

# Yukon Oil and Gas Overview 2008

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## ABSTRACT

In 2008, some interest was shown during Yukon's two oil and gas rights disposition processes, however, no bids were received. Companies continue to show interest in oil and gas resources in North Yukon.

Northern Cross Yukon has received Yukon Environmental Socio-economic Assessment Board (YESAB) approval for construction, exploration and drilling activities in the Eagle Plains basin; they have submitted another YESAB application for additional activity.

Yukon's Oil and Gas Royalty Regulations came into effect in February 2008. The Regulations authorize the government of Yukon to collect royalty for oil and gas recovered pursuant to Yukon oil and gas dispositions.

Production of natural gas yielded more than 65 000 10<sup>3</sup>m<sup>3</sup> from two wells in southeast Yukon.

Other Oil and Gas Resources (OGR) activities in 2008 included the following: continued participation in the development of a Yukon Energy Strategy; on-going monitoring of the progress of the Mackenzie Gas Project; continued preparation for the proposed Alaska Highway Pipeline Project; on-going participation in several offshore oil and gas initiatives; continued consultation and cooperation with affected First Nations on a variety of oil and gas issues; making sure oil and gas interests are taken into account during the Land Use Planning process; and ongoing cooperation with the Yukon Geological Survey with field work and associated analytical work in order to discover potential source rocks and petroleum reservoir rocks.

## RÉSUMÉ

En 2008, certaines sociétés ont montré de l'intérêt durant les deux processus de vente de droits sur le pétrole et le gaz au Yukon. Aucune soumission n'a toutefois été reçue. Des sociétés continuent de montrer de l'intérêt pour les ressources pétrolières et gazières dans le Nord du Yukon.

La société Northern Cross Yukon Ltd. a obtenu l'approbation de l'Office d'évaluation environnementale et socioéconomique du Yukon pour des activités de construction, d'exploration et de forage dans le bassin d'Eagle Plains et a soumis une autre demande à cet office pour d'autres activités.

Le Règlement sur les redevances sur le pétrole et le gaz du Yukon est entré en vigueur en février 2008 et autorise le gouvernement du Yukon à percevoir des redevances sur le pétrole et le gaz extraits conformément aux dispositions sur le pétrole et le gaz du Yukon.

Deux puits dans le sud-est du Yukon ont produit plus de 65 000 x 10<sup>3</sup>m<sup>3</sup> de gaz naturel.

Parmi les autres activités axées sur les ressources pétrolières et gazières menées en 2008, il convient de souligner les suivantes: la participation continue à l'élaboration d'une stratégie en matière d'énergie pour le Yukon; la surveillance des progrès dans le cadre du projet gazier Mackenzie; la poursuite des travaux de préparation du projet proposé de gazoduc de la route de l'Alaska; la participation à plusieurs initiatives pétrolières et gazières en milieu extracôtier; la poursuite des consultations et de la collaboration avec les Premières nations concernées par toute une gamme de problèmes liés au pétrole et au gaz; la prise en considération des intérêts pétroliers et gaziers durant le processus de planification de l'utilisation des terres; la collaboration continue avec la Commission géologique du Yukon pour les travaux sur le terrain et les travaux d'analyse connexes menés à la recherche de potentielles roches mères et roches réservoirs de pétrole.

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## INTRODUCTION

In 2008, the Oil and Gas Resources (OGR) branch of the Department of Energy, Mines and Resources continued its role of promoting Yukon's oil and gas industry. While industry activity was limited over the past year, OGR focused on preparations for future exploration and development in Yukon, specifically pipeline and drilling activities.

Yukon has eight onshore sedimentary basins containing an estimated 17 trillion cubic feet (Tcf) (480 billion m<sup>3</sup>) of natural gas and 772 million barrels (120 million m<sup>3</sup>) of oil (Government of Yukon, 2008; Fig. 1). Offshore estimates in the Beaufort Sea north of Yukon consist of an additional 40 Tcf (1.5 trillion m<sup>3</sup>) of natural gas and 4.5 billion barrels (720 billion m<sup>3</sup>) of oil (Government of Yukon, 2008), contributing to Yukon's vast and virtually untapped petroleum resources.

There were no new dispositions of oil and gas rights in 2008, however opportunities in southeast Yukon and the proposed construction of the Mackenzie and/or Alaska Highway pipelines hold promise for the Yukon's oil and gas sector. The two producing natural gas wells in southeast Yukon continue to provide revenue for Yukon.

OGR continues to develop partnerships with other jurisdictions and governments, including First Nations. A unique and competitive oil and gas common regime is in place in preparation for potential expansion of exploration and production. This regime, jointly crafted by Yukon and First Nation governments, applies to all Yukon lands. Although Yukon resources are remote, and pipeline infrastructure is presently lacking, OGR has created an attractive economic environmental and legislative framework that bodes well for future activity.

## YUKON'S OIL AND GAS RIGHTS DISPOSITION PROCESS

Pursuant to the Government of Yukon's *Oil and Gas Act* and *Oil and Gas Disposition Regulations*, rights to oil and gas are granted by the Minister through a competitive disposition process. The Oil and Gas Resources branch runs two disposition processes annually, which are designed to be completed in approximately five months. Each process consists of the following:

- submission for consideration of Requests for Postings (RFP) for locations of interest to explore for oil and gas;

- review of the RFP, wherein the public, First Nations and government agencies may submit presentations on environmental, socio-economic and surface access concerns related to the requested locations;
- a Call for Bids, where persons or companies are invited to submit bids on posted locations; and
- issuance of oil and gas permits to successful bidders.

A successful bidder is required to submit a work deposit equal to 25% of their bid. The work deposit is returned proportionally as work is completed.

The initial term of the permit is six years. Permits may be renewed for a further four-year term if a well is drilled during the initial term. Before any activity takes place, companies are required to obtain all regulatory approvals and undergo environmental screening through the *Yukon Environmental and Socio-Economic Assessment Act*. Companies are also encouraged to follow best management practices as outlined by the Oil and Gas Resources branch.

In 2007, 14 new permits were issued in northern Yukon totalling \$22.2 million in work commitments. No bids were received on posted locations in 2008.

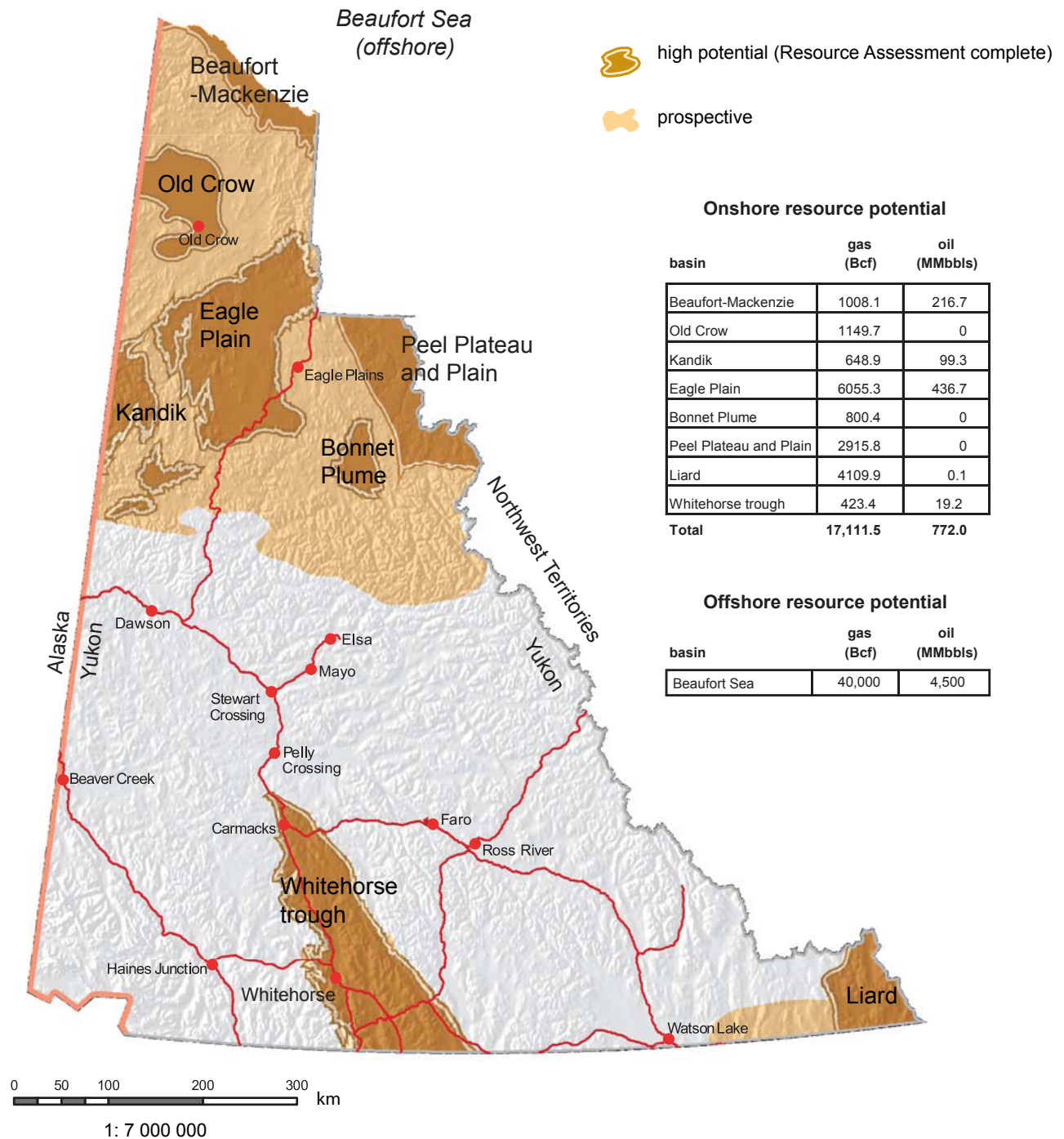
In summary, the Government of Yukon's oil and gas rights disposition process provides:

- an attractive investment climate for future development since it is efficient, streamlined and offers certainty;
- a two-year rolling schedule, allowing companies the opportunity to plan ahead; and
- a minimum work commitment which has been lowered from \$1 million to \$400 000.

## NATURAL GAS PRODUCTION

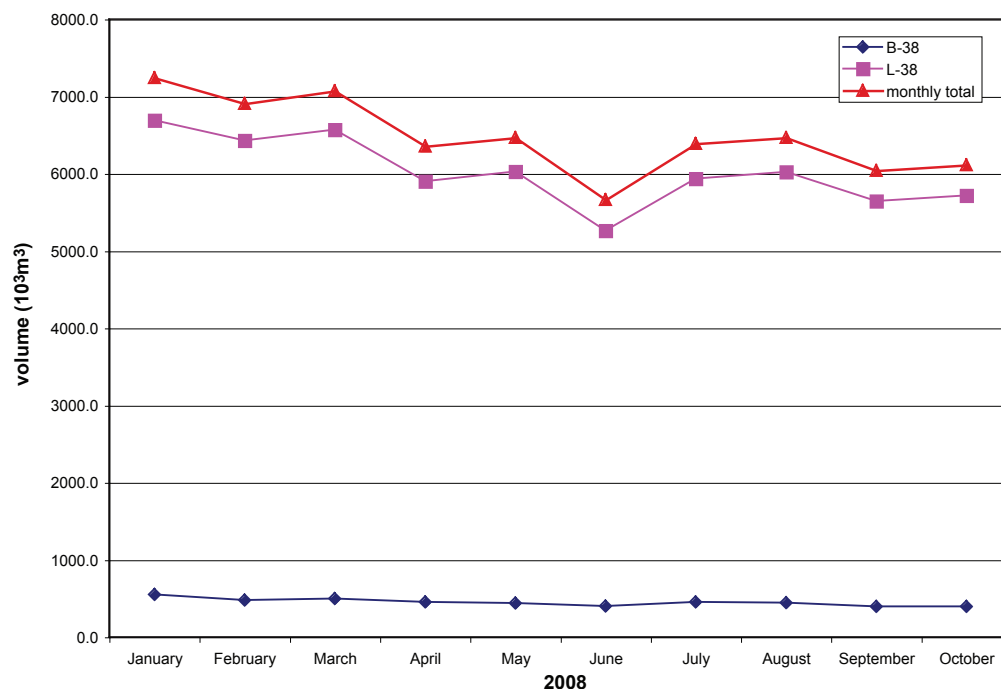
In southeast Yukon, natural gas is produced from the Kotaneelee Field in the Liard Basin. The two producing wells (B-38 and L-38) yielded 64 750 10<sup>3</sup>m<sup>3</sup> of natural gas in the period from January 2008 to October 2008 (Fig. 2)<sup>1</sup>. The field is in the later stages of life, and gas production and reservoir pressure are declining slowly, whereas water cuts are increasing. Recovery factor to date is 54% of initial gas-in-place, which is considerably better than similar nearby fields in the basin.

<sup>1</sup>[www.emr.gov.yk.ca/pdf/Non-Confidential\\_Production.pdf](http://www.emr.gov.yk.ca/pdf/Non-Confidential_Production.pdf)



**Figure 1.** Yukon's oil and gas exploration regions.

**Figure 2.** Yukon natural gas production, from Kotaneelee field, southeast Yukon.



## FIRST NATIONS

The Oil and Gas Resources branch continues to build strong working relationships with First Nations through the development of the common oil and gas regime and through regular consultation during the disposition and licensing processes. OGR supports the Aboriginal Pipeline Coalition (APC) and believes it has a very important role in ensuring that First Nations, the Yukon and federal governments are prepared for the Alaska Highway Pipeline Project. Canada, Yukon, and the APC are working cooperatively toward concluding a more stable long-term funding arrangement as First Nation engagement and participation is essential to the development and implementation of an efficient pipeline regulatory process.

## PIPELINES

Both the Mackenzie Gas Project (MGP) and the Alaska Highway Pipeline Project (AHPP) offer enormous economic opportunities for the north (Fig. 3). The Government of Yukon continues to work hard in order to ensure Yukon is pipeline-ready, benefits are maximized, and potential negative impacts are minimized. Work will also continue with our neighbouring jurisdictions – Alaska, British Columbia, Northwest Territories and Alberta – to prepare for both projects.

AHPP will generate an estimated 375 000 person-years of employment over 24 years<sup>2</sup>; MGP estimates are 181 000 person-years over the same 24-year span<sup>3</sup>. The construction of these two projects will also inject billions of dollars into the North American economy. These projects would provide access for Yukon natural gas to southern markets, which could earn the Government of Yukon more than \$40 million annually in royalty revenues from the production of natural gas resources.

## ALASKA HIGHWAY PIPELINE PROJECT

TransCanada Alaska recently received a license from the State of Alaska, allowing it to access up to \$500 million in state assistance to offset the estimated \$1 billion cost of applying for US regulatory approval to build and operate the AHPP. As a condition of the licence, TransCanada will hold an open season within the next 18 months. An 'open season' is a limited window created by a pipeline company to identify gas producers and shippers interested in seeking carrier capacity on the line, if built, and to provide a willingness to commit their product at an economically feasible carrier price.

British Petroleum and ConocoPhillips have created a joint venture pipeline company called 'Denali' which intends to

<sup>2</sup>[www.emr.gov.yk.ca/pdf/informetrica\\_econreport\\_02.pdf](http://www.emr.gov.yk.ca/pdf/informetrica_econreport_02.pdf)

<sup>3</sup> [www.iti.gov.nt.ca/pipeline/pdf/wright\\_mansell2004.pdf](http://www.iti.gov.nt.ca/pipeline/pdf/wright_mansell2004.pdf)



file a competing application with the US Federal Energy Regulatory Commission (FERC) and the Canadian National Energy Board. It will also hold an open season in 18-24 months and has pre-filed with FERC in anticipation that a complete application will advance expeditiously when submitted.

Should the chosen route follow the Alaska Highway, this will be important to the interests of the Government of Yukon and to Yukoners. Yukon has seven well-documented Alaska Highway Pipeline Project interests:

- ensuring a net fiscal benefit to Yukon;
- enhancing positive socio-cultural impacts while mitigating negative socio-cultural impacts;
- promoting environmental stewardship;
- recognizing community and First Nation interests;

- advancing a clear and efficient regulatory process;
- supporting economic pipeline access for Yukon natural gas; and
- requiring gas take-off points.

The Oil and Gas Resources Branch is also working closely with other jurisdictions that would be affected by an Alaska Highway pipeline. One initiative is the Strategic Action Plan Working Group, composed of participants from Yukon, British Columbia and Alberta. This group was created in order to manage common issues expected to arise from the various inter-jurisdictional concerns over the Alaska Highway Pipeline Project. Yukon continues to urge the Canadian government to demonstrate that they are prepared with a streamlined, efficient regulatory process.



**Figure 3.** Northern natural gas pipeline options.

## MACKENZIE GAS PROJECT

OGR's involvement with the Mackenzie Gas Project hearings is also important. Yukon's interest in the construction of this project is significant, as there are benefits for Yukon to be derived from this pipeline both during, and after construction. During construction, supplies will be transported to the Northwest Territories through Yukon. Construction will also provide employment opportunities for Yukon residents. The presence of a pipeline provides a means for Yukon gas to be transported competitively to southern markets, which means that Yukon gas would no longer be cut-off from this competitive market.

Oil and Gas Resources' intervention to this possible project included written submissions and presentations by OGR representatives at both the National Energy Board (NEB) and Joint Review Panel (JRP) hearings. Once the NEB concludes the MGP hearings process, it will submit a final report and recommendations to the federal minister responsible for northern pipelines. It is anticipated that a decision to proceed with the project, if approved, will occur in late 2009.

OGR's intervention in the JRP hearings has resulted in both the proponent (Imperial Oil) and Yukon committing to the enhancement of potential positive effects from construction and operation of the project, and to mitigate potential adverse effects from the proposed project on Yukon's environment, communities and transportation infrastructure.

## OFFSHORE

Although the federal government transferred responsibility for onshore oil and gas to the Government of Yukon, it continues to maintain responsibility for oil and gas management and development in the Beaufort Sea. BP Exploration's \$1.2 billion successful bid in 2008 for exploration rights in the Beaufort Sea, following Imperial Oil/ExxonMobil's 2007 bid of \$585 million for similar rights, plus extensive Beaufort seismic work by GX Technology, are clear indicators that industry remains interested in the offshore, and that governments will need to respond to this renewed interest.

Yukon remains committed to finalizing a shared offshore oil and gas management regime and revenue-sharing arrangement with Canada in accordance with the Canada Yukon Oil and Gas Accord. As an interim step, the Yukon

and federal governments have drafted a Memorandum of Agreement to identify Yukon's enhanced role in offshore oil and gas management. OGR continues to advance Yukon's offshore interests, including the following: governance, economic benefits, resource revenues, financial considerations, infrastructure, capacity development and sustainable development.

Yukon is actively participating with other governments and industry on a number of existing and proposed Beaufort Sea planning initiatives, including the Beaufort Sea Integrated Management Plan, and directly related to oil and gas, the Beaufort Basin Regional Environmental Assessment.

Taking an integrated management approach to all offshore planning is essential to ensuring an efficient and effective planning and decision-making process. OGR continues to work jointly with Indian and Northern Affairs Canada in undertaking a review of the call for nominations for the Beaufort Sea including the possibility of incorporating the area immediately off the Yukon coast in future disposition processes. Yukon is actively involved in the Frontier/Offshore Regulatory Renewal Initiative, which is a process to review and update the offshore oil and gas regulations. This is a federal/provincial/territorial government joint initiative, involving regulators such as the National Energy Board and the East Coast offshore petroleum boards.

Yukon is pleased that the Government of Canada is engaged in improving the northern regulatory system, which has been criticized for being too complicated and costly. This will have implications to Yukon's interests in the Beaufort Sea and northern pipeline development. The goal is to strike a balance between economic development and environmental protection, while making the regulatory system more predictable and efficient.

Finally, Yukon is pleased that Canada has made northern sovereignty and security a national priority. Given the significant oil and gas resources in the Beaufort Sea and international interest in the Northwest Passage, Canada's sovereignty in the region must be recognized.

## OIL AND GAS ROYALTY REGULATIONS

The Yukon's Oil and Gas Royalty Regulations were promulgated in February 2008. The regulations authorize the Government of Yukon to collect royalty for oil and gas recovered from Yukon oil and gas dispositions.

The Yukon royalty regime is based on an *ad valorem* (according to value) system with the objectives of transparency and simplicity of administration for both government and industry.

The Government of Yukon's royalty rate is between 10% and 25% of the gross produced value of oil, gas and field condensate. The actual royalty rate paid by producers will vary depending on the market price of oil and gas. As an added incentive for industry, a lower royalty rate of 2.5% is applied on the initial production.

## OIL AND GAS CONSENT AND ECONOMIC DEVELOPMENT AGREEMENT IN SOUTHEAST YUKON

There continues to be interest in oil and gas prospects in southeast Yukon. This region is of high interest to industry because there is existing pipeline infrastructure and good potential for an economic oil and gas discovery. If the area is further developed, it will also mean a significant economic boost to the residents in the area.

In areas where land claims remain unsettled, Yukon requires consent of the affected Yukon First Nations prior to disposition of oil and gas rights or authorization of oil and gas activities. Significant progress has been made in order to achieve an oil and gas consent agreement with Liard First Nation. The agreement contains provisions that facilitate economic development, as well as providing the certainty needed by industry. Once concluded, the agreement will be made public.

Current efforts are also focused on obtaining Ross River Dena Council consent. If consent is provided by these two First Nations (Liard, and Ross River Dene), the Government of Yukon will begin consultations regarding potential infringement of aboriginal rights with all six First Nations who assert claims within the southeast Yukon. Throughout the disposition and licensing process, the Government of Yukon will be consulting with affected First Nations about proposed oil and gas activities.

## YUKON GEOLOGICAL SURVEY

In 2008, Yukon Geological Survey geologists continued oil and gas related research studies on three projects. The focus of two of these projects is in northern Yukon. Field investigations were completed during the 2008 field season in the Whitehorse trough, southern Yukon.

Grant Lowey completed field investigations of the stratigraphy, sedimentology and hydrocarbon potential of the Laberge Group in Whitehorse trough and undertook a detailed study of the petroleum source rock potential of the Bonnet Plume Basin.

The Government of Yukon continued its partnership with the Geological Survey of Canada, the Northwest Territories Geosciences Office, and industry and university affiliates to form a working relationship under the title 'Regional Geosciences Studies and Petroleum Potential, Peel Plateau and Plain, Northwest Territories and Yukon'. This four-year project is in its final stages. A volume and accompanying digital atlas, summarizing the research conducted over the last four years, is due to be released in 2009. The project focused on gaining a better understanding of the petroleum potential of the Peel Plateau and Plain in north Yukon and adjacent Northwest Territories. As part of this partnership, Tammy Allen and Tiffani Fraser of the Yukon Geological Survey examined Upper Paleozoic and Cretaceous strata to better determine their potential as source rocks and reservoir rocks.

## OTHER ACTIVITIES

The Oil and Gas Resources branch continues to assist in the development of an over-arching Yukon Energy Strategy, designed to provide direction for the sustainable development, management and use of energy in Yukon. The scope of the strategy includes Government of Yukon roles and responsibilities in all aspects of energy development, management and use in the territory. OGR continues to contribute to the development of a Yukon Climate Change Action Plan.

OGR has completed an Energy to Mines Report, which examines the possibility of developing Yukon natural gas resources to generate electricity at selected mine and other end-use sites. The study considers using natural gas produced at the Eagle Plain field as a fuel source, and delivering it by pipeline to the point of use. The study concluded that natural gas is likely a better economic alternative than electricity delivered from the Yukon

Energy grid, or from on-site diesel-powered electric generation.

OGR also continues to ensure the Government of Yukon's oil and gas interests are taken into account during the regional land use planning processes.

## REFERENCES

Government of Yukon, 2008. Yukon Oil and Gas – A Northern Investment Opportunity. Oil and Gas Resources, Energy, Mines and Resources, June, 2008, 44 p.