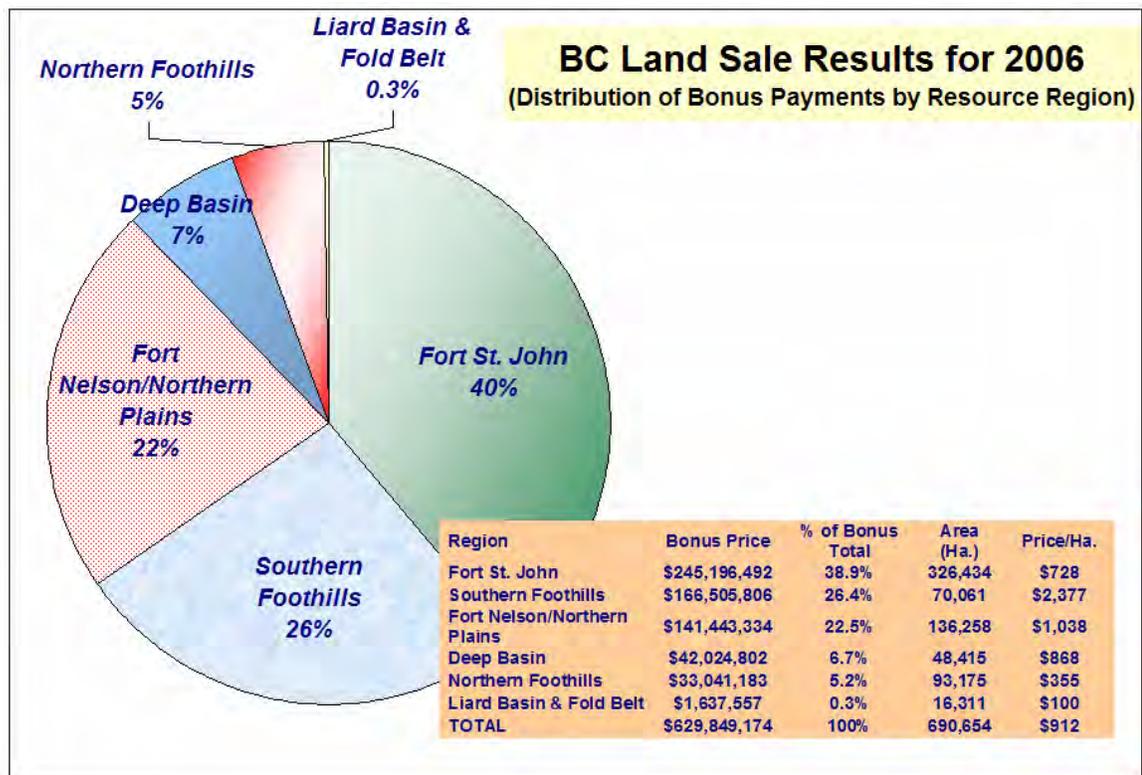


Figure 7. Bonus payments by resource region from BC's 2006 Crown PNG rights auctions.

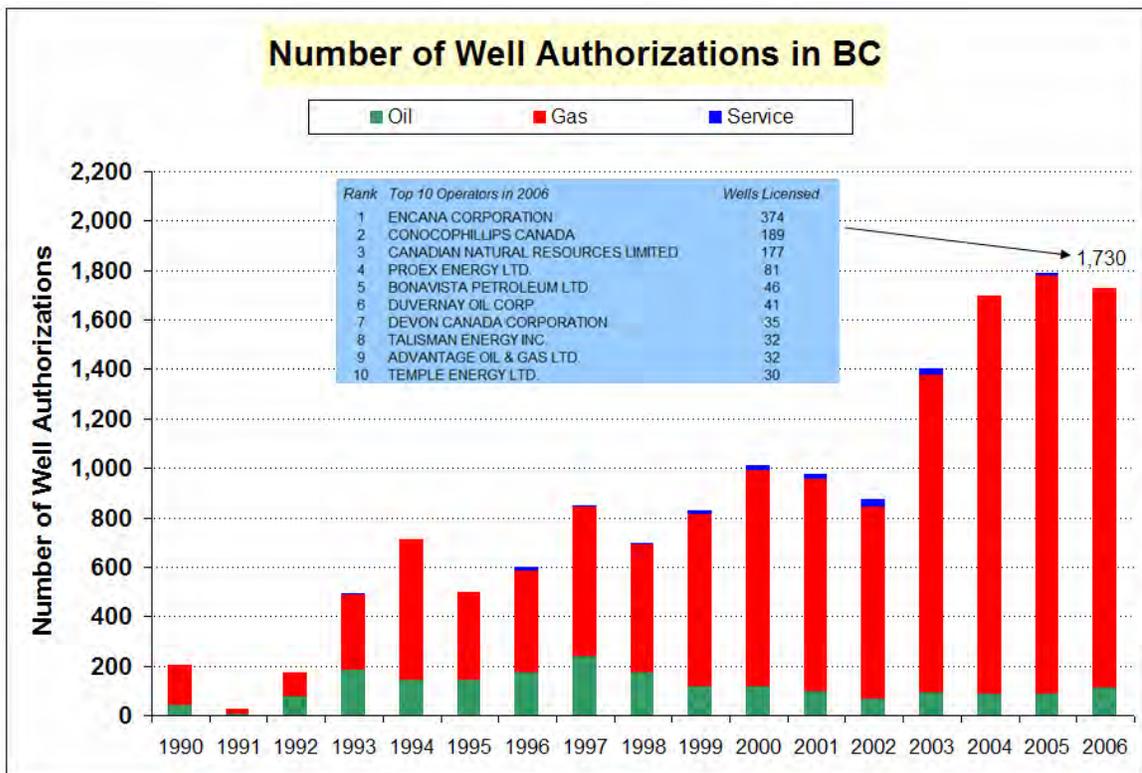


Figure 8. Well licences issued by the BC Oil and Gas Commission (1990 – 2006).

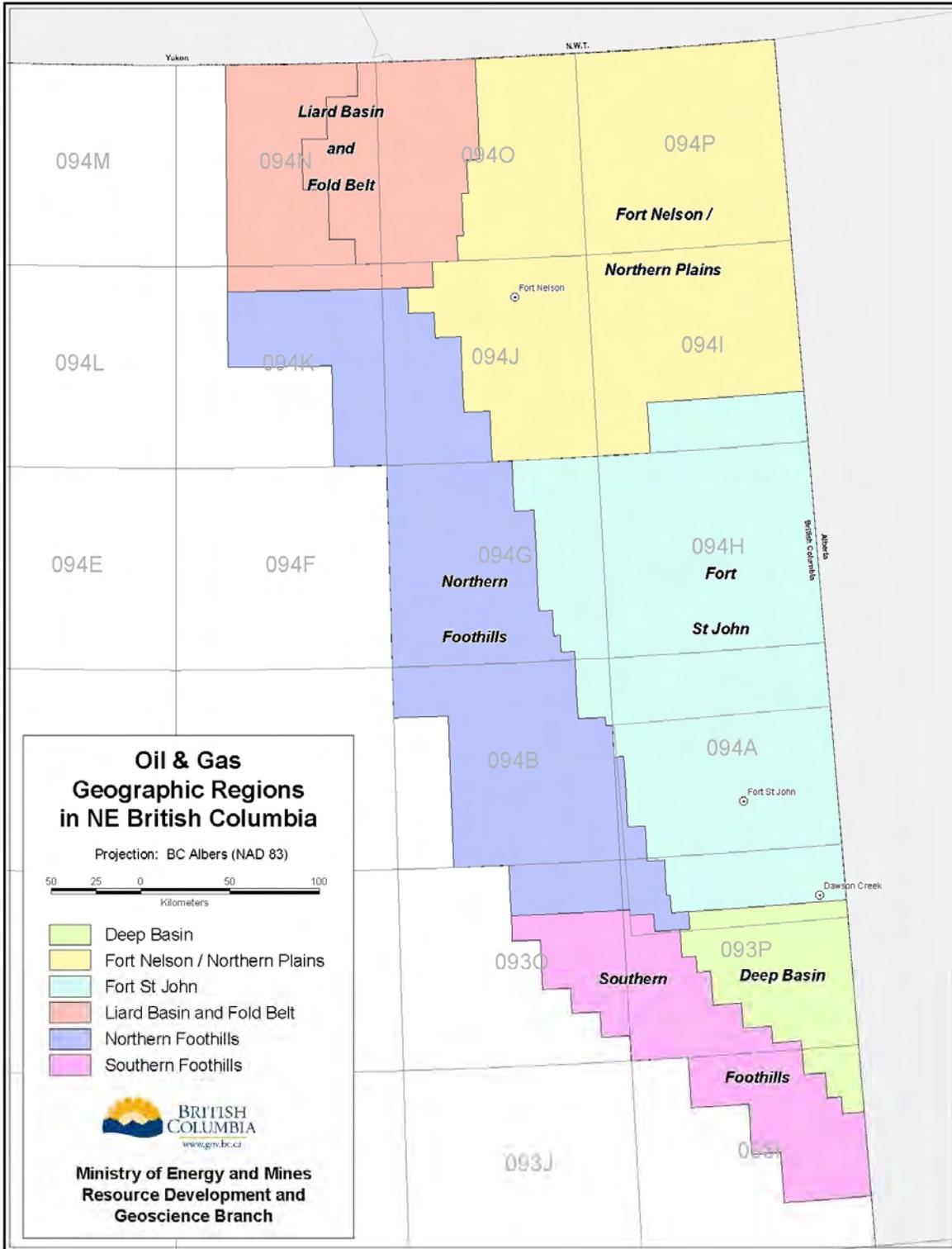


Figure 9. The six oil and gas resource regions of northeastern British Columbia.

Liard Basin and Fold Belt Region

Straddling the Northwest and Yukon Territories with the Province of British Columbia, the Liard Basin and Fold Belt region is a relatively unexplored area situated immediately east of the Cordilleran Fold and Thrust belt. In northeastern British Columbia, the Liard Basin and Fold Belt region cover an area of approximately 1.25 million hectares and contain over five kilometres of sedimentary strata of Cambrian to Upper Cretaceous age. Potential hydrocarbon objectives can occur in the Devonian Dunedin/Nahanni Formation, the Mississippian Banff, Debolt, and Mattson formations, the Permo-Pennsylvanian Kindle and Fantasque formations, the Triassic Toad Formation, and the Cretaceous Chinkeh and Scatter formations. The Nahanni holds significant potential in dolomitized reservoirs in the structural belt. The Debolt, Mattson, Kindle, Fantasque, and possibly the Triassic Grayling and Toad formations are potential objectives in structural closures on the Bovie Lake structure on the margin of the basin. The Banff and Debolt formations are also potential objectives in stratigraphic traps on the platform to the east (Walsh *et al.*, 2005).

Land Sale Activity

Bonus payments from land sale activity in the Liard Basin dropped significantly from 2005. Most petroleum and natural gas rights parcels were sold to land brokers, resulting in \$1.6 million in bonus payments, down from \$12.3 million a year earlier (*Figure 11*). EnCana Corporation was one of three producers making a land purchase under its own name. It paid out the second highest single bonus payment of the year, spending \$331,006 million to acquire a 1,318-hectare parcel just south of the Maxhamish area (94-O-6). The drilling licence covers rights in all zones from surface to basement. In early 2006, EnCana drilled a series of wells just north of the land sale parcel. The target zone was the Cretaceous Chinkeh.

Drilling

Drilling activity in the Liard Basin/Fold Belt region is sparse when compared to other resource regions in the province, however, the region's 15 rig releases in 2006 almost doubled from the previous year. Eight wells were drilled in the Maxhamish area and another seven were drilled in the Tattoo area as producers continued to target resources in the sandstones of the Cretaceous Chinkeh and the Mississippian Mattson. The key operators were EnCana Corporation, EOG Resources Canada Inc., Paramount Resources Ltd. and Delphi Energy Corp. The other active operator was Questerre Energy Corporation. It continued with its development program in the Beaver River area, targeting production from the shallow Mattson sands (*Figure 12*).

Production

The distribution of production from wells rig released in the Liard Basin/Fold Belt region in 2006 is shown in *Figure 13*.

Oil and Gas Exploration Highlights

EnCana Corporation, EOG Resources Canada Inc. and Paramount Resources Ltd. were busy drilling a total of eight wells in or near the **Maxhamish** field in 2006. EOG drilled an outpost well to the northeast area of the field, likely targeting the Mississippian Exshaw for shale gas potential, while Paramount continues to focus on the development and optimization of its Fantasque and Mattson zone wells. EnCana's wells were drilled just south of the Maxhamish area along the Kledo-Bovie Lake Fault (map sheet 94-O-6 & 94-O-11). These wells targeted the Lower Cretaceous Chinkeh sandstone formation and all recorded gas production in 2006. Another EnCana well was rig released in the **Sandy** area (a-96-G/94-O-13) and is listed as a standing Mississippian Mattson well.

Questerre Energy Corporation and Transeuro Energy Corp. completed a drilling program in the **Beaver River** area over this past winter. Completion operations, which included the perforating, fracture stimulation and testing of multiple intervals in the Mattson/Besa River horizon, yielded a gas producer from one of the lower intervals. The well was placed on production at two million cubic feet (mmcf) a day but has improved to about four mmcf a day. Estimated gross proved plus probable reserves of 4.2 billion cubic feet (Bcf) have been assigned to the well. Based on these results, a drilling program is now underway to evaluate the Mattson/Besa River as a potential resource play. Questerre recently doubled its land holdings in the Beaver River area to 9,308 hectares and will continue with its work program in the area in 2007 and 2008.

Fort Nelson/Northern Plains Region

Located in the northeast corner of British Columbia, the Fort Nelson/Northern Plains region covers an area of 3.85 million hectares. The region has been active in oil and gas exploration since the 1960s, with the search for natural gas dominated by the Middle Devonian Keg River, Pine Point, and Slave Point carbonates. These plays have high reserves and deliverability, and include BC's largest recognized gas accumulation at Clarke Lake (3.74 Tcf OGIP). Within the last ten years, however, the Upper Devonian Jean Marie has become the major target for operators. Natural gas from this interval now dominates new production from the region.

Other potential hydrocarbon objectives in the Fort Nelson/Northern Plains region are the Debolt, Pekisko, and Shunda subcrop edges. Cretaceous targets include a detrital lag at the top of the Mississippian and the Bluesky. New conceptual gas opportunities may also be found in Tertiary sediments similar to the Sousa play in northwest Alberta.

In addition, the region is a major contributor to the province's oil production stream. There is continued development of the Hay River Bluesky heavy oil pools

along with the revival of the Desan Pekisko and Shunda oil pools.

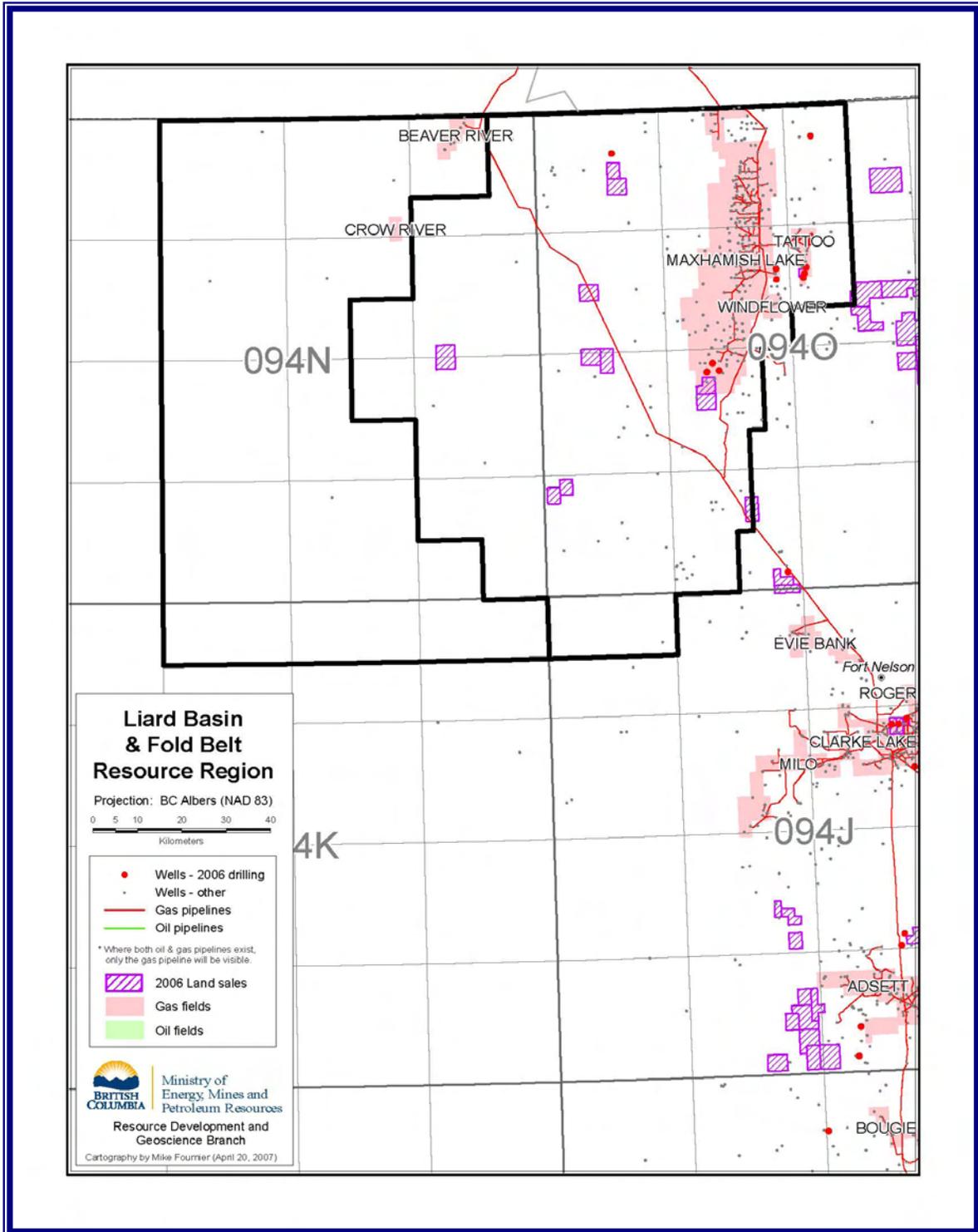


Figure 10. Land sale and drilling activity in the Liard Basin and Fold Belt region of NEBC in 2006.

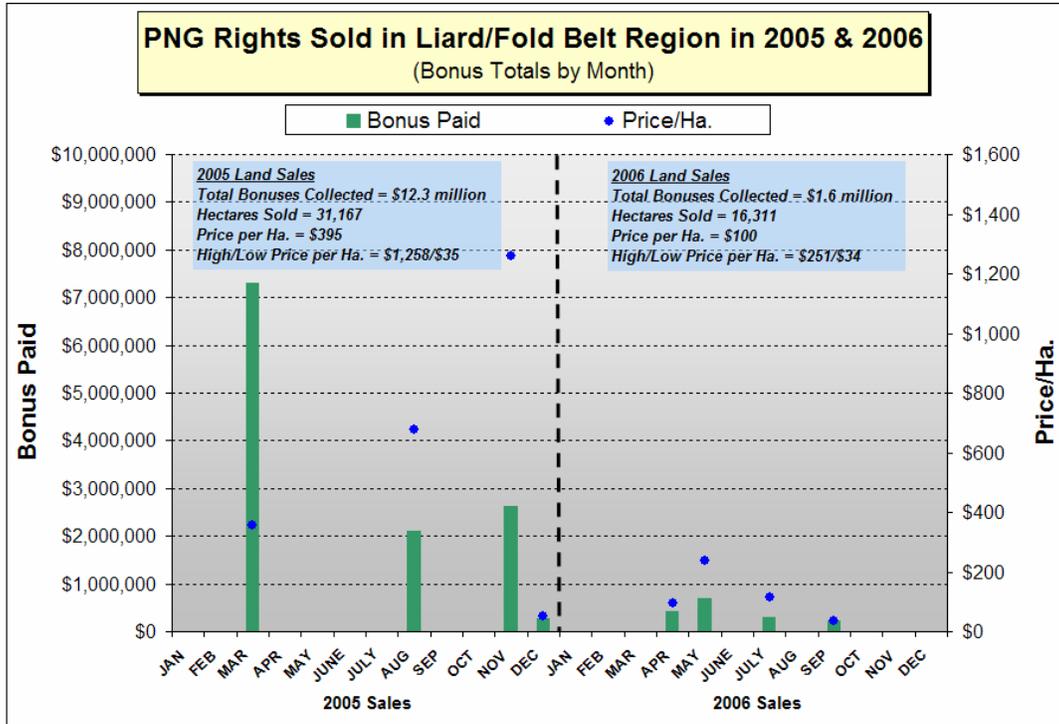


Figure 11. PNG rights sales in the Liard Basin/Fold Belt region in 2005 & 2006.

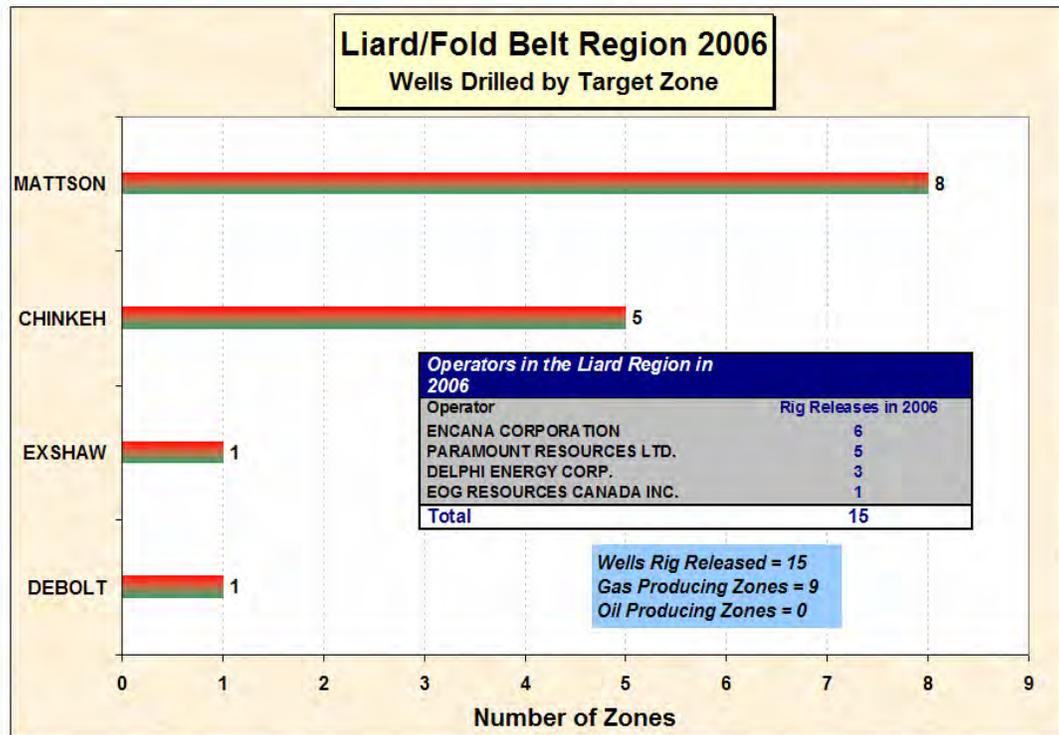


Figure 12. Target zones from wells rig released in the Liard Basin/Fold Belt region in 2006.

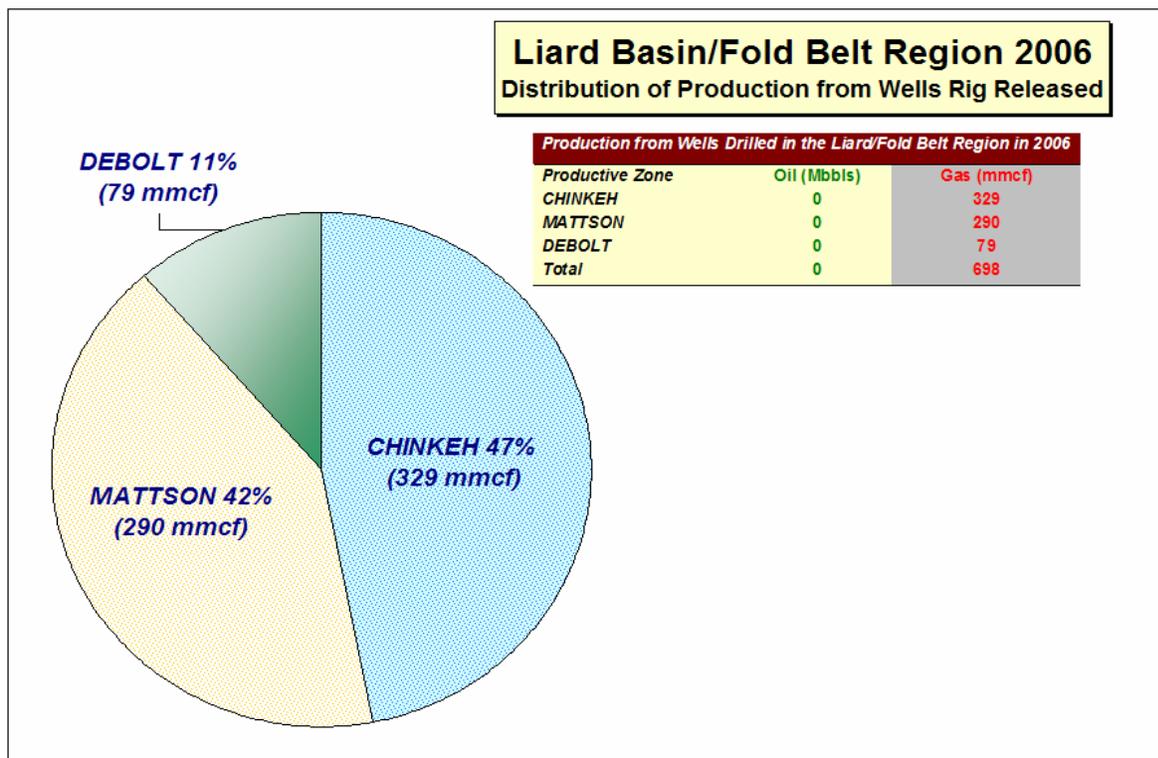


Figure 13. Target zones from wells rig released in the Liard Basin/Fold Belt region in 2006.

Land Sales

The Fort Nelson/Northern Plains region captured 23 per cent of the province's 2006 land sale bonuses. Over \$141 million was spent by land brokers and producers to acquire 136,258 hectares for an average price of \$1,038 per hectare (Figure 15). This is a significant increase from the previous two years when the region's bonus tally garnered only an eight per cent share of the provincial total.

Much of the increase in land sale activity is the result of approximately 35 PNG rights parcels being sold for \$127 million just west of the Dilly, Gote and Ootla areas (see Figure 14). Exploratory locations in this large block of parcels show carbonate targets extending from the Mississippian Debolt to the Devonian Keg River/Pine Point. The area, known as the Horn River Basin, has captured the interest of land buyers and producers looking to unlock the potential of organic rich shales (Figure 16). In 2006, a number of shale gas experimental schemes were approved in this area by the BC Oil and Gas Commission (OGC). The OGC issues approvals for experimental status under section 100 of the *Petroleum and Natural Gas Act*. Operators receiving approval for an experimental scheme must submit a progress report to the Oil and Gas Commission annually. So far, approvals for these schemes have been in the traditional oil and gas regions in the northeast portion of the province. The Resource Development and Geoscience Branch of the Ministry of Energy, Mines and Petroleum Resources is preparing a

Petroleum Geology Open File entitled Summary of Shale Gas Activity in Northeast British Columbia 2007. It will be available for viewing and downloading at www.em.gov.bc.ca.

Another area enticing explorers' interest is the Shekilie area, along the BC/Alberta border at map sheet 94-I-16. In May 2006, a parcel was picked up by Petroland Services (1986) Ltd. for \$1.68 million. The drilling licence covers rights from the surface to the base of the Devonian Jean Marie. Canadian Natural Resources Ltd. is a key operator in this area and is looking to extend a Mississippian Banff shallow gas project, which is being operated by Apache Canada Ltd. on the Alberta side of the BC/Alberta border.

Drilling

A total of 332 wells were rig released in the Fort Nelson region in 2006. Forty per cent of all rig releases occurred in the Gunnell Creek area along the Jean Marie reef margin and to the east in the Jean Marie platform at Helmet. Drilling activity was also high in the Shekilie, Ekwan, and Desan areas. The Hay River area, along the northern BC/Alberta border, continues to see consistent activity as Harvest Operations Corp. carries on with its multi-leg horizontal well program. The Jean Marie Formation accounted for 57 per cent of all identified target zones in the Fort Nelson region. EnCana Corporation was the most active operator with 137 rig releases (Figure 17).

Production

The distribution of production from wells rig released in the Fort Nelson region in 2006 is shown in *Figure 18*.

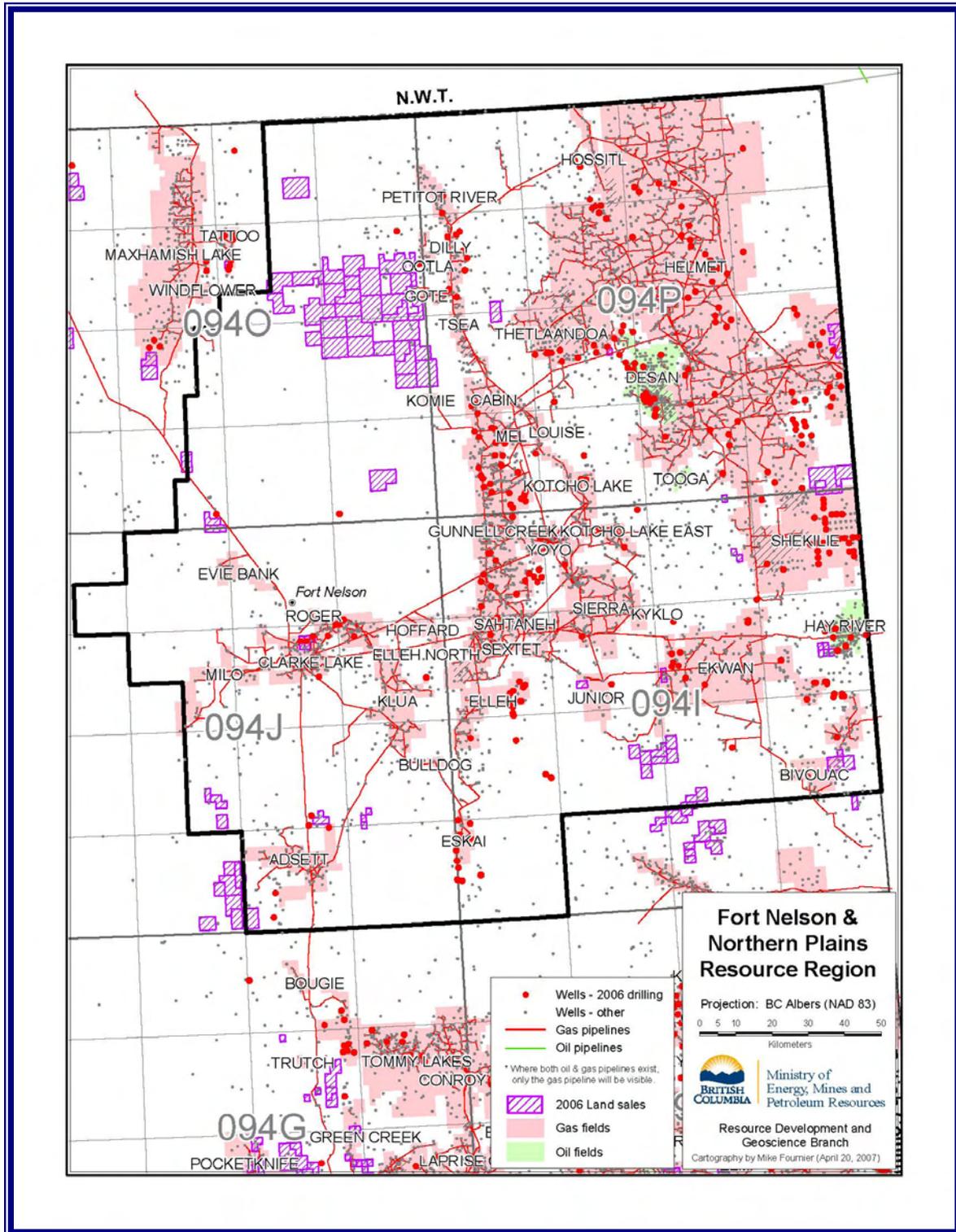


Figure 14: Land sale and drilling activity in the Fort Nelson and Northern Plains region of NEBC in 2006.

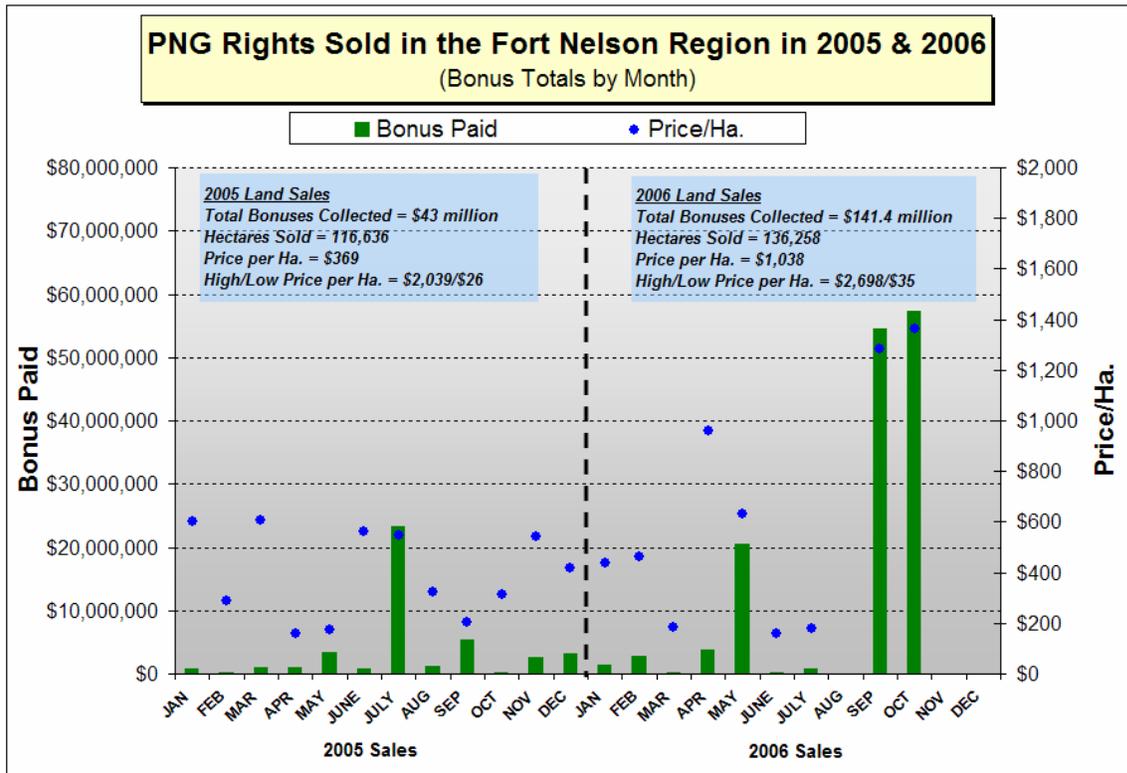


Figure 15. PNG rights sales in the Fort Nelson region in 2005 & 2006.

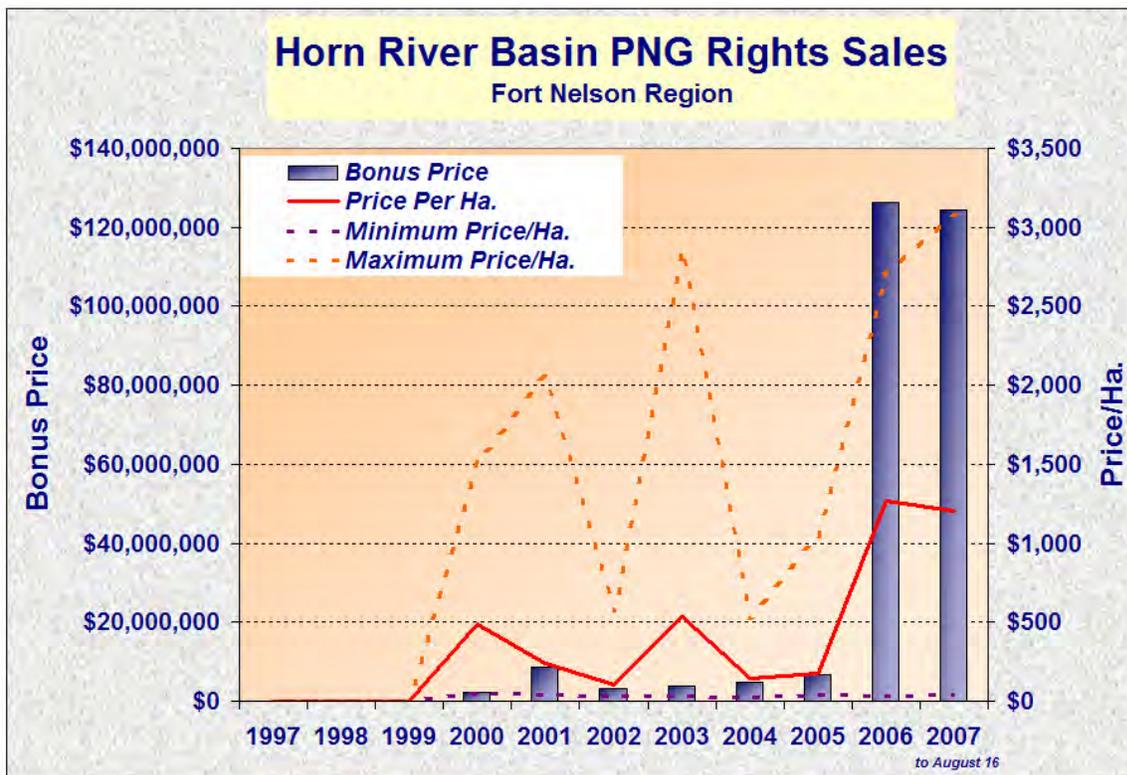


Figure 16. Historical PNG rights sales in the Fort Nelson region's Horn River Basin.

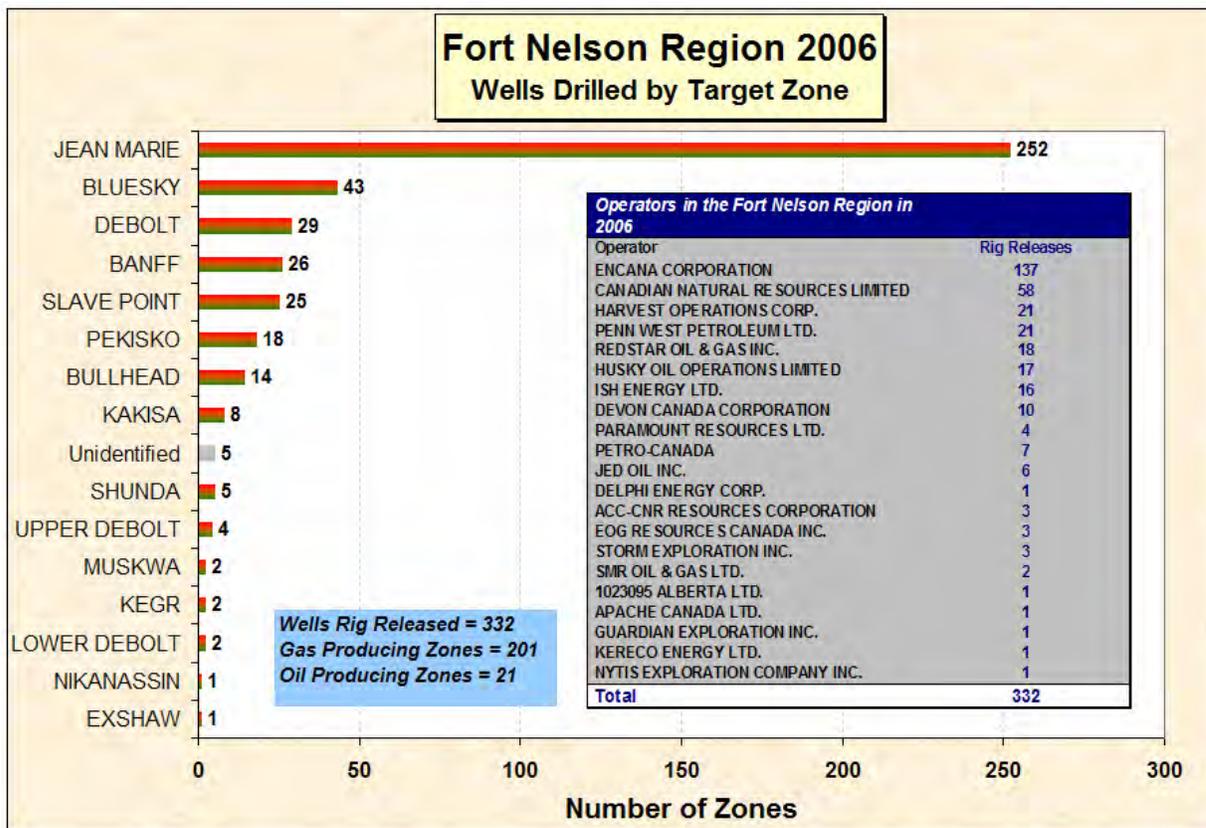


Figure 17. Target zones from wells rig released in the Fort Nelson region in 2006.

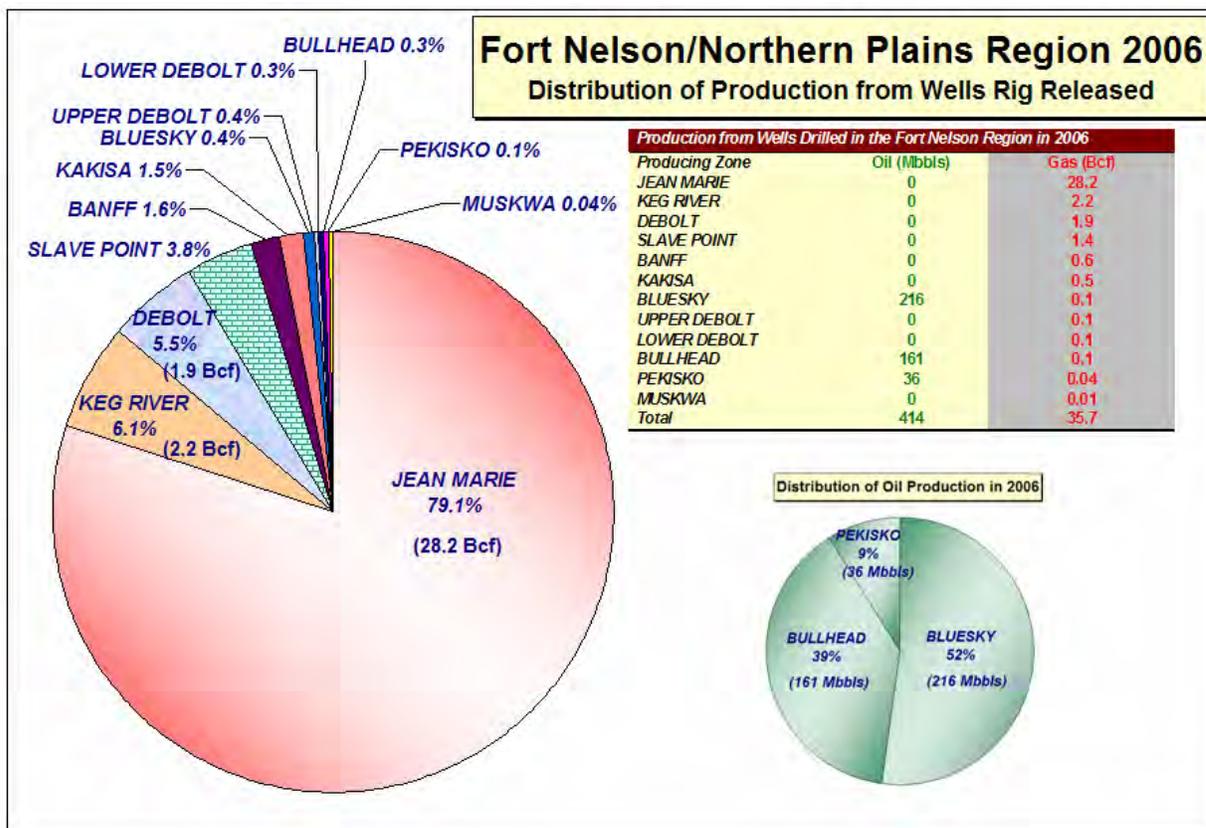


Figure 18. Distribution of production from wells rig released in the Fort Nelson region in 2006.

Oil & Gas Exploration Highlights

The **Helmet** area was the most active area for drilling activity in the province in 2006. Nearly all drilling in the area focussed on horizontal well development of the Devonian Jean Marie. Rig releases in the area totalled 77; seventy-five of those wells listed the Jean Marie as the target. **Canadian Natural Resources Limited** was the most active operator in the region with 30 rig releases, while **EnCana Corporation** was second with 18. **Penn West Petroleum Ltd.** and **Devon Canada Corporation** were also active operators in the area with 13 and ten wells drilled, respectively.

Gunnell Creek was another area focussing on Jean Marie development in 2006. **EnCana Corporation** was the sole operator for the area's 57 rig releases. Almost 80 per cent of the company's completed wells reported gas production. This Shelf Edge Play contains sweet gas that is trapped in a barrier reef complex along the Jean Marie Formation's western edge.

Canadian Natural Resources Ltd. (CNRL) was the only operator active in the **Shekilie** area (94-I-16) in 2006. The area generated the third highest number of rig releases (26) in the Fort Nelson region as CNRL continues to drill outpost wells terminating in the Mississippian Banff Formation. Other targets include the Cretaceous Bluesky, the Devonian Jean Marie and Slave Point. CNRL now has a nine-kilometre, 168.3 millimetre, sweet natural gas pipeline in service from a Shekilie area wellsite at d-55-H/94-I-16 to a tie-in point at a TransCanada PipeLines Limited meter station located at 14-02-114-12W6 in Alberta.

Harvest Operations Corp. completed 21 wells in its multi-leg horizontal well program in the **Hay River** area in 2006. One of the multi-leg wells reported oil production of 67,814 barrels over ten months. Production at Hay River is medium gravity crude oil (24° API) from the Cretaceous Bluesky Formation. The field is currently a winter-only access site along the northwestern Alberta and northeastern British Columbia border. Harvest recently began work on an all-season access road. This road will facilitate year-round access for equipment and personnel into this key area, further supporting the ability to both optimize operations, and maximize the recovery of this large resource. The Hay River property has over 200 million barrels of an estimated original oil-in-place with a total recovery forecast of 20 per cent. Harvest continues to increase its forecast recovery through development drilling and production optimization (pump upgrades, waterflood optimization and drilling downspacing). Only six per cent of the original oil-in-place has been recovered to date.

RedStar Oil & Gas Inc. had a busy year in the Greater Sierra region. In 2006, the natural gas company drilled 18 wells in the Ekwan, Kotcho Lake, Thetlaandoa, Helmet, and Sierra areas. The 2006/07 winter drilling season was based on the interpretation of recently completed 3-D seismic programs in the Greater Sierra area. The company's key target was the Mississippian Debolt; gas production from the zone

totalled 1.5 Bcf from five wells in the Ekwan and Thetlaandoa areas.

Husky Oil Operations Ltd. completed 17 wells in the Fort Nelson region in 2006. Activity was concentrated in the **Bivouac** and **Ekwan** areas where **Husky** continued with its successful Devonian Kakisa and Jean Marie exploration program. In the Bivouac area, Husky drilled a total of six wells; five reported gas production from the Jean Marie. At Ekwan, the producer drilled eleven wells; three reported gas production from the Jean Marie and one from the Kakisa.

Delphi Energy Corp. completed winter drilling and tie-in operations at **Bigfoot**. In late 2005, the company entered into a farm-in agreement with a major producer to jointly develop a natural gas resource play in the Bigfoot area. The arrangement involves more than 51,800 gross hectares of land (200 sections) with two blocks having successfully tested long-life natural gas reserves in the Devonian Jean Marie Formation. Delphi completed the drilling, completion and tie-in of one horizontal well and the tie-in of three standing wells from its previous winter program. The horizontal development well successfully penetrated 600 metres of reservoir quality rock with production rates meeting expected results. A stabilized production rate of 1.2 mmcf per day is anticipated in mid-2007. Delphi had planned to drill as many as three horizontal wells in this area but weather issues and rig availability hampered further activity.

Twenty-two wells drilled in the Fort Nelson region in 2006 were targeting the potentially high impact Devonian Slave Point Formation. Five of those wells recorded gas production totalling 1.4 Bcf. One of the most notable operators chasing Slave Point targets in the Fort Nelson region is **Storm Energy Inc.** Its high impact/high risk area is the **Cabin/Kotcho/Junior** north-south corridor in 94-P and 94-I. In 2006, success from its winter drilling program came from areas to the north of that corridor at **Dilly, Petitot River and Louise**, where Storm has recorded two 3-D seismic programs covering 80 square kilometres. Three wells targeting gas in the Slave Point Formation were drilled in February and March and have produced over a Bcf (gross) to date. All three new wells are producing 2.3 mmcf per day of sales gas net to Storm. One of the wells at a-2-D/94-P-13, which began producing in late April, is being rate restricted to a gross rate 3.5 mmcf per day.

Guardian Exploration Inc. will continue developing its **Kotcho Lake** Devonian Slave Point gas properties. It will do so through a combination of re-entry wells and new drilling. In 2006, Guardian tied in two Slave Point gas wells; one produced at rates as high as 1.5 mmcf per day (gross). Another Slave Point well at b-100-E/94-P-3 was successfully re-entered and whipstocked. The operation encountered the Slave Point reef 13 metres structurally higher than the original well. The well, which previously produced at a steady

rate of 350 mcf a day with increasing water production, tested at rates up to 1.5 mmcf per day without water. Guardian also plans to pursue a re-entry opportunity on its remaining property in the **Yoyo** area, just east of Kotcho Lake.

In December of 2006, the shareholders of **Zenas Energy Corp.** voted in favour of a merger with **TUSK Energy Corporation**. The transaction gives TUSK the drilling and development upside of a multi-year drilling inventory and long-life natural gas assets in the **Elleh** area. TUSK's most recent winter drilling program at Elleh consisted of six horizontal wells targeting the Jean Marie Formation and one vertical well believed to be targeting the Mississippian Debolt. The company also acquired 68 square kilometres of new 3-D seismic over the area and constructed a 22-kilometre all season access road. All of the Jean Marie horizontal wells have been tied-in and are on production. The vertical well was fractured and is being evaluated.

Crew Energy Inc. is looking at the **Greater Sierra** region as a new area of focus. The junior oil and gas producer recently entered into an agreement to acquire a private oil and gas company with producing oil and natural gas properties in northeast BC. Assets from the acquisition will provide Crew with critical mass in the B.C. Foothills as well as developmental opportunities in the Greater Sierra region. Prospective pay zones in Greater Sierra include the Devonian Jean Marie and Pine Point as well as the Mississippian Mattson and Debolt. Crew has identified several optimization and development opportunities on Greater Sierra lands where it can deliver gas to one of its company-owned facilities.

Fort St. John Region

Covering an area of 3.7 million hectares, the Fort St. John region continues as the hub of activity and production for the province. The region has a variety of geologic settings, which combine to offer good quality, low-risk gas and oil prospects with stacked, multi-zone potential. The deep Slave Point play, which is 2,800 to 3,200 metres true vertical depth along the Hotchkiss Embayment, continues to entice exploration since the discovery of Ladyfern (760 Bcf OGIP) in 2000. Deeper conceptual plays also occur in the Middle Devonian clastics and Keg River carbonates. On the western side of the area, Laramide-induced folding and structural trapping provides opportunity for Debolt, Halfway, Charlie Lake, Baldonnel, and various Cretaceous sands. The Fort St. John Graben houses numerous structural and stratigraphic objectives, ranging from hydrothermal dolomites in the Wabamun to sands in the Mississippian Kiskatinaw and Permian Belloy. Traditional targets in the region have been the Triassic stratigraphic and erosional edge plays in the Montney, Doig, Halfway, numerous Charlie Lake members, and the Baldonnel. Lower Cretaceous clastics have also been sought after in the region with the Dunlevy, Gething, and Bluesky as major production horizons. Recently, both the tighter

Gething sands in erosional valley systems and the lowstand Notikewin sands have been the subject of developmental focus north of the Peace River Block.

Land Sales

Land brokers and producers spent \$245 million in 2006 to acquire PNG rights in the Fort St. John region (*Figure 20*). It was the highest distribution of bonus payments in the province compared to other resource regions and a 33 per cent increase from 2005. The average price per hectare was down slightly from the year before but still reached \$728 per hectare. As usual, land sale activity was spread throughout the resource region but several areas attracted more interest than others.

The southern section of the Fort St. John region appeared to be the most active for land purchases, a notable divergence from 2005. Successful bids for parcels ranged from the Sunrise area at 79-16W6 up to the Boudreau area at 84-21W6 (Peace River Block). Industry activity in this south Peace region is centered on Triassic-aged stratigraphic plays in the Montney, Doig, Halfway, and Baldonnel as well as clastics in the Lower Cretaceous. A key operator in this region is Terra Energy Corp., which has proved up an entirely new play within its Fort St. John core operating area. Drilling and testing results have given the producer more than 1,500 barrels of oil equivalent per day of sustainable production capability.

In the west-central section of the Fort St. John region (94-A-13), approximately \$16 million was spent to acquire PNG rights. The areas of Aitken Creek, Birch, Fireweed, Blueberry and Inga surround the purchased parcels. Prospects in these areas often target Cretaceous and Triassic reservoirs. Canadian Natural Resources Limited has been the most active operator in these areas, however, Bonavista Petroleum and Crew Energy Corp. have recently announced significant purchases of land to develop natural gas prospects.

Just under \$33 million was spent on PNG rights extending from Beg West (94-G-1) up to the Green Creek area (94-G-7). ProEx Energy continues to extend its land position in this region to expand its Triassic tight gas play and to develop new concepts in the Cretaceous.

Drilling

Three major producers were responsible for a third of the 743 rig releases in the Fort St. John region in 2006 (*Figure 21*). The top operator in the region was Canadian Natural Resources Limited (CNRL). The producer rig released 126 wells, a 31 per cent drop from 2005. One third of CNRL's activity took place in the Drake, Silver and Beg areas. ConocoPhillips Canada Ltd. notched second spot as the busiest operator with 74 rig releases. The Gutah, Kahntah River and Ring areas accounted for 82 per cent of ConocoPhillips' activity. And the winter-access area of Chinchaga River helped give Pioneer Natural Resources Canada Inc. a third

place ranking with 47 rig releases (31 at Chinchaga River).

Production

The distribution of production from wells rig released in the Fort St. John region in 2006 is shown in Figure 22.

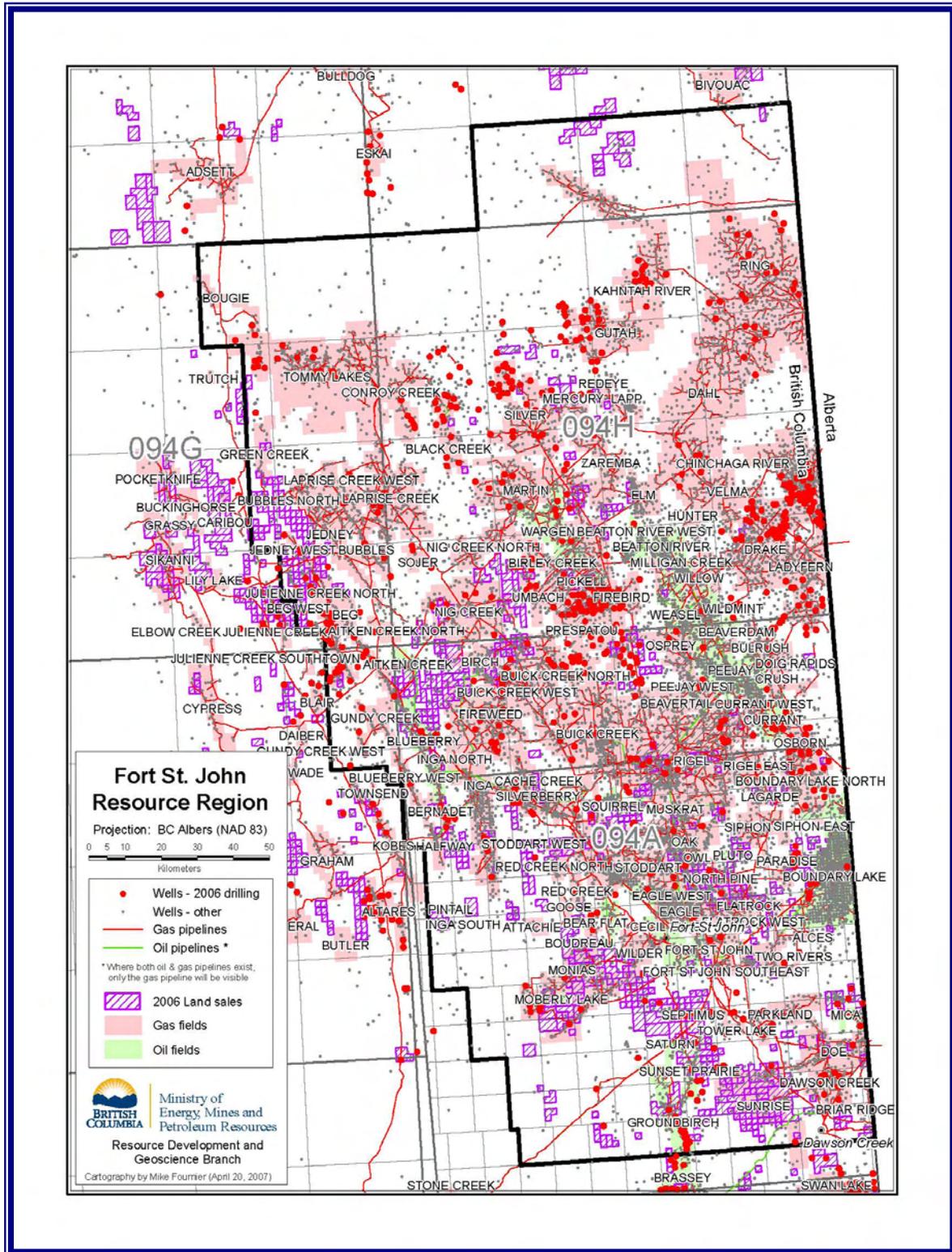


Figure 19. Land sale and drilling activity in the Fort St. John region of NEBC in 2006.

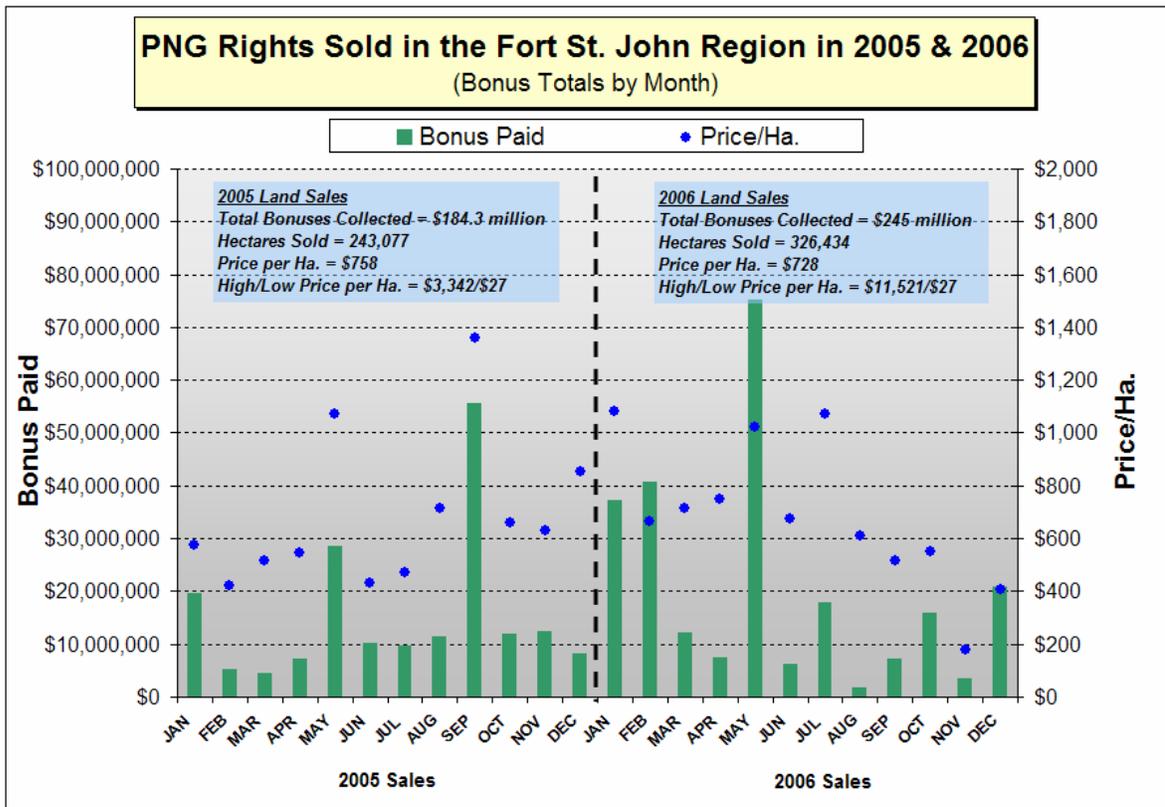


Figure 20. PNG rights sales in the Fort St. John region in 2006

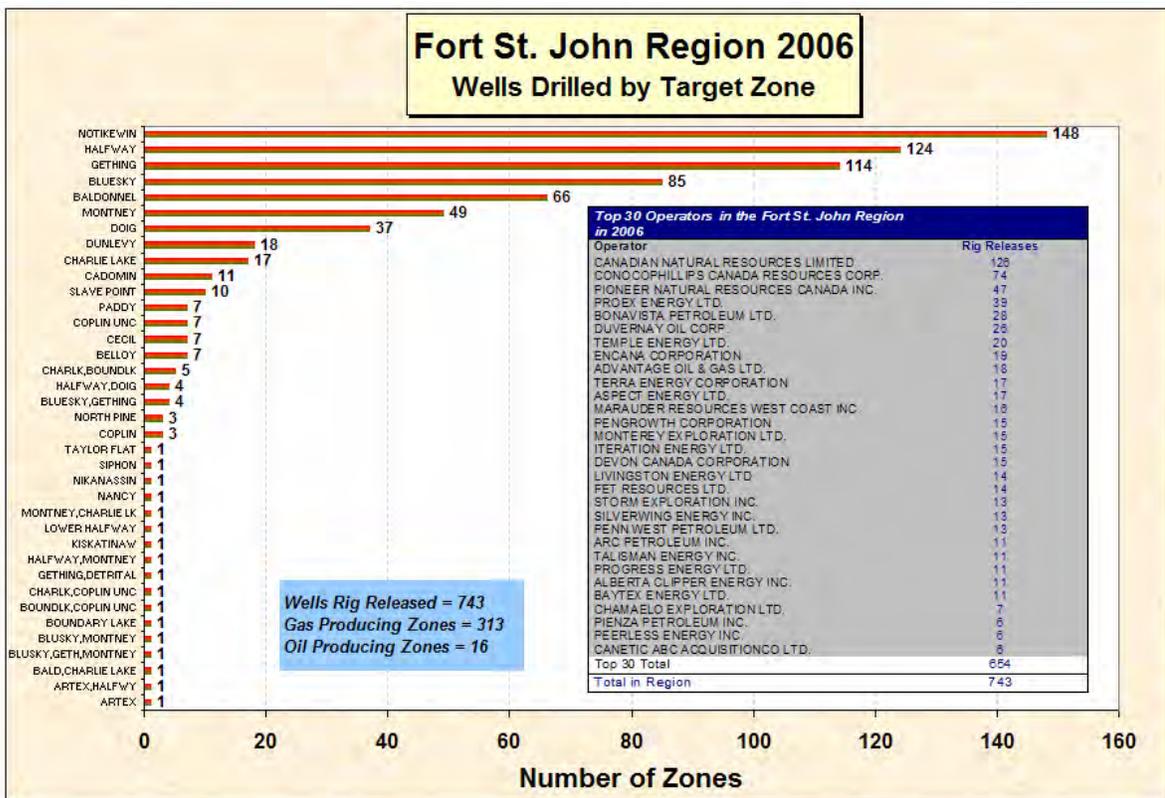


Figure 21. Target zones from wells rig released in the Fort St. John region in 2006.

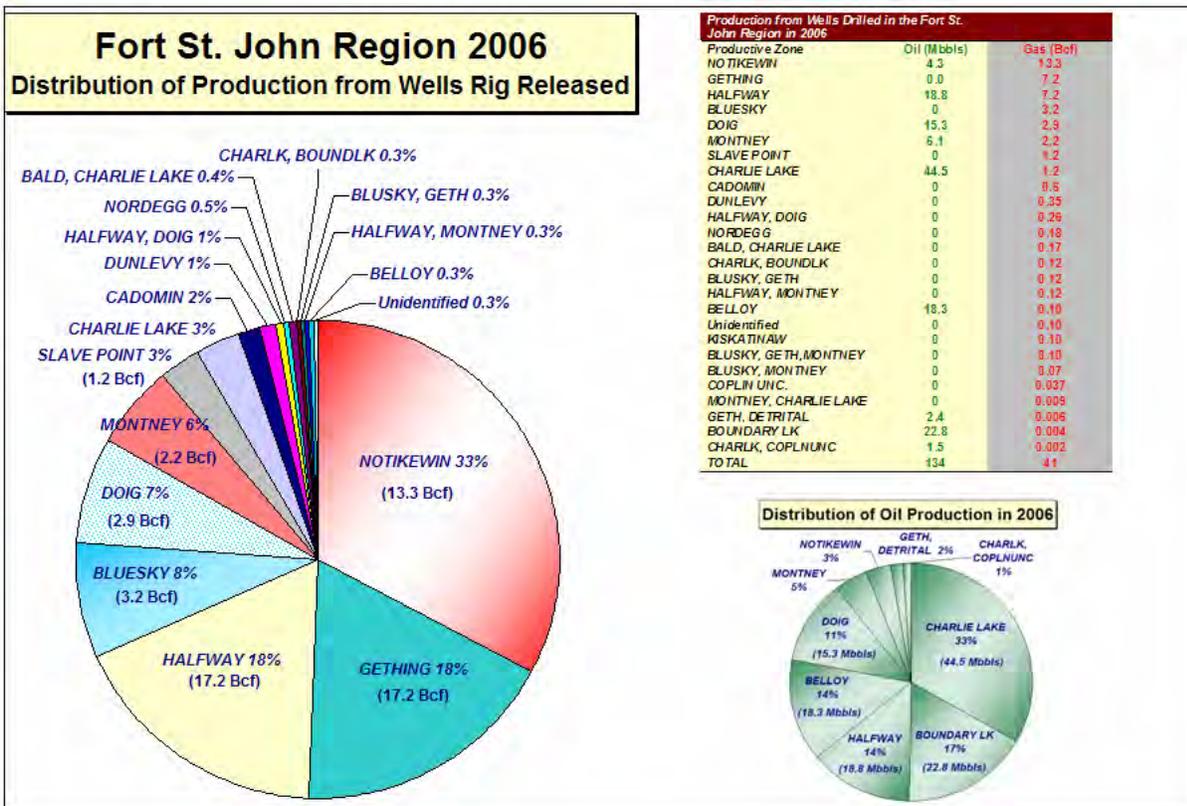


Figure 22. Distribution of production from wells rig released in the Fort St. John region in 2006.

Oil & Gas Exploration Highlights

Drilling activity in the Fort St. John region in 2006 was highest in the **Chinchaga River** and **Drake** areas. The **Chinchaga River** area, located on the eastern edge of the region at 94-H-8, saw consistent winter drilling activity over the first three months of the year. Forty-four wells were rig released in the winter-access area with **Pioneer Natural Resources Canada Ltd.** leading the way with 31. Pioneer's activity at Chinchaga targeted production from the Lower Charlie Lake-Montney 'A' Pool and from the Cretaceous Notikewin and Gething. The Chinchaga area continues to be one of producer's key development regions in northeast BC. **Vault Energy Inc.** also drilled a well at Chinchaga; it's now producing oil and gas from the Devonian Slave Point. In the **Drake** area, where the primary target is the Notikewin, 43 wells were rig released. Among the four producers operating in the area, Canadian Natural Resources Ltd. drilled the most wells with 41. Pioneer Natural Resources Canada Ltd. was also active with 13 wells drilled, while **Marauder Resources West Coast Inc.** drilled nine.

An increased capital budget in 2006 and a recent acquisition has allowed **ProEx Energy Ltd.** to build a dominant land position in the BC Foothills Foldbelt regional tight gas play. ProEx recently acquired certain interests in the region previously held by **Progress Energy Trust**. The \$134.3 million acquisition adds approximately 6.6 million barrels of oil equivalent of proved plus probable reserves, over 32,000 net hectares of undeveloped land and substantial seismic data. ProEx now controls approximately 85,000 hectares of

undeveloped land in its Foothills project area. In 2006, the junior explorer rig released 50 wells in northeast BC; 22 were in the **Beg** area focussing on the extensive and thick Triassic Halfway Formation. Other areas of activity were at **Beg West, Bernadet, Gundy Creek, Dogrib, Sasquatch, and Town**. Typical Halfway wells along the crest produce from one to three mmcf per day on average in the first year and then stabilize in the range of 500 mcf to one mmcf per day with a reserve life greater than 30 years. ProEx has also experienced substantial success in Cretaceous horizons throughout the Foothills predominantly in the Bluesky and Gething formations.

The **Silver** area was the fourth most active area in the Fort St. John region. All 33 wells in the area were rig released early in 2006 and most focussed on Cretaceous Bluesky development. **Canadian Natural Resources Ltd. (CNRL)** and **Livingston Energy Ltd.** lead this activity with 13 rig releases each. **Peerless Energy Inc.**, with seven rig releases, is a relative newcomer to the area. The junior explorer owns and operates a high quality, liquids rich Bluesky sweet natural gas pool with 225 Bcf of original gas-in-place (OGIP). The pool provides approximately 570 barrels of oil equivalent per day of production with low predictable decline rates and a twelve-year reserve life index. Undeveloped land at Silver amounts to over 9,100 net hectares with an inventory of over 22 drilling locations. Peerless has put together completion and tie-in programs for its wells and has at least one well on production.

ConocoPhillips Canada Ltd. and Canadian Natural Resources Ltd. were the only two operators active in the **Guth** area in 2006. Twenty-seven of the 31 wells rig released in the area were the result of ConocoPhillips' ongoing Bluesky-Gething-Montney gas project. The average total depth into the Triassic Montney in this area is about 1,000 metres. Total gas production from 2006 drilling was 1.4 Bcf from twelve producing wells. The highest producer in 2006 was from the b-37-D/094-H-15 well. It was producing gas at an average rate of 1.3 mmcf per day at year's end. ConocoPhillips also targets Bluesky-Gething-Montney gas in the **Ring** area (94-H-16). The producer usually drills around 70 wells per year in the Ring-Border region of northwestern Alberta and northeastern British Columbia.

Duvernay Oil Corp. has confirmed and delineated a second, significant new pool from its Triassic Doig gas discovery in the **Groundbirch** area. The discovery of at least one additional expansive Triassic Doig gas pool complements the original discovery made by the company in 2003. Duvernay's activity at Groundbirch, which is in northeast BC's Peace River Block, is part of an 80-kilometre long and three-kilometre wide fairway with additional potential in formations above and below the Doig. The Doig gas at Groundbirch is interpreted to be in a distal shelf sandstone unit. The basal portion is notable for its phosphate zone, one of the best source rocks in the Western Canada Sedimentary Basin. In fact, shale gas is among the opportunities that the explorer will be pursuing in 2007. Duvernay recently announced that it successfully completed four wells in the phosphate zone. The company is also planning to target large reserve prospects in stratigraphic and structural traps in the Mississippian and Devonian carbonates. Two Paleozoic wells are expected to spud in mid 2007 at the company's Groundbirch/Sunset Prairie complex.

FET Resources Ltd., an operating company of **Focus Energy Trust**, was busy in the **Tommy Lakes** area in 2006. FET rig released 19 wells in the area, all targeting the areally-extensive blanket sand of the Triassic Halfway Formation. The company's 2006/07 winter development program finished with the drilling of twelve development wells and two exploratory wells (to the northwest of the main Halfway pool). These wells were recently tied in and placed on production. The Tommy Lakes area represents Focus Energy Trust's largest single asset and main natural gas producing property in northeast BC. The original gas-in-place (OGIP) for the total pool is over 600 Bcf, of which approximately 31 per cent has been produced.

In late 2006, **Terra Energy Inc.** announced a new discovery in the **Tower Lake** area. An exploratory outpost well at 7-8-81-17W6, targeting the Triassic Halfway/Doig, was fracture stimulated and tested at a rate of 3.5 mmcf per day at a flowing pressure of 7,700 kilopascals. The new discovery represents the second of three separate and distinct Triassic Doig plays which the company has identified in this area. Terra plans to drill additional wells south of the 7-8 well to delineate the size of the pool. Terra Energy is well positioned for growth in the Fort St. John region. Its core areas

include the areas of **Boudreau, Mica, Parkland, Septimus, Tower Lake, and Wilder**. Terra recently announced the completion of its Tower-Septimus pipeline project. The 19-kilometre long pipeline connects Terra's gas wells in the Septimus field to the company's Wilder gas plant. The Tower-Septimus pipeline will increase Terra's production by roughly 381 barrels of oil equivalent (BOE) per day. In 2006, the company's production averaged 2,819 BOE per day.

Silverwing Energy Inc. saw its exit production for 2006 almost triple from a year earlier to 1,150 barrels of oil equivalent (BOE) per day. The increase was primarily the result of tie-ins of a number of wells in the **Beavertail, Buick Creek, Sirius, and Umbach** areas. These areas are a sub-project within Silverwing's core area of **Prespatou**, where Silverwing acquired certain assets and facilities in August of 2006. The acquired assets significantly increase Silverwing's aggregate land holdings at Prespatou to 26,164 gross hectares and supports the firm's plans for exploration and development in the area. Primary targets in Silverwing's northeast BC project areas are the Cretaceous and Triassic. The company has indicated that high operating costs and low commodity prices have affected overall profitability of the gas-prone Prespatou properties.

Pengrowth Corporation is coming off its most successful capital program to date. Pengrowth, which administers **Pengrowth Energy Trust**, saw its 2006 investment spending fully replace reserves depleted by annual production. Plans for 2007 in northeast British Columbia include a waterflood development project in the **Cecil** area and production optimization in the core areas of **Oak and Rigel**. Development plans also entail drilling horizontal production wells in the **Elm** area to enhance waterflood performance, and drilling in the **Prespatou** area to target gas in the Cretaceous Bluesky, Gething and Triassic Halfway formations. Other Pengrowth development projects in the Fort St. John region will occur as a result of its association with **Monterey Exploration Inc.** (34 per cent owned by Pengrowth).

Advantage Energy Income Fund and its June 2006 merger with **Ketch Resources Trust** is paying dividends for Advantage and its northeast BC properties. The merger with Ketch added production and proven plus probable reserves of approximately 13,000 barrels of oil equivalent (BOE) per day. The largest component of Advantage's winter drilling program is in northeast BC, specifically in the areas of **Black Creek and Martin Creek**. Results in these areas have surpassed expectations with well deliverability in excess of expanded facilities capacity, and extension of pool boundaries beyond earlier interpretations. A well drilled in the Black Creek area in early 2006 is currently producing at an average of 1.9 mmcf per day from the Triassic Baldonnel. The d-47-B/94-H-12 well started production in April 2006.

ARC Energy Trust continues to be a major player of Upper Montney shale gas development in the

Dawson Creek area. Production from the field is currently 20 mmcf per day with 56 wells producing (Walsh *et al.*, 2006). In 2006, ARC drilled four horizontal wells and six verticals in the area. Improved technology has made the economics of the Dawson field Upper Montney play more attractive for the long term. To reduce costs and enhance economics, ARC is using horizontal drilling technology along with new and improved completion techniques to exploit the field. Previous vertical drilling through very tight spacing ultimately generated very shallow declines. ARC uses an example of a \$5 million horizontal well drilled in the area a few years ago that dramatically reduced the ultimate costs to develop the field and significantly enhanced ultimate recovery. In 2007, the Trust plans on drilling eight wells in the area (four horizontal, four vertical) and expects to spend \$50 million. Construction of a pipeline to a new third-party gas plant is also expected to be completed later in 2007.

Deep Basin Region

The Deep Basin region comprises an area of 692,000 hectares and offers thick sequences of stacked, regionally extensive, gas-saturated, Mesozoic clastic reservoirs. Traditionally, exploration has focused on identifying stratigraphic sweet spots that feature conventional reservoir quality in the Cadotte and Falher. In fact, some of these conglomeratic reservoirs continue to offer some of the highest initial deliverability rates in the province. The tight gas component of the Deep Basin, however, offers a huge potential resource that is now being exploited. In the *Exploration Assessment of Tight Gas Plays Northeast British Columbia* (BC EMPR, 2003), the gross OGIP resource is estimated at 70 to 200 Tcf. Potential Deep Basin tight gas targets include the Cardium, Dunvegan, Cadotte, Bluesky, Cadomin, Nikanassin, Halfway, Doig and Montney. Development of the Cadomin was initiated in 2004, and production continues to come on stream in 2006.

Land Sales

Land brokers and producers spent \$42 million acquiring Crown petroleum and natural gas rights in the Deep Basin region in 2006, a significant drop from 2005 (*Figure 24*). Despite lower overall spending in the region, some high bonuses were paid for parcels during the year. British Columbia's October Crown PNG rights disposition generated some of the highest successful bids. Notably, BP Canada Energy Company paid \$2.59 million or \$8,848 per hectare for a lease covering 293 hectares in the Sundown area (93-P-8). To the south of that lease, BP paid another \$7 million

for a 1,469-hectare drilling licence (\$4,748 per hectare) for PNG rights from the base of the Cadomin-Dunlevy-Nikanassin zone to the basement. EnCana Corporation has been the most active operator in the Sundown area with its ongoing horizontal development of the Cadomin gas play. EnCana's Steeprock natural gas plant in nearby Kelly Lake officially opened in October. The plant can process 198 mmcf per day of gas and speaks to the significance of EnCana's Cutbank Ridge play.

There were some other expensive parcels sold to land brokers and producers throughout the year. At the January 2006 PNG rights disposition, Bristol Land and Leasing Ltd. paid \$4.36 million for a 2,331-hectare licence (\$1,869 per hectare) in the Bissette/Swan Lake area. EnCana Corporation and Bear Ridge Resources Ltd. are currently operating in the area; both are developing Triassic shale gas potential from the Montney turbidites. The priciest purchase early in the year was made by Windfall Resources Ltd. The land broker paid \$2.6 million for three parcels in the Hiding Creek area. ConocoPhillips Canada operates in the area targeting a number of zones in the Lower Cretaceous.

Drilling

A total of 229 wells were rig released in the Deep Basin region in 2006, down slightly from the previous year. ConocoPhillips Canada and EnCana Corporation accounted for 90 per cent of well activity in the region (206 rig releases combined). The major target interval for operators was the Cadomin, with approximately 244 zones identified (*Figure 26*). Gas production from these Cadomin zones totalled over 25 Bcf for the year. Forty-one wells identified the Doig/Montney as the objective, mostly in the Swan Lake area. Gas production in 2006 from the Doig/Montney was 6.6 Bcf, more than double from 2005. Wells targeting the Nikanassin have also increased substantially, particularly over the last two years. Twenty wells rig released in the Deep Basin in 2006 listed the Nikanassin as the target zone; gas production from those wells totalled 2.53 Bcf. Almost 90 per cent of Nikanassin production can be attributed to ConocoPhillips' well activity in the Hiding Creek area. Other potentially productive zones drilled in the Deep Basin region in 2006 were the Paddy, Cadotte, Falher, Bluesky and Gething.

Production

The distribution of production from wells rig released in the Deep Basin region in 2006 is shown in *Figure 27*.

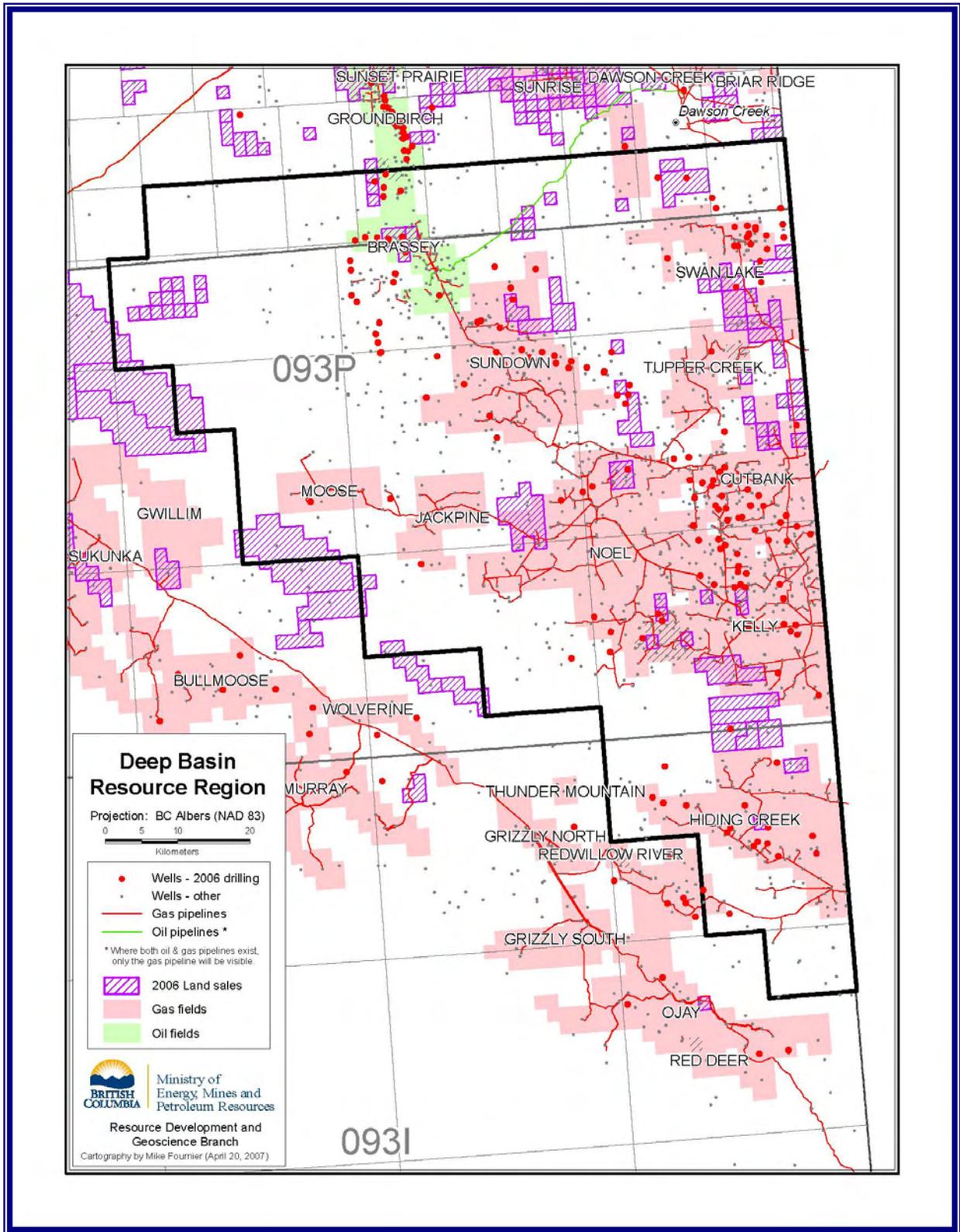


Figure 23. Land sale and drilling activity in the Deep Basin region of NEBC in 2006.

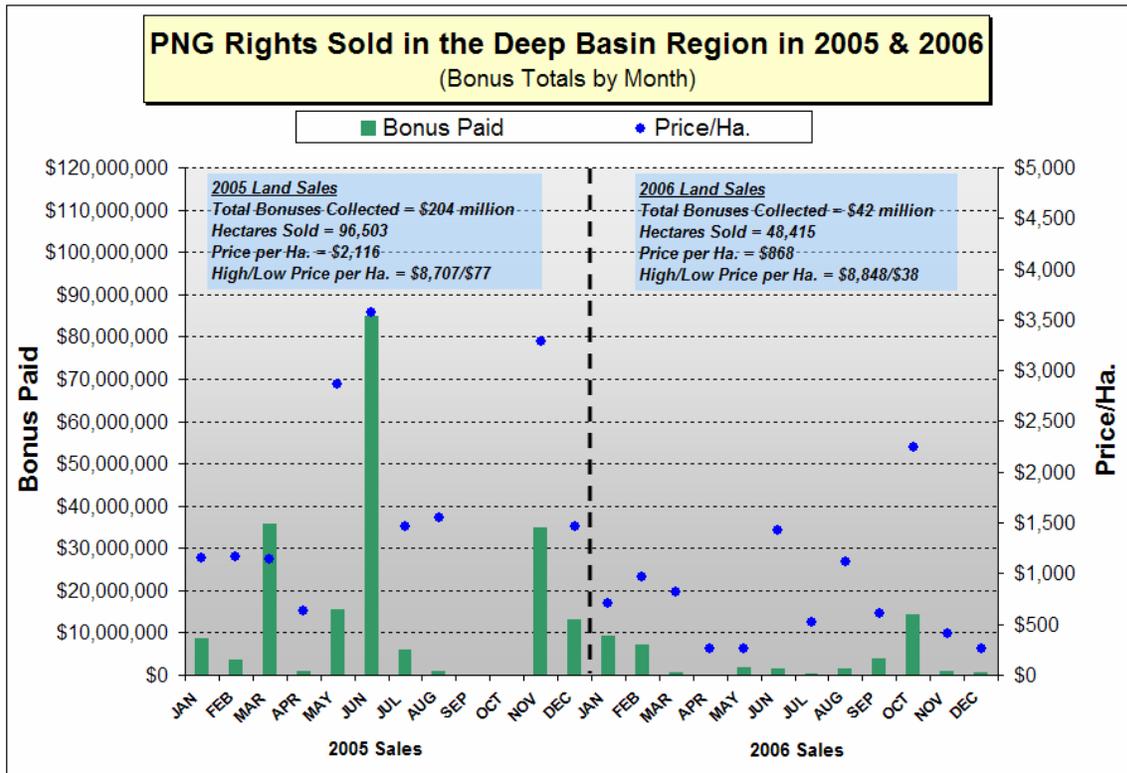


Figure 24. PNG rights sales in the Deep Basin region in 2006.

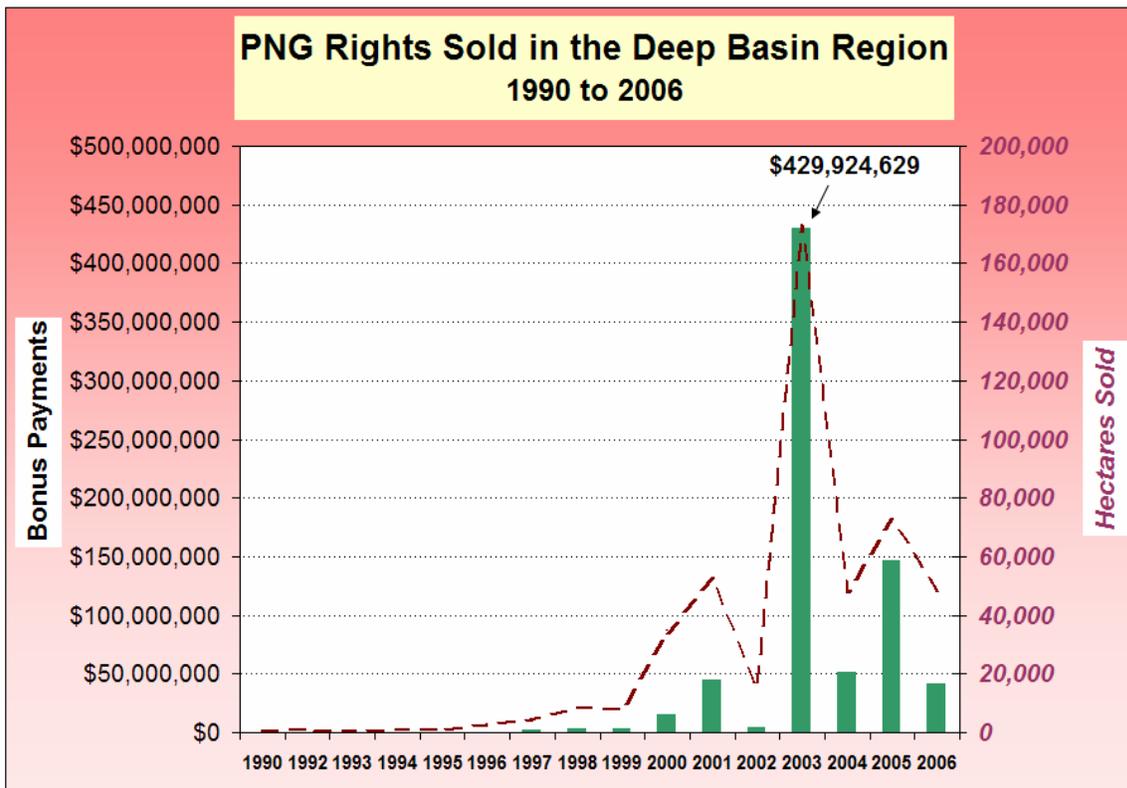


Figure 25. PNG rights sales in the Deep Basin region from 1990 to 2006.

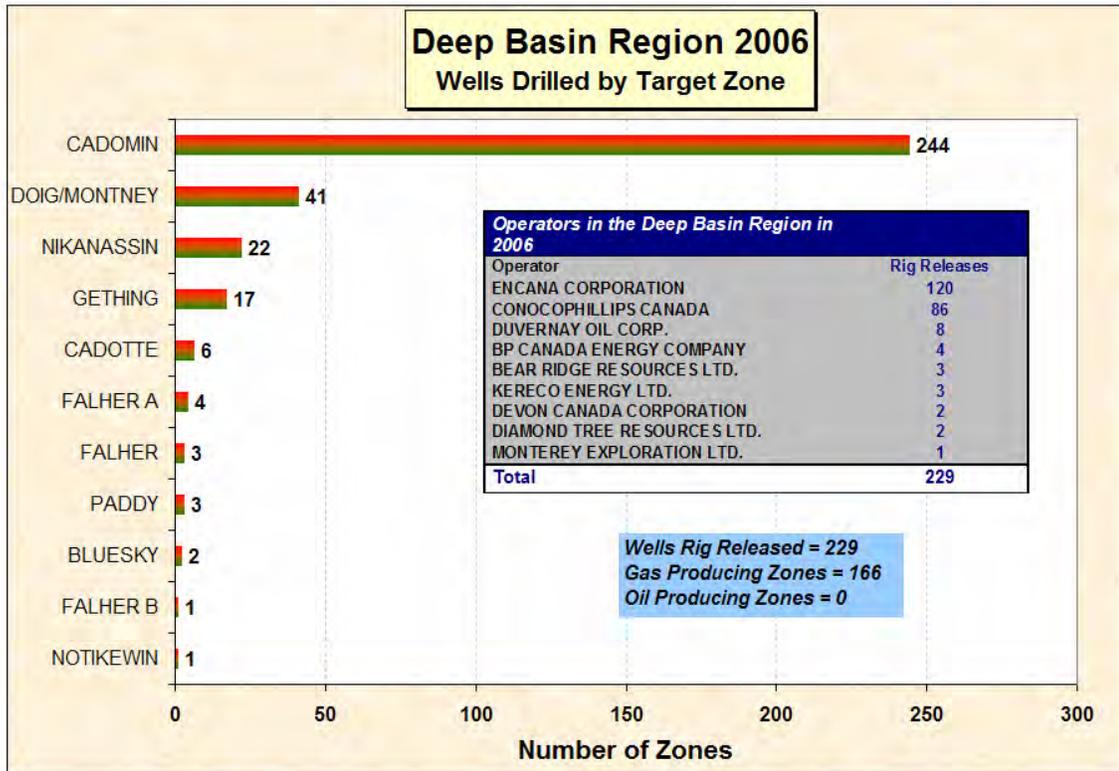


Figure 26. Target zones from wells rig released in the Deep Basin region in 2006.

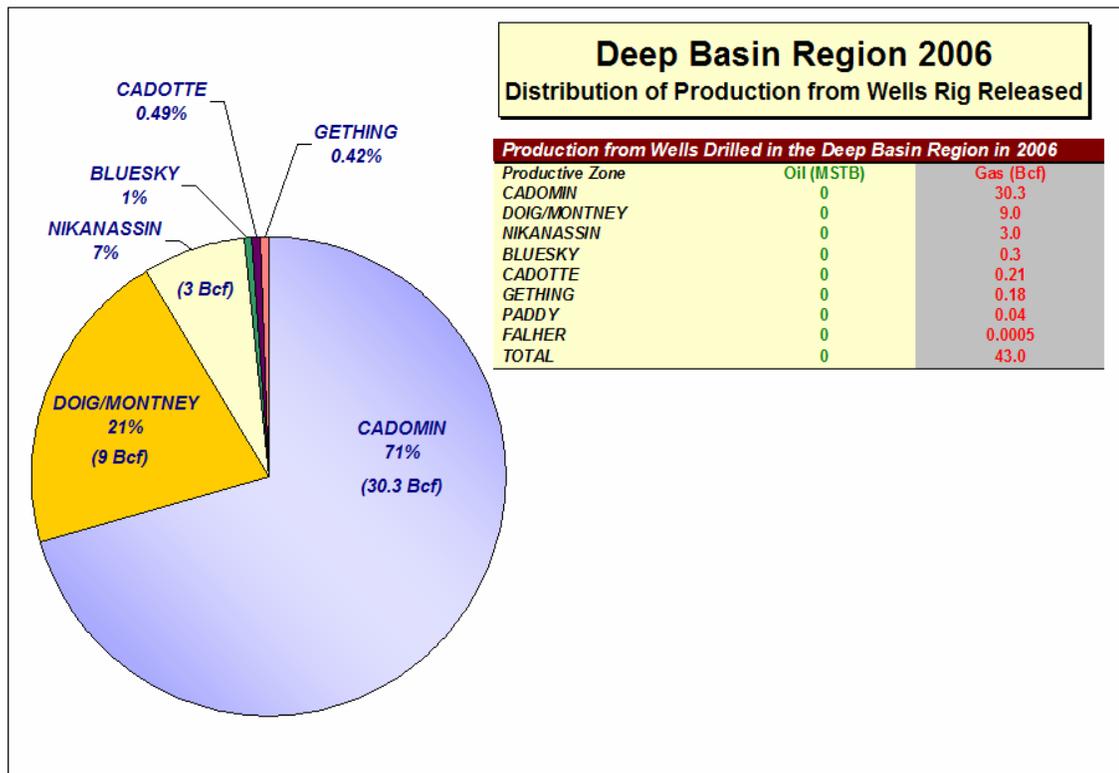


Figure 27. Distribution of production from wells rig released in the Deep Basin region in 2006.

Oil & Gas Exploration Activity

The **Cutbank, Kelly, and Noel** areas continue to be the core of well activity in the Deep Basin region. The 81 wells rig released from these three areas accounted for 35 per cent of the region's total rig releases and almost half of the region's 2006 production (43 Bcf). The primary objective for producers in these areas continues to be the Lower Cretaceous Cadomin, but other prospective zones such as the Paddy, Falher and Gething as well as the Triassic Doig are also targets. **EnCana Corporation** was again the busiest operator drilling 62 wells. The remaining 19 were drilled by **BP Canada Energy Company, ConocoPhillips Canada Ltd., Diamond Tree Resources Ltd., Kereco Energy Ltd. and Monterey Exploration Ltd.** BP Canada Energy Company plans to spend between \$500 million and \$800 million over next decade on Noel area tight gas development (up to 180 wells to develop Cadomin). In fact, one of the higher producing wells drilled in the Noel area in 2006 was drilled by BP Canada. The well, c-78-J/93-P-1, was placed on production in August and has produced 641 mmcf at an average rate of four mmcf per day from the Cadomin.

The number of wells drilled in the **Brassey** area in 2006 reached 55, down by only one from 2005. Of these, **ConocoPhillips Canada** drilled 49 wells with most targeting the Lower Cretaceous Cadomin Formation. Thirty-three of ConocoPhillips' Cadomin wells recorded gas production totalling 2.5 Bcf. Another operator in the Brassey area was **Duvernay Oil Corp.** The company drilled three wells in 2006 as it continued to expand and accelerate development of the Brassey Cadomin gas pool it discovered in 2005. Duvernay plans to double existing capacity at its Brassey gas plant in 2007 to handle additional gas volumes from the area (additional 10 mmcf per day).

At **Sundown**, a total of 39 wells were rig released. **EnCana Corporation** led the way with 28 wells, followed by **ConocoPhillips** with six. The remaining wells were divided between **Duvernay Oil Corp.** and **BP Canada Energy Company.** The key objective in this area is the Cadomin but other identified target zones included the Cadotte, Falher, Nikanassin and the Triassic Doig.

EnCana Corporation continues to develop Triassic shale gas potential from the Montney turbidites in the **Bissette Creek/Swan Lake** area. EnCana has almost doubled its operations in the area from a year ago. The producer rig released 26 wells in 2006; twenty-four showed gas production totalling 7.3 Bcf, a seven-fold increase from last year. EnCana now has 48 wells producing from the Montney in its Cutbank Ridge resource play and has seen encouraging results from the increased use of horizontal drilling technology (four tracks per horizontal well). Basic completions costs for Montney wells have improved to \$2 million per well over the last couple of years and completion days have decreased from 51 to 19. EnCana's experience in the Barnett Shale in Texas is cited as a key reason for improved success in the area. With current mapping of

the Upper Montney, EnCana has identified more than three Tcf of original gas-in-place (OGIP).

The start-up of **EnCana Corporation's** Steeprock gas processing plant in November 2006 has increased natural gas production from the company's Cutbank Ridge resource play to about 250 mmcf per day, up from 171 mmcf per day in 2006. The \$60-million plant is located about 50 kilometres south of Dawson Creek and is able to process 198 mmcf per day of gas from the **Bissette Creek, Cutbank, and Kelly** areas. Since 2003, EnCana has invested an average of over \$1 billion a year in British Columbia on upstream exploration and development activities.

Northern Foothills Region

The Northern Foothills region incorporates an area of 2.9 million hectares and covers mostly foothills and mountainous terrain. Laramide-aged structures provide the opportunity for structural traps where natural gas may accumulate. Prospective intervals include Cretaceous clastics, but traditional targets are the Triassic Baldonnel, Charlie Lake, and Halfway formations, and the Mississippian Debolt Formation. The western boundary of the Triassic play is constrained by outcrop and subsequent breaching of any trap. The Mississippian type play is typified by the Sikanni and Pocketknife fields where natural gas is trapped in linear northwest trending thrust-fault related structural features. In addition, Devonian-aged rocks outside of the region are hosts to very significant hydrocarbon accumulations. While subsurface well control is limited within the region, there remains significant undiscovered potential. The Devonian Keg River and Slave Point formations host major natural gas accumulations in northeastern BC such as Clarke Lake. These occur in ancient barrier reef complexes and atolls that can be mapped trending into the region. These rocks are prospective in areas that have been uplifted. Optimum positioning of reservoir rock, in a structurally high position, may result in the creation of very large pools. The western limit for Devonian-play types is defined by a line about five to ten kilometres west of the outcrop belt of Devonian or older sediments. This five-to-ten kilometre band accounts for the possibility of encountering second-sheet Devonian reservoir in an overthrust scenario.

Land Sales

Over five per cent of the province's land sale bonuses in 2006 were collected from PNG rights sold in the Northern Foothills region (*Figure 28*). A total of \$33 million was spent on 93,175 hectares at an average price of \$355 per hectare (*Figure 29*). Most PNG rights purchases occurred along the eastern boundaries of the resource region from west of Adsett in the north down to the Graham and Altares areas in the south. Land sale activity was particularly strong in the central region around the areas of Caribou, Lily Lake, Pocketknife, and Sikanni. A parcel at the May 25, 2006 PNG rights sale reaped the highest bonus during the year. The

1,447-hectare drilling licence near Hudson's Hope fetched \$1.55 million.

Drilling

A total of 62 wells were rig released in the Northern Foothills region in 2006 (*Figure 30*). The Altares and Julienne Creek areas saw the highest activity with 22 and 13 wells drilled, respectively. Most wells drilled in the two areas were targeting the shallow Cretaceous Bluesky/Gething sands but two wells listed the Triassic Charlie Lake and Halfway zones as productive. Again, the lead operator in the Northern Foothills region was ProEx Energy Ltd. with 19 wells drilled followed by Canadian Natural Resources Ltd. with ten wells completed.

Production

The distribution of production from wells rig released in the Northern Foothills region in 2006 is shown in *Figure 31*.

Oil & Gas Exploration Activity

ProEx Energy Ltd. continues to achieve exploration and development success in the Northern Foothills region. The natural-gas-weighted producer explores for and produces gas from the Triassic Halfway and the Lower Cretaceous Bluesky/Gething sands. It is the most active operator in the region and since mid-2004 has booked almost 200 Bcf of proved plus probable reserves in its Foothills project area. The **Altares** area is one of the more active operating areas for ProEx. Activity entails a step-out drilling program to expand Bluesky sweet gas accumulation outside the current production area. Ten wells were rig released in 2006; five of those listed production from the Bluesky. In the third quarter of 2006, ProEx confirmed a new Halfway pool discovery from two sour gas wells in the Julienne Creek area. These wells will be co-mingled with existing sweet Gething production (facility modifications are underway). ProEx recently completed the final portion of a Julienne Creek sales line to a Spectra Energy Ltd. tie-in point. In 2007, ProEx plans to spend \$120 million on exploration and development programs, matching its 2006 drilling pace with about 45 net wells mainly in the Northern Foothills.

Kereco Energy Ltd. drilled three wells in the **Blair Creek** area in 2006. A development well drilled in July (c-58-F/94-B-16) produced at an initial rate of 1.2 mmcf per day from the Bluesky but has since stabilized at an average rate of 759 mmcf per day. Priorities for 2006 were to evaluate, test and develop the Blair Creek Lower Cretaceous gas play on recently purchased land using newly acquired seismic data. Kereco splits its time between conventional growth prospects and unconventional value-growth plays. Longer-term plans include a potentially commercial shale gas play (Cadomin) at Blair Creek.

Alberta Clipper Energy Inc. saw substantial expansion of its **Trutch** area gas pool in 2006. The

company completed and tested five well bores, which resulted in five producing gas wells. Alberta Clipper is targeting a low-risk Triassic Halfway gas development project at Trutch. The project offsets a successful Halfway Tommy Lakes area gas development project.

Keyera Facilities Income Fund is going to meet the demand for gas gathering infrastructure in the **Buckinghorse River** area. Work was completed in October 2006 on a 48-kilometre, six-inch diameter, sour natural gas gathering pipeline that carries raw gas from north of the Buckinghorse area to Keyera's gas processing plant at Caribou. To accommodate the additional gas, Keyera has expanded processing capacity at its Caribou gas plant from 40 mmcf per day to 65 mmcf per day. Producers are chasing a number of productive zones north of the Buckinghorse area. The Caribou plant is able to handle both sweet and sour gas processing. Gas from the plant flows into the **Spectra Energy** T-North transmission system.

Canadian Spirit Resource Inc. (CSRI) continues to focus on building an unconventional gas play in the **Farrell Creek** area. The Farrell Creek program includes the staged stimulation and production testing of the Gething Formation coals, interbedded sands and Bluesky tight gas. CSRI is now working towards bringing this gas play to a commercial production level. In 2006, the company completed and stimulated four wells in the Gething Formation, which resulted in natural gas flows. So far, CSRI is optimistic about the results of its Farrell Creek pilot program and anticipates that the current evaluation process is valuable towards the development of commercial production from the area. A recently updated evaluation (Sproule Associates Limited) of the unconventional natural gas resource on CSRI-interest lands at Farrell Creek area reaffirms a total raw gas-in-place of 1.8 Tcf (1.4 Tcf attributed to Gething, 0.4 Tcf to Moosebar and Gates).

Canadian Natural Resources Ltd. (CNRL) is seeing good production rates from two exploratory wells completed in the Graham area. Both wells were rig released in 2006 and completed in the Triassic Baldonnel. A well at d-12-I/94-B-7 has been producing at an average rate of 1.5 mmcf per day since May 2006. Cumulative production is 419 mmcf. The other Baldonnel producer at d-100-E/94-B-08 started production in July and has been producing at an average rate of 2.2 mmcf per day. Cumulative production is 521 mmcf. Both wells come on the heels of another successful Baldonnel producer in the area. The b-11-I/94-B-7 well, which was drilled by Anadarko Canada in 2005 (before CNRL acquired Anadarko Canada's western Canadian assets) is currently producing at an average rate of 4.5 mmcf per day and has produced almost 1.6 Bcf since coming on stream in April of 2006.

Talisman Energy Inc. recently drilled a successful natural gas well in the **Federal** area (near Graham and Butler areas) with Husky Oil Operations Limited (50%). The d-28-H/94-B-7 well tested at restricted rates of 21 to 25 mmcf per day (gross raw gas) with a flowing wellhead pressure of 2,300 psi. The well is expected to commence production by November 2007. Talisman has used its extensive thrust and fold belt exploration

experience in opening up this new, high potential area in the Northern Foothills. The successful Federal area well was drilled along a new exploration fairway and Talisman has identified two other opportunities on the

structure, which it expects to drill over the next two years. The producer holds rights to approximately 10,000 gross hectares in the region.

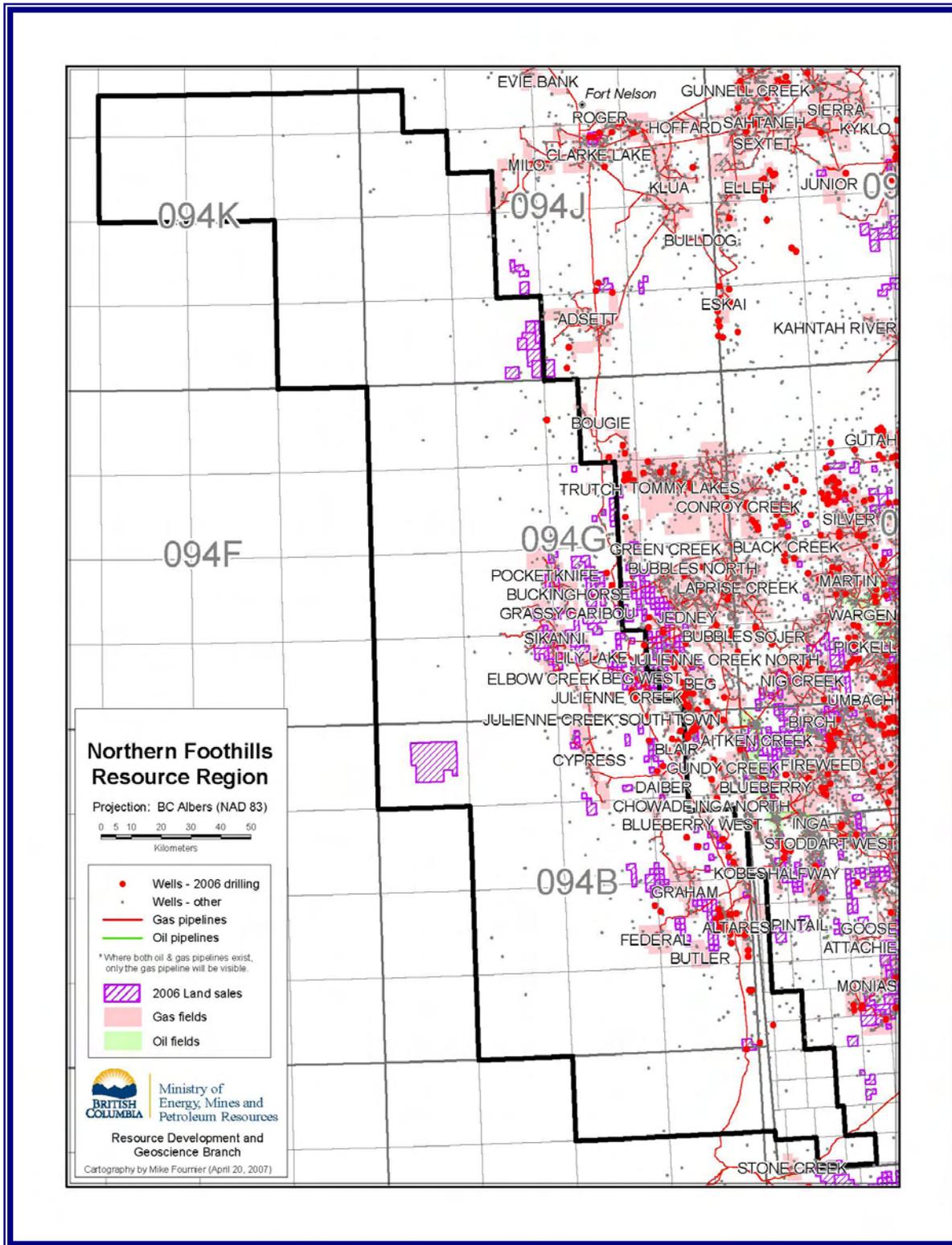


Figure 28. Land sale and drilling activity in the Northern Foothills region of NEBC in 2006.

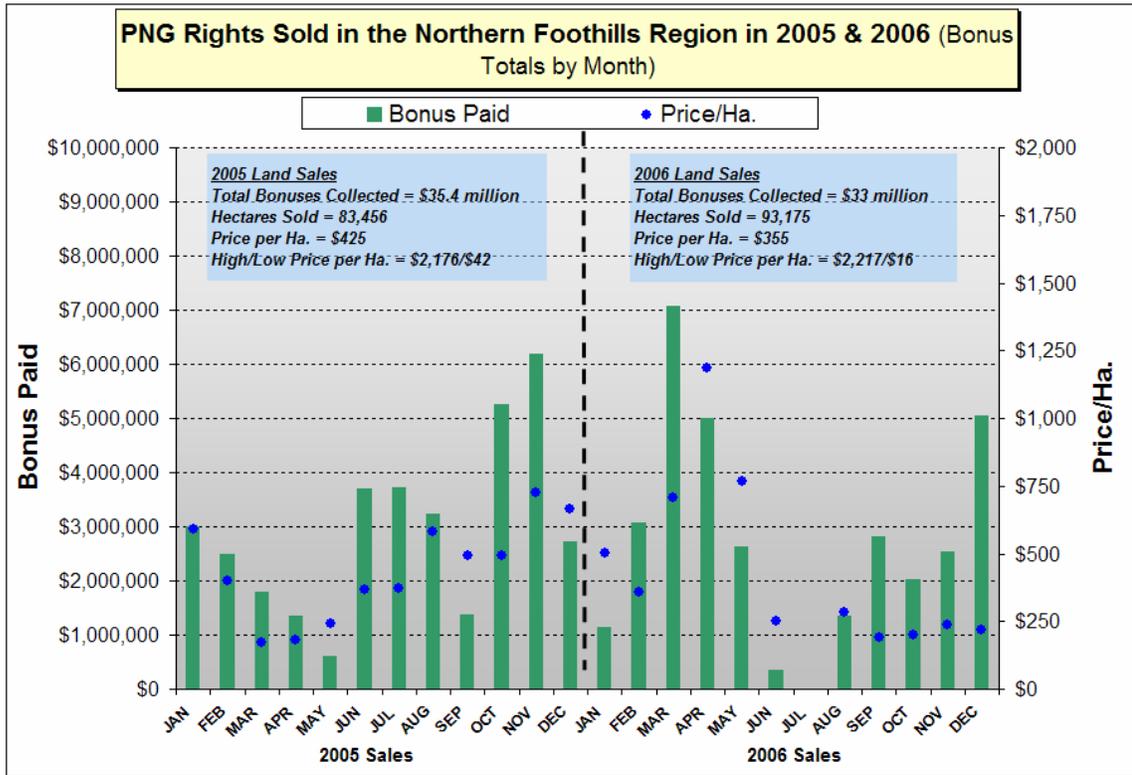


Figure 29. PNG rights sales in the Northern Foothills region in 2006.

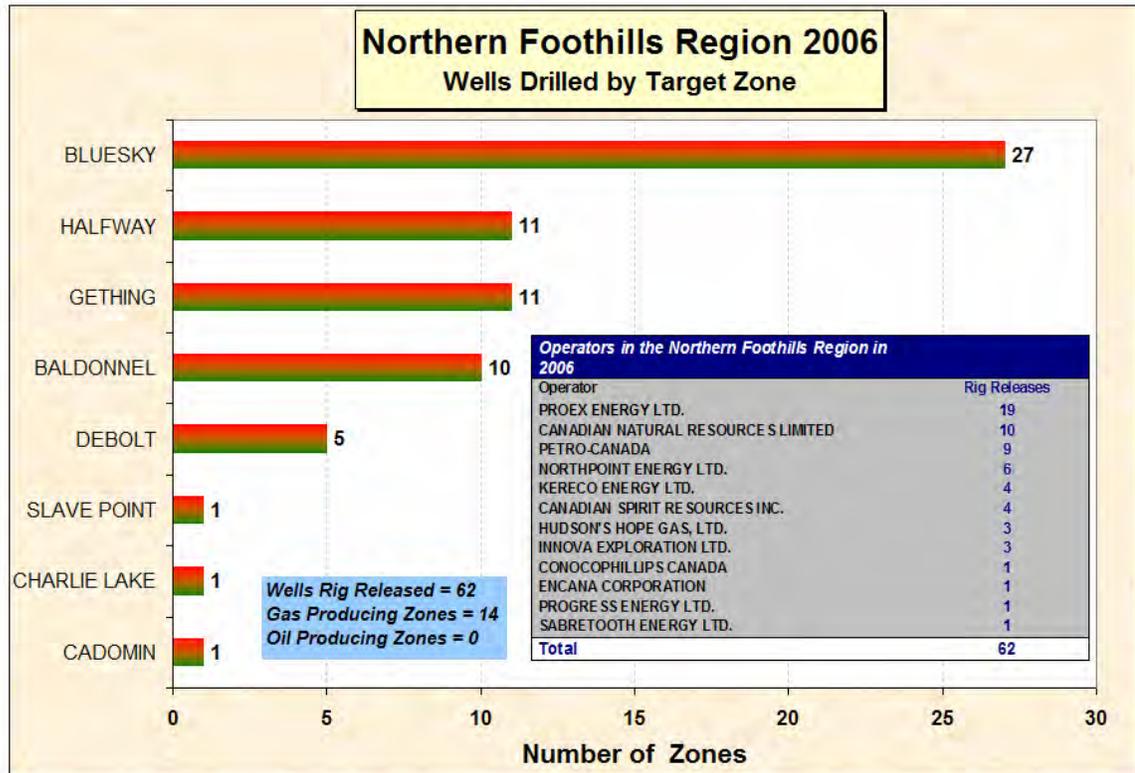


Figure 30. Target zones from wells rig released in the Northern Foothills region in 2006.

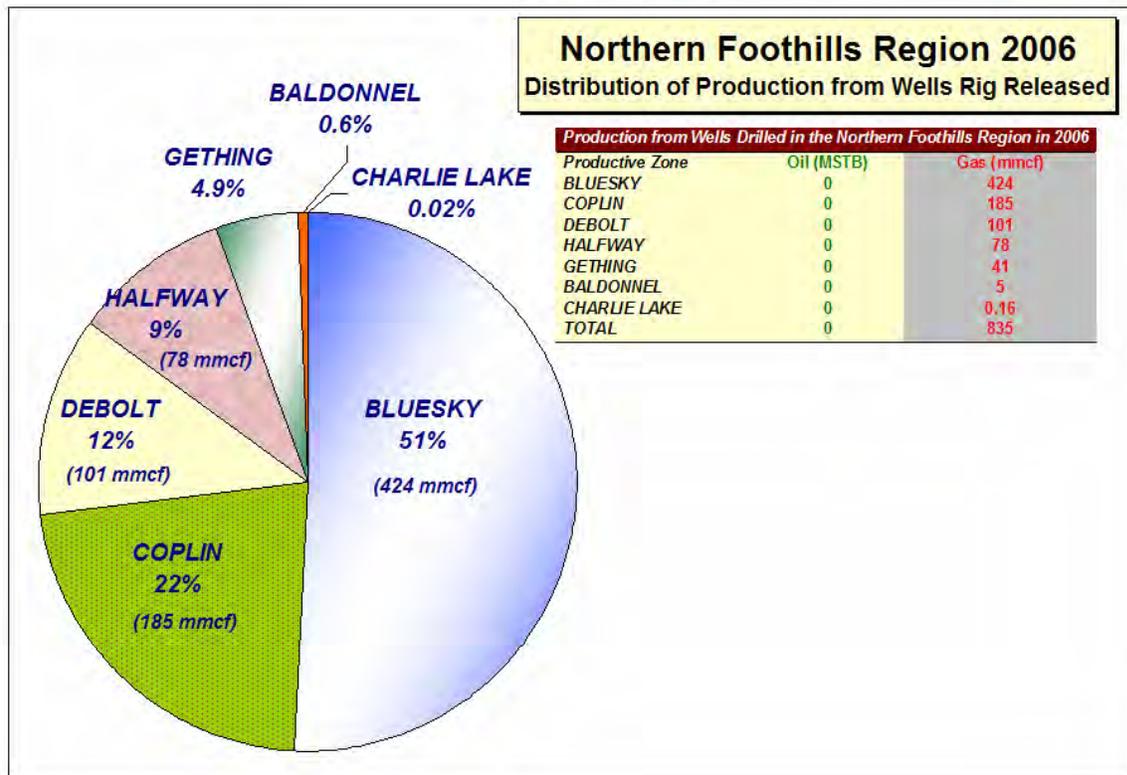


Figure 31. Distribution of production from wells rig released in the Northern Foothills region in 2006.

Southern Foothills Region

The Southern Foothills region of northeastern British Columbia covers an area of 1.2 million hectares. The region has varied topography, ranging from low rolling hills in the east to anticlinal hills and relief of 1,800 metres in the western region. This topography reflects the structure of underlying bedrock, which consists of Paleozoic age in the southwest to Upper Cretaceous in the northeast. Exploration for natural gas in the Southern Foothills region tends to hold a moderate to high associated risk along with relatively high capital costs. But hydrocarbon traps found within these folded and faulted structures can contain large reserves of natural gas, occasionally with extraordinary productivity. Faulted Triassic Baldonnell and Charlie Lake formations are the principal exploration targets in the region.

Land Sales

In 2006, industry paid \$166.5 million to acquire PNG rights in the Southern Foothills region (Figure 33). A total of 70,061 hectares was sold at an average price of \$2,377, slightly lower than the average price paid per hectare in 2005. The most popular area for PNG rights sales was in and around the Commotion and Sukunka areas in the northern half of the region. Canadian Coastal Resources Ltd. paid the top bonus of \$33.38 million for a 10,620-hectare license northwest of the Bullmoose area. The parcel, acquired at the June 2006

tenure sale, covers rights to the base of the Cadomin-Dunlevy-Nikanassin zone, while another portion covers rights from surface to basement. A parcel north of the Gwillim area also brought in high bonus totals from that same land sale. In 2006, Imperial Oil Resources sought offers from parties wishing to co-develop or acquire developed or undeveloped land interests in the Gwillim area. The area offers ample drilling opportunities on seismically defined structures with significant gas development potential. Faulted Triassic Baldonnell and Charlie Lake formations are key exploration objectives in this region.

Drilling

A total of 26 wells were rig released in the Southern Foothills region in 2006 (Figure 34). The leading operators in the Southern Foothills region tend to be the large producing companies such as Canadian Natural Resources Ltd., ConocoPhillips Canada Ltd., Talisman Energy Inc., Shell Canada Limited, and Suncor Energy Inc. The busiest areas for drilling activity in 2006 were in the Ojay and Bullmoose fields with 10 and seven wells drilled, respectively.

Production

The distribution of production from wells rig released in the Southern Foothills region in 2006 is shown in Figure 35.

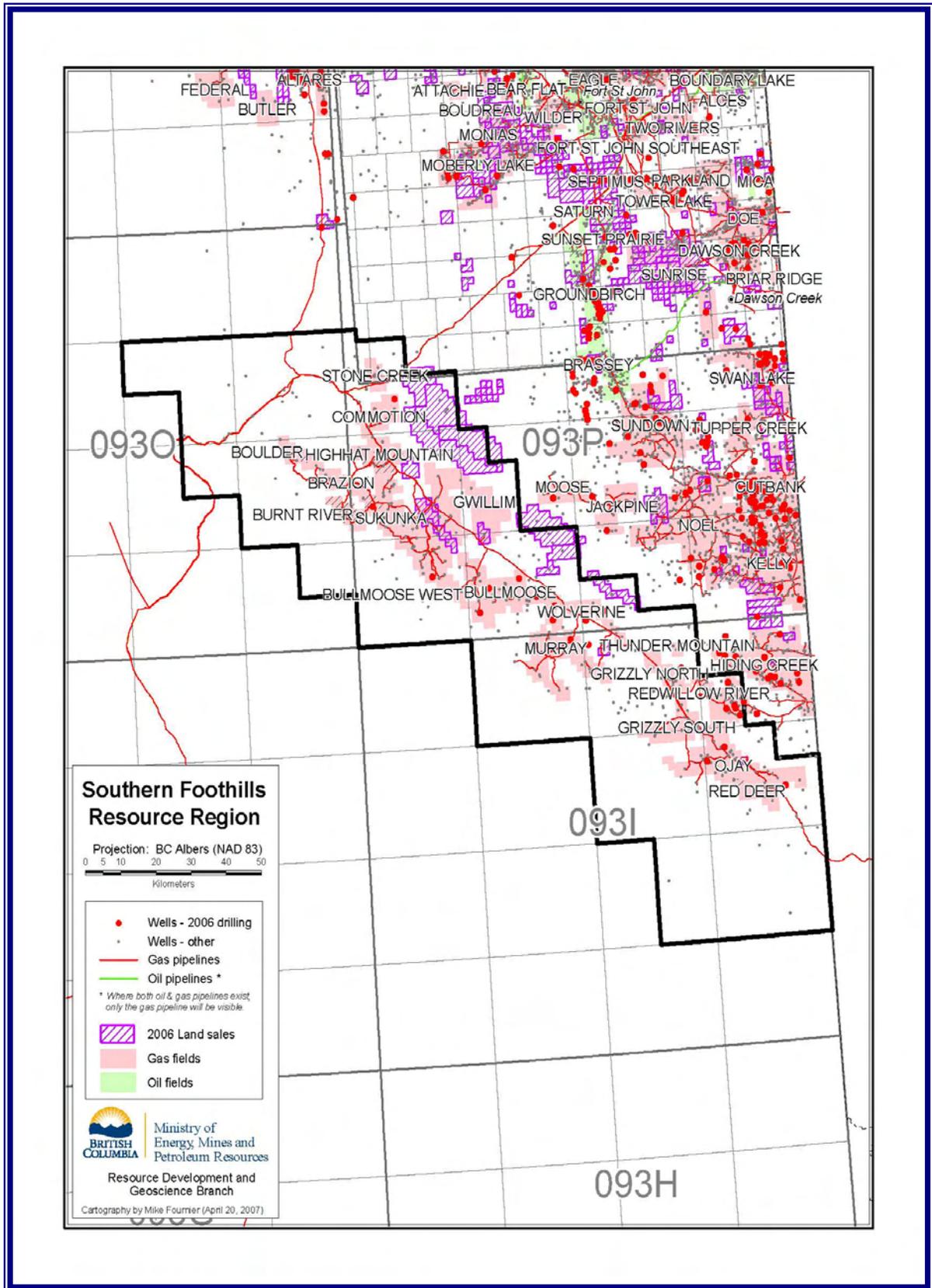


Figure 32. Land sale and drilling activity in the Southern Foothills region of NEBC in 2006.

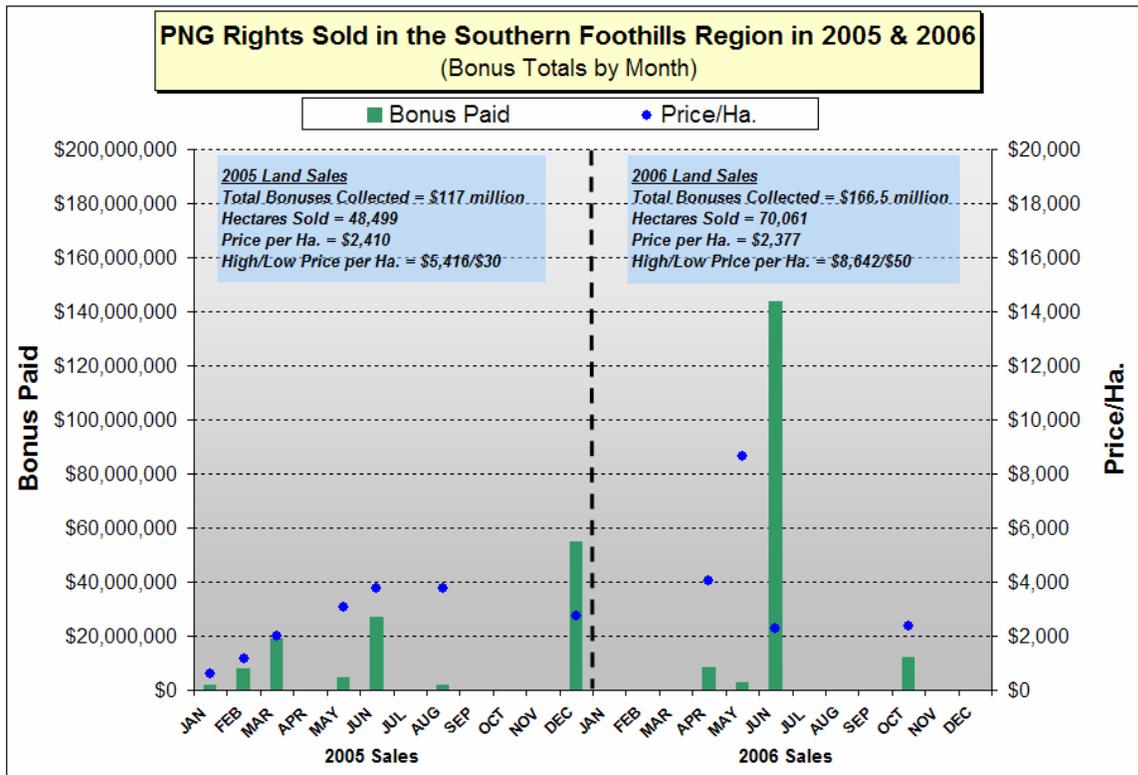


Figure 33. PNG rights sales in the Southern Foothills region in 2006.

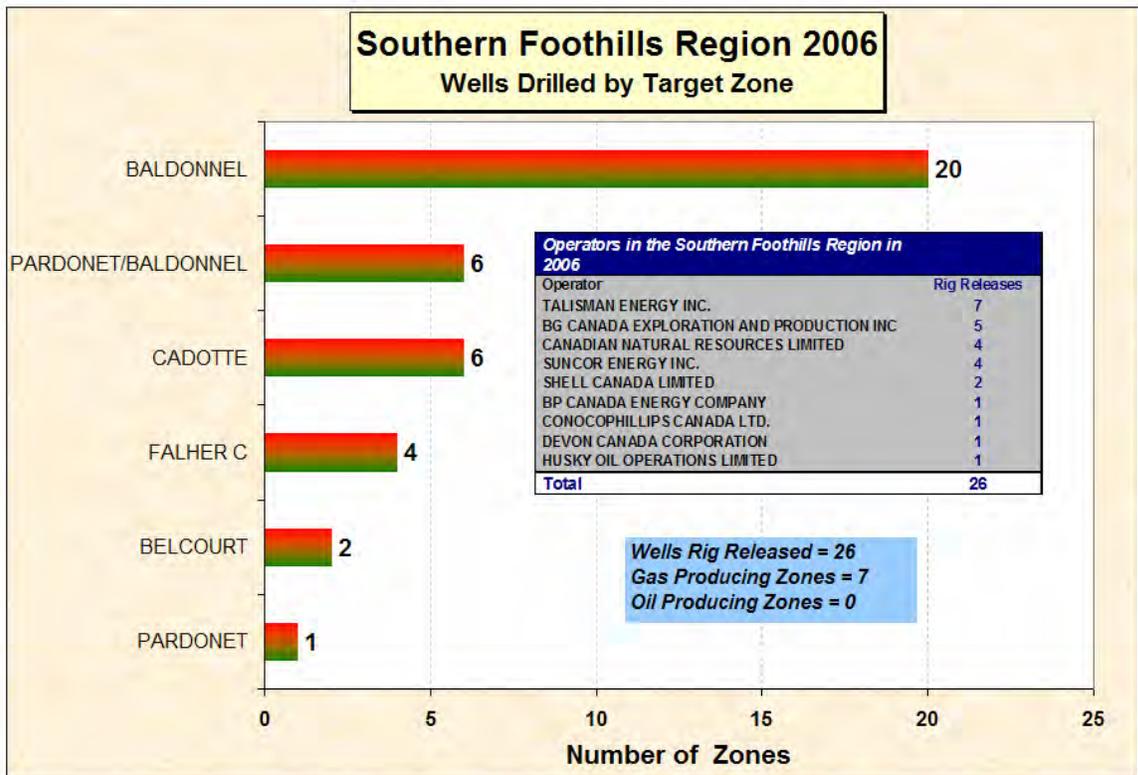


Figure 34. Target zones from wells rig released in the Southern Foothills region in 2006.

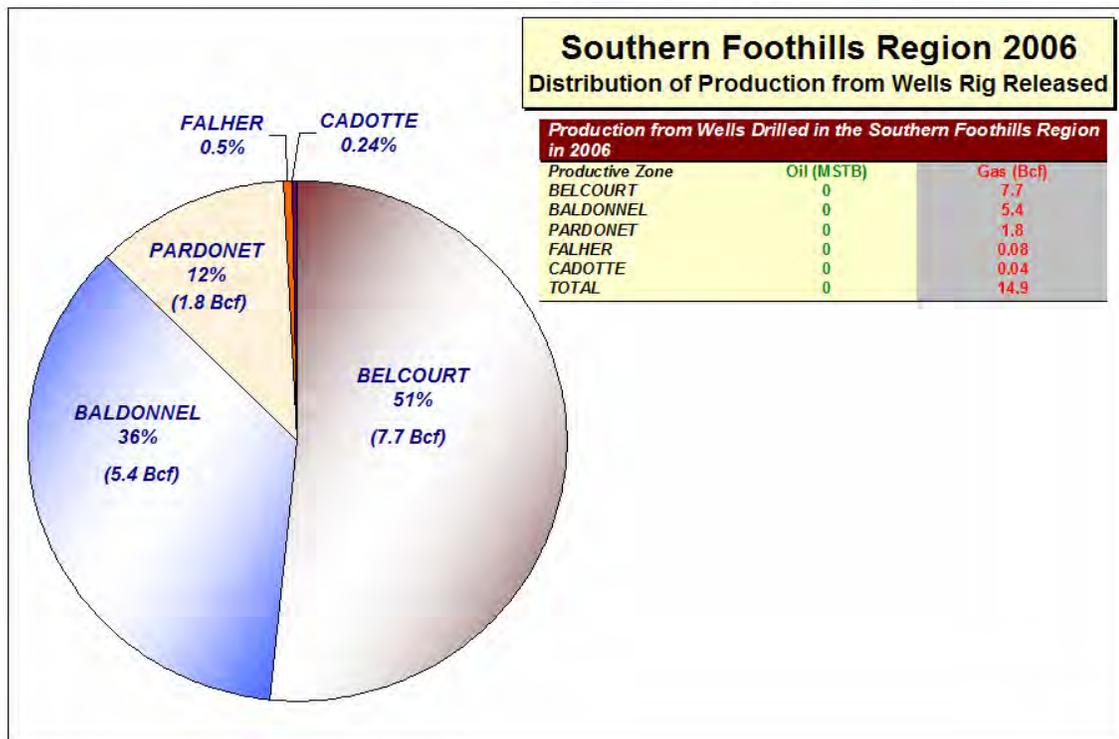


Figure 35. Distribution of production from wells rig released in the Southern Foothills region in 2006.

Oil & Gas Exploration Activity

The highest drilling activity in the Southern Foothills occurred in the **Ojay** area. **BG Canada Exploration and Production Inc.** drilled five wells in the area with one development well showing multiple zone production from the Lower Cretaceous Cadotte and the Falher. **Canadian Natural Resources Ltd.** drilled the most productive well in the area at b-43-L/93-I-16. Gas production is listed from the Triassic Baldonnel at an average rate of over 15 mmcf per day. Other operators in the area chasing Lower Cretaceous and Triassic targets include **ConocoPhillips Canada Ltd.**, **Devon Canada Corporation** and **Talisman Energy Inc.**

The **Bullmoose** area was the second most active in terms of 2006 rig releases. All seven wells drilled in the area targeted Triassic zones with one well, drilled by **Talisman Energy Inc.**, showing excellent gas production. The Talisman et al Bullmoose a-A43-E/93-P-3 Triassic Pardonet well tested at rates of up to 27 mmcf per day of gross raw gas. The well was tied-in during the fourth quarter of 2006 and is currently producing at 17.7 mmcf of raw gas per day. Production has already reached 2.3 Bcf after four months of production. Talisman views its Monkman area properties within the Southern Foothills region as a key component of its deep gas strategy and of its continued commitment to conventional gas production. Talisman expects capital spending of approximately \$111 million in 2007 in its active Monkman/Southern Foothills region.

In early 2006, **Canadian Natural Resources Limited (CNRL)** rig released a well (a-85-I/93-I-14) in the **Murray River** area that is producing gas from the Baldonnel at an average rate of 25 mmcf per day. The well was placed on production in August 2006 and has produced almost 5 Bcf to the end of March 2007. CNRL is an experienced operator in the Murray River area targeting zones in the Triassic Baldonnel and Charlie Lake.

INTERIOR BASINS OF BRITISH COLUMBIA

The Resource Development and Geoscience Branch (RDGB) continues with its efforts to determine the petroleum potential of the Nechako Basin. The Nechako Basin is one of several intermontane basins within British Columbia and occupies the central and southern part of the Interior (*Figure 36*).

The Nechako Basin Project is in its second full year of a multi-year research program designed to generate new geoscience data and interpretations to facilitate oil and gas exploration. The program includes geological field reconnaissance, Rock-Eval, thermal maturity, reservoir quality analyses, apatite fission track thermochronometry, biostratigraphy, and radiometric dating (Ferri et al., 2007).

The principal goal of the Nechako Basin Project is to determine whether the essential components of a petroleum system exist in this region. Previous research had been focused within the southern part of the basin,

where subsurface data is available through past exploration efforts. In 2006, the project expanded to the northwest area of geological reconnaissance to include the Fawnie and Nechako Ranges, southwest of Vanderhoof, and scattered exposures of Jura-Cretaceous strata around Batnuni Lake, south of Francois Lake, and on the north side of Ootsa Lake. Objectives during the 2006 reconnaissance of the Nechako and Fawnie Ranges were twofold: to examine Mesozoic strata and compare their stratigraphy to age-equivalent rocks in the Bowser Basin, the Nazko River valley, and the southern rim of the Nechako area (i.e., the Chilcotin Mountains) and to sample for analysis of source-rock and reservoir potential. Follow-up was conducted in some of the 2005 reconnaissance areas with detailed work, including:

- 1:50 000 scale geological mapping of the Nazko River valley
- collection of 114 new samples of coarse clastic rocks for a regional reservoir quality assessment
- collection of 115 new samples of shale units for Rock-Eval analysis to assess source-rock potential
- collection of 47 new samples for vitrinite reflectance analysis of thermal maturity

- collection of magnetic susceptibility data and new samples for apatite fission track thermochronometry and pollen biostratigraphy

Further details on the geoscience update of the Nechako Initiative can be viewed and downloaded from <http://www.em.gov.bc.ca/subwebs/oilandgas/petroleum/geology/cog/interior.htm>. The Petroleum Geology Open File 2007-1 is entitled The Nechako Initiative - Geoscience Update 2007.

In November of 2006, Geoscience BC and Arcis Corporation announced an initiative to encourage new activity in the intermontane basins of British Columbia. This included the signing of an agreement whereby Geoscience BC acquires the rights to seismic data from the Nechako Basin, which was acquired by Canadian Hunter Exploration in the early 1980s. Arcis would reprocess the data using modern techniques and assume responsibility for the marketing and management. The seismic data, which covers a significant part of the southern portion of the Nechako Basin, will assist in determining the petroleum potential of the Basin and will attract exploration industry investment into the area. Implementation of this agreement addresses several initiatives that began in 2003 as part of a BC Ministry of Energy, Mines and Petroleum Resources Service Plan.

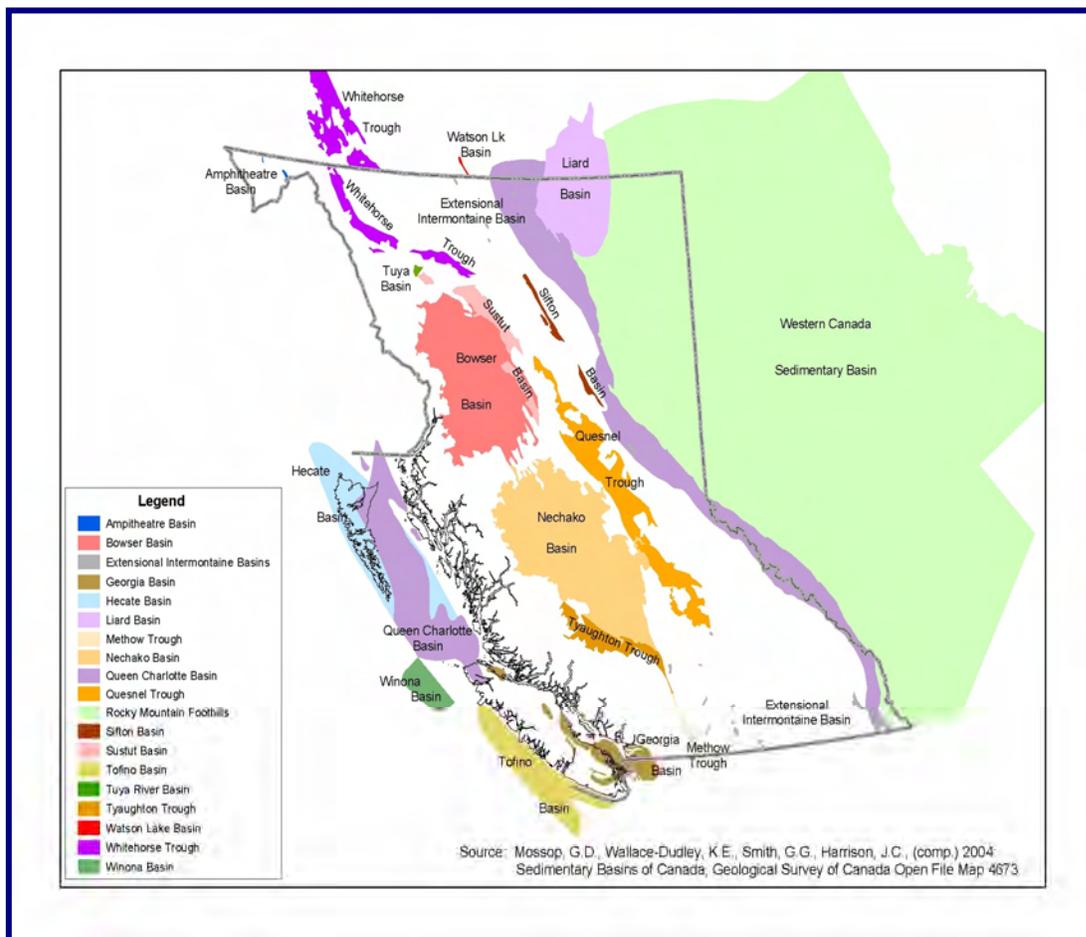


Figure 36. The resource basins of British Columbia.

COALBED GAS IN BRITISH COLUMBIA

The Government of British Columbia will continue to encourage coalbed gas development with the intent of demonstrating that British Columbia is a leading socially and environmentally responsible coalbed gas developing jurisdiction. New standards announced and outlined in the February 2007 BC Energy Plan state that companies will not be allowed to surface discharge produced water. Any re-injected produced water must be injected well below any domestic water aquifer.

British Columbia is still in the early stages of coalbed gas (CBG) exploration and evaluation, but the potential for CBG becoming a new source of gas supply is increasingly significant. The province has an estimated resource of 84 Tcf of coalbed gas. The resource is distributed throughout the province and is generally close to markets and infrastructure (*Figure 37*). There has been no commercial production to date; however, industry has been acquiring petroleum and natural gas rights over the past few years and has spent over \$100 million on various evaluation projects. Projects in the Peace River and Elk Valley Coalfields are the most advanced and will likely be the first to begin commercial production. There have been 87 wells drilled in the province to date that are identified as coalbed gas wells. Twelve wells were drilled in 2006.

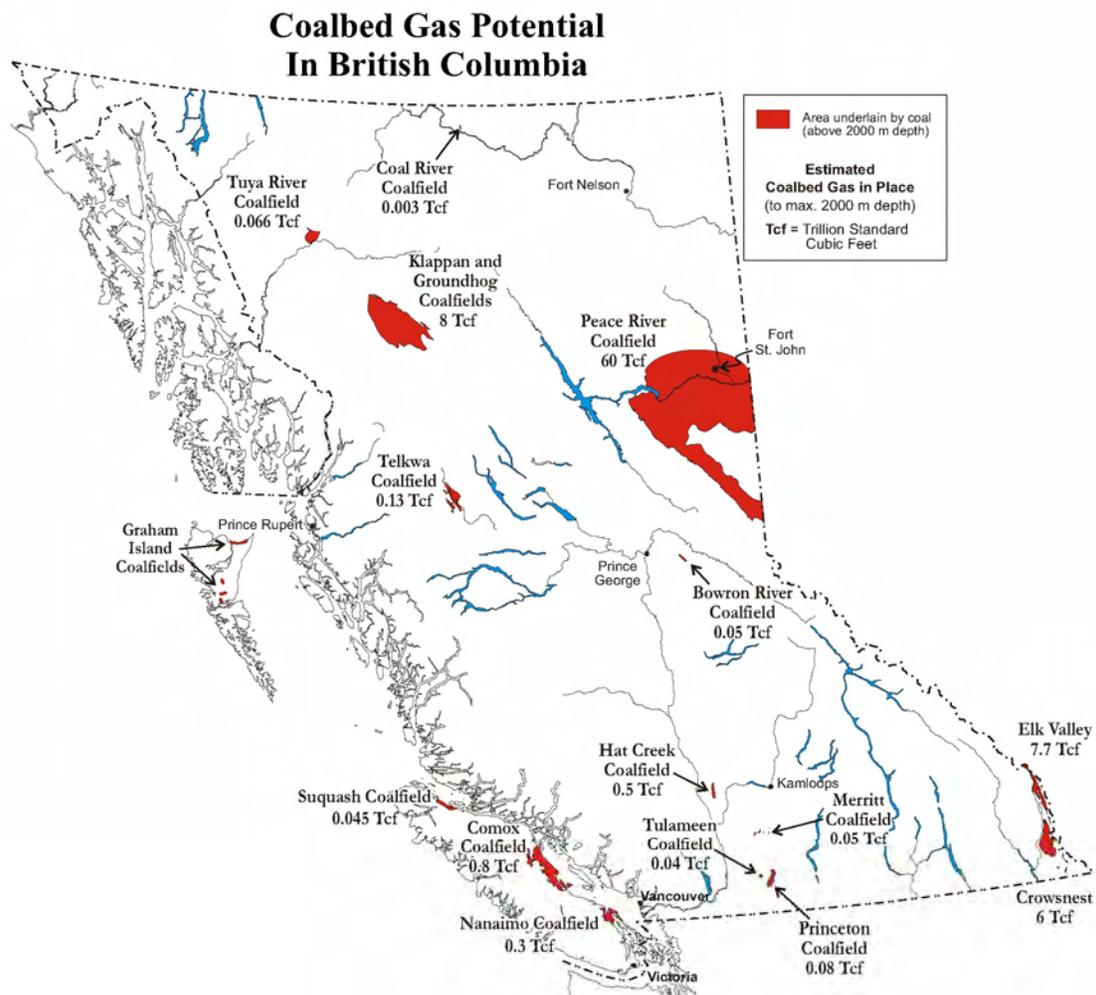


Figure 37. Areas of coalbed gas (CGB) potential in British Columbia.

CBG Tenure Activity in 2006

In British Columbia, coalbed gas (CBG) is developed and regulated in much the same way as natural gas. A company must obtain petroleum and natural gas (PNG) tenure rights in order to develop CBG. Various requests for crown rights and project proposals to develop coalbed gas resources were received in 2006.

In 2003, an agreement was reached with major freehold coal owners by which they may apply for Crown petroleum and natural gas tenure overtop of their coal rights. Upon receipt, the applications go through the normal pre-tenure referral process, after which the tenure proceeds for approval pursuant to section 72 of the Petroleum and Natural Gas Act. The rights do not go to public auction. The freehold coal owners have until December 2008 to make selections for PNG rights on their freehold.

The following are tenure requests related to the freehold coal owners:

- **Quinsam Coal** requested an additional 5,872 hectares in 2006. The company has applied for a total of 13,970 hectares on their freehold properties near Campbell River on Vancouver Island. Quinsam Coal has formed a liaison with **Cornerstone Gas Corp.** to evaluate the coalbed gas in the **Comox** coalfield.
- **Weldwood of Canada Ltd., now West Fraser Timber Co. Ltd.,** requested an additional 6,900 hectares in 2006 on its freehold properties near Tsable River in the **Comox** coalfield. West Fraser has an alliance with **VWVulcan Energy of Canada** to explore for coalbed gas.
- In the **Crowsnest** area, part of the East Kootenay coalfields of southeast BC, a tenure disposition to the **Elk Valley Coal Corporation (EVCC)** was confirmed in March 2005 for 10,359 hectares on its freehold properties. In 2006, EVCC applied for the rights for an additional 5,500 hectares on its freehold properties.
- Also in the **Crowsnest** field, **Tembec Inc.** did not make a 2006 selection on its freehold properties but has made selections in previous years.

CBG Drilling Activity in 2006

The BC Oil and Gas Commission (OGC) approved six applications for CBG test holes and eight well authorizations in 2006. Of the 14 approved, a total of twelve wells/test holes were drilled in the area of Hudson's Hope in northeast BC and in the East Kootenay region in the southeast corner of the province (Table 1).

**TABLE 1. COALBED GAS DRILLING ACTIVITY
1985 - 2007**

Year	AUTHORIZED TEST HOLES AND CBG WELLS			AUTHORIZED TEST HOLES AND CBG WELLS DRILLED
	Test Holes	CBG Wells	Total	
1985 to 2000	10	9	19	17
2000 - 2001	4	21	25	11
2001 - 2002	12	1	13	17
2002 - 2003	1	1	2	2
2003 - 2004	5	6	11	7
2004 - 2005	13	6	19	12
2005 - 2006	28	0	28	9
2006 - 2007	6	8	14	12
Total	79	52	131	87

The OGC approved one application from **Shell Canada Limited** for a CBG test hole in the **Klappan** area in northwestern British Columbia. None of the test holes approved in 2005 or 2006 were drilled.

The OGC approved three CBG test holes and two well authorizations from **Hudson's Hope Gas Ltd.** in the Hudson's Hope area of northeast BC. Drilling proceeded on all five applications. Also in the Hudson's Hope area, two CBG test hole applications were approved for **Canadian Spirit Resources Inc.** Both of these wells were drilled.

In the **Elk Valley** area of southeast BC, the OGC approved six well authorizations for **EnCana Corporation**, now registered under **Storm Cat Energy Corp.** Five of the six wells were drilled.

The OGC received a scheme application from **Canadian Spirit Resources Inc.**, which was approved in January 2007 for a three-year period. A scheme application was also submitted by **Koch Exploration Canada Corporation.** Both projects are located in northeast BC.

Industry Highlights

Northwest BC

Since 2003, **Canadian Spirit Resources Inc.** (CSRI) has been active in the **Farrell Creek** prospect north of Hudson's Hope. CSRI holds 16,188 gross hectares of petroleum and natural gas rights in the area; a quarter of these lands are shallow rights to the base of the Cadomin Formation (including the Gething) while the remaining are below the base of the Cadomin. The company has spent \$42 million on land and drilling in the area. In 2006, CSRI received authorization from the OGC to drill two test holes, both of which were drilled.

Canadian Spirit Resources Inc. received approval for its Farrell Creek Scheme Application from the OGC effective January 31, 2007 (three-year term). The scheme area consists of a six-section block, including the six test holes drilled to-date as part of the **Farrell Creek** area pilot project. The scheme will allow the company to facilitate the orderly development of its pilot program. Production testing of the four pilot wells in the project, which were completed and fracture

stimulated during the fall of 2006, produced natural gas from the Gething Formation “rock package” at rates fluctuating between 50 mcf per day to over 700 mcf per day. Various fracture stimulation and production engineering techniques were applied in 2006. One of these techniques, designed to create a consistent flow of formation water, was applied to a well in January 2007. The result was a more stable production rate of natural gas in the range of 150 to 250 mcf per day. CSRI plans to apply these same techniques to the other three test holes in the pilot project before making further drilling or tie-in commitments. Landowner approval has been received for the right-of-way of CSRI’s planned pipeline connecting the proposed field processing facilities at Farrell Creek with the **Spectra Energy** pipeline. CSRI has retained **Polaris Engineering Ltd.** to lead the design and construction field facilities as well as the pipeline and gathering system required to tie-in the Farrell Creek pilot project. Subject to the performance of the pilot project and the price of natural gas, the company’s goal is to have these facilities in place and natural gas flowing to market in the third quarter of 2007.

In 2004, **GeoMet Inc.** (a U.S. based coalbed gas producer) set up **Hudson’s Hope Gas Ltd.** (HHG) as its Canadian operating company in the Peace River Project to assume operation of the existing **Peace River Corporation** wells. The Peace River Project is comprised of approximately 18,000 gross hectares (9,039 net to GeoMet) along the Peace River near Hudson’s Hope. HHG is conducting operations on this project through an exploration and development agreement with a group of third parties. GeoMet has earned a 50 per cent working interest in this leasehold by spending \$7.2 million on an evaluation program. Three core holes were drilled targeting the Lower Cretaceous Gething Formation, where multiple, mostly thin coal seams exist at depths from 300 to 900 metres. At these depths, coals are medium-volatile bituminous in rank. HHG believes that the gas content and coal thickness under its acreage position are favourable for CBM development. In 2006, Hudson’s Hope Gas Ltd. had five well authorizations approved by the OGC. Four production test wells and a water disposal test well were drilled and are currently being tested. Prior to 2006, HHG drilled and completed two production test wells and recompleted a third production test well and a water disposal well. In 2007, HHG intends to spend approximately \$2 million to continue the evaluation and exploration of the Peace River acreage.

Southeast BC

In October 2006, **Storm Cat Energy Corporation** assumed ownership and operational responsibility for the Elk Valley project on 31,110 hectares, previously owned and managed by **EnCana Corporation**. In 2005, Storm Cat reactivated the EnCana Elk Valley pilot (2000 to 2004), in which 19 exploratory wells were drilled. Storm Cat is now registered as a company with the BC Oil & Gas Commission and has the ability to submit applications.

In May 2006, Storm Cat received OGC approval for a gas line to tie-in to an existing pipeline to supply the Fording plant. The gas line has been surveyed and right-of-ways have been secured. In June 2006, Storm Cat received six well approvals from the OGC. Five wells were drilled in the Elk Valley targeting the Mist Mountain Coals. The wells are currently on production and undergoing de-watering. Indicative results are expected to be available in the third quarter of 2007. Storm Cat also completed five wells that were drilled in the third quarter of 2006. Twenty-four fracs were successfully performed in multiple zones in each of the wells. The company used a variety of fracing technologies to determine which methods were best suited for the completion of these coals. On average, the wells intersected 73 metres of net coal with 86 metres being the best pay and 62 metres being the lowest. Storm Cat currently has one remaining 2006 license (drilling permit) in its Elk Valley inventory. Six locations originally selected for 2006 Phase 2 program have been moved to 2007.

Shell Canada Limited and **Elk Valley Coal Corporation** (EVCC) entered into an agreement in 2004 to determine the potential for CBG production from coal seams on EVCC freehold property. In 2004/2005, Shell Canada drilled four test wells but did not continue exploration activities in 2006.

In the fall of 2006, **BP Canada Energy Company** (BP) responded to the Ministry of Energy, Mines and Petroleum Resources 2003 Call for Proposals by submitting a proposal to develop the coalbed gas resource in the **Crowsnest** coalfield. In April 2007, the Ministry acknowledged BP as the sole proponent to evaluate Crown available coalbed gas resources in the Crowsnest coalfield subject to successful negotiations of the terms and conditions of a tenure agreement. BP’s project is in the very early appraisal stage. It will include three to five years of environmental studies, technical activities and ongoing public consultation. The appraisal stage will assess the viability of coalbed gas production by proving technologies and practices that will allow for the design of an environmentally sustainable commercial project. In addition to seeking Crown tenure, BP has also entered into a commercial agreement with **Elk Valley Coal Corporation** (EVCC) to evaluate CBG opportunities on EVCC-owned land. BP began a comprehensive public consultation program, including First Nation engagement, in June 2007.

Northwest BC

In August of 2004, **Shell Canada Limited** acquired approximately 412,000 hectares of petroleum and natural gas rights in the **Klappan** coalfield. Three test holes were drilled and 84 kilometres of seismic were conducted later that year. In 2005, Shell submitted applications for one air-borne geophysical survey and twelve test holes in the Klappan area. In the summer of 2005, Shell informed the BC Ministry of Energy, Mines and Petroleum Resources and the OGC that it would be deferring its proposed 2005 exploration program in the Klappan. Shell kept a field office open, continued funding a traditional use knowledge project with the

Tahltan, and did some reclamation activity and environmental work for the remainder of 2005. On March 21, 2006, the OGC issued approval to Shell's test hole applications and informed communities. Drilling was not conducted in 2006.

Shell has prepared an exploration field program for 2007 to collect data to determine the potential for commercial development. The proposed program consists of drilling seven to 15 exploratory wells with accompanying logistical activities as well as ongoing environmental programs. Shell is continuing a dialogue with the Tahltan Central Council.

In response to a 2003 Call for Proposals by the Ministry of Energy, Mines and Petroleum Resources (EMPR), **Norwest Corporation**, partnering with **Outrider Energy Ltd.**, submitted a proposal in 2004 to develop coalbed gas resources in the **Telkwa** coalfield near Smithers. In February 2006, EMPR and Outrider Energy initiated community and First Nation engagement. A pre-tenure referral was conducted from June to November 2006.

Central BC

Petrobank Energy and Resources Ltd. and its partners own the coal, petroleum and natural gas rights in the **Princeton Basin**, an area which covers 15,379 hectares (9,227 net) and contains very thick Tertiary-aged gas-bearing coals. In 2004, Petrobank drilled a coalbed gas well in the Princeton area. The exploratory well intersected thick coals, which were gas saturated. After completion and fracture treatment, the well flowed methane with minor amounts of fresh water. Petrobank has identified two additional locations for drilling activity in 2007 and is in the process of discussing exploration plans with the local community.

Vancouver Island

Quinsam Coal Corporation has an alliance with **CornerStone Gas** to explore for coalbed gas on its freehold properties near **Campbell River**. It has initiated a tenure request for a total of 13,970 hectares in the **Comox** coalfield.

West Fraser Timber Co. Ltd., formerly Weldwood of Canada, has formed an alliance with **VWVulcan Energy of Canada, Ltd.** to explore for coalbed gas on its freehold properties in the Comox coalfield. In 2006, West Fraser initiated a tenure request for an additional 6,900 hectares under the freehold coal agreement.

CONCLUSION

British Columbia is the second largest natural gas producer in Canada and the fourth largest crude oil producer. Annual marketable natural gas production is increasing (40 per cent over the last ten years) and strong demand for natural gas continues to entice producers to boost spending on new exploration projects and develop new supplies.

To further encourage exploration and development in British Columbia, the province has a number of incentive programs. For example, under the Infrastructure Royalty Credit Program, the Province recently awarded \$65 million in royalty credits to 15 companies for 19 road and pipeline projects. These new road and pipeline projects will support oil and gas exploration and production and improve access to new and underdeveloped areas of northeast British Columbia. In addition, the province initiated the Net Profit Royalty Program to encourage development of technically complex, high-risk projects. This targeted royalty program will focus on unconventional reservoir types such as coalbed gas, shale gas, tight gas, enhanced gas recovery, enhanced (tertiary) oil recovery, gas hydrates, and resources remote from existing infrastructure. The Net Profit Royalty Program will consist of a small gross royalty levied on production before payout of the capital investment, and thereafter a higher royalty rate applied to the net or gross revenue.

In February 2007, The Ministry of Energy, Mines and Petroleum Resources announced the BC Energy Plan: A Vision for Clean Energy Leadership. The Plan outlines specific steps required to develop realistic and achievable goals for conservation, energy efficiency and clean energy. Energy Plan policies include the establishment of the Innovative Clean Energy Fund and measures to capture and store carbon dioxide emissions. Oil and gas policies also include attracting oil and gas development investment through measures such as implementing the Net Profit Royalty Program, promoting a BC service sector, undertaking geoscience programs, harmonizing and streamlining regulations, and developing a Petroleum Registry.

The trend towards both conventional and unconventional resource play development, promising discoveries, and a fiscal-friendly, non-prescriptive energy regime will give British Columbia a competitive advantage as an oil and gas jurisdiction. New well permits achieved record totals over the last four years. The Petroleum Services Association of Canada (PSAC) is estimating that 795 wells* will be drilled in British Columbia by the end of 2007. Revenue from natural gas royalties is forecast to reach \$1.7 billion in fiscal 2007/2008 and 1.8 billion in fiscal 2008/2009.

ACKNOWLEDGEMENTS

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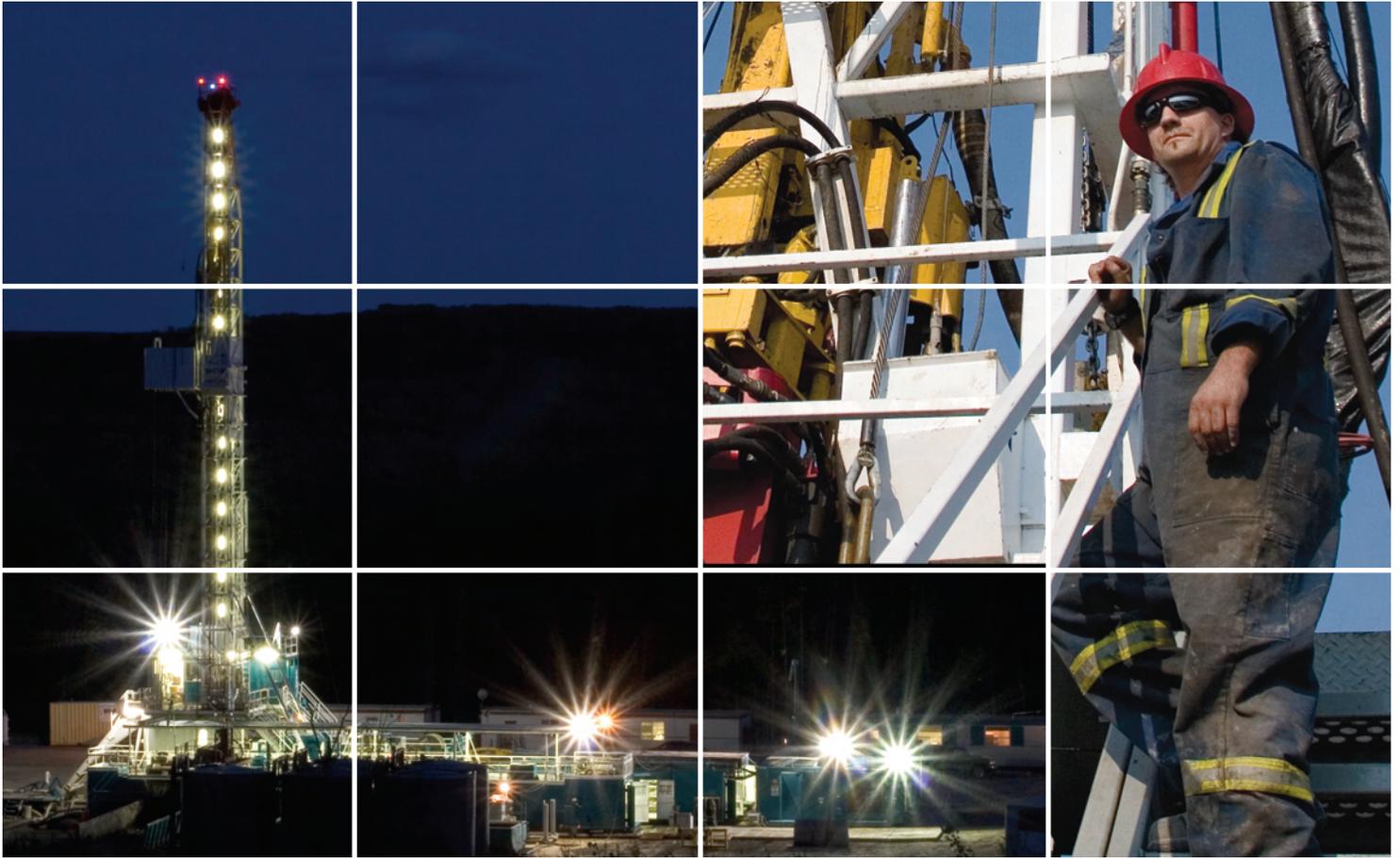
REFERENCES

Adams, C., Hayes, M., Ferri F., Morii, S. (2006): British Columbia oil & gas exploration activity report 2005; *BC Ministry of Energy, Mines and Petroleum Resources*,

Resource Development and Geoscience Branch Resource Development Division, Information Circular 2006-1.

- BC Ministry of Energy and Mines. (2003): Exploration assessment of tight gas plays, northeastern British Columbia; *Resource Development Division, New Ventures Branch, Petroleum Geology Open File 2003-3.*
- BC Oil and Gas Commission. (2007): Hydrocarbon and by-product reserves in British Columbia 2006; *Resource Conservation Branch, Report: ISSN 0703-6655 Crown Publications, Victoria, BC.*
- Ferri, F., Riddell J. (2006): The Nechacko basin project: new insights from the southern Nechacko basin; *BC Ministry of Energy, Mines and Petroleum Resources, Resource Development and Geoscience Branch, Summary of Activities 2006.*
- National Energy Board & BC Ministry of Energy, Mines and Petroleum Resources. (2006): Northeast British Columbia's ultimate potential for conventional natural gas; *Energy Market Assessment, Report 2006-A: ISBN 0-662-42630-4.*
- Walsh, W., Salad Hersi, O., Hayes, M. (2005): Liard Basin - Middle Devonian exploration; *BC Ministry of Energy, Mines and Petroleum Resources, Resource Development and Geoscience Branch, Summary of Activities 2005.*
- Walsh, W., Adams, C., Kerr, B., Korol, J. (2006): Regional "shale gas" potential of the Triassic Doig and Montney formations, Northeastern British Columbia; *BC Ministry of Energy, Mines and Petroleum Resources, Resource Development and Geoscience Branch, Petroleum Geology Open File 2006-02.*

* Canadian Drilling Activity Forecast update from the Petroleum Services Association of Canada on July 26, 2007



For more information:
Ministry of Energy, Mines and Petroleum Resources
Oil and Gas Division
Resource Development and Geoscience Branch