

**Coalbed Methane/  
Natural Gas in Coal  
Public Information Sessions  
Summary**

**Prepared for  
The CBM/NGC Multi-Stakeholder Advisory Committee**

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## Introduction

This summary provides an overview of the Coalbed Methane (CBM)/Natural Gas in Coal (NGC) public information sessions and a summary of the feedback obtained from these meetings as well as responses to frequently asked questions. Prepared by consultant Sari Shernofsky for the CBM/NGC Multi-Stakeholder Advisory Committee (MAC), this summary does not represent government policy other than where it is stated.

The eight sessions held across the province were generally well attended with strong interest on the part of attendees. Their questions and concerns ranged from water handling, well site density, and surface disturbances to broad environmental issues.

The CBM/NGC working groups have received a copy of the summary to help them in their work, which includes preparing draft recommendations. This document is also posted on the Alberta Energy NGC web site for all Albertans to review. If you have any questions, please contact the Department of Energy Public Information Centre at 780-427-0265, toll free: 310-0000.

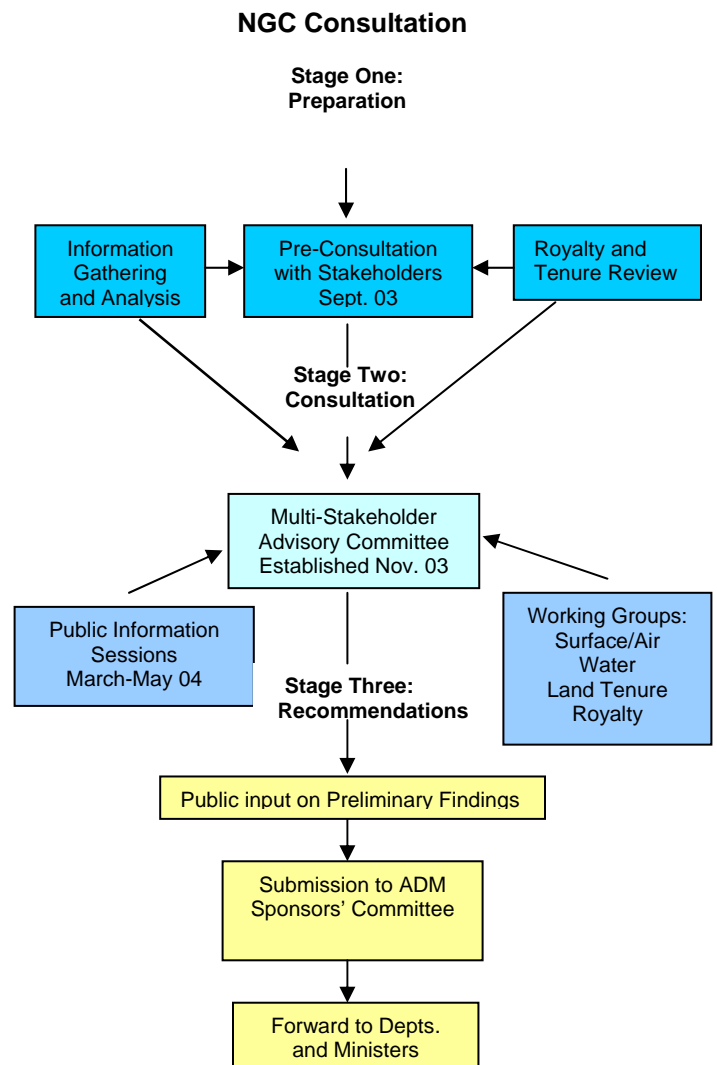
## Background

Recent increases in natural gas prices and the maturation of the Western Canadian Sedimentary Basin have resulted in new or undeveloped parts of the basin becoming of greater interest for development by producers. The development of new technologies is also increasing economic interest in NGC. NGC is currently in the early stages of development in the province. While NGC falls under the rules and regulations for all natural gas development, there is a commitment to review the existing regulatory framework to ensure responsible development.

Alberta Energy initiated a NGC review with several other government departments and the Alberta Energy and Utilities Board (EUB) in October 2002 to ensure the regulations governing its continued development balance economic benefits for Albertans with protecting land, air and water resources. The Alberta government is proceeding cautiously – learning from the experience of other jurisdictions, collecting data from recently drilled NGC wells in the province, and listening from Albertans.

## The Consultation Initiative

In 2003, Alberta Energy initiated a multi-stakeholder consultation to gather input and determine what changes or additions, if any, might be needed to current regulations. The three-stage NGC initiative involves partnerships with the EUB and other government departments, including: Alberta Environment; Agriculture, Food and Rural Development; Innovation and Science; and Sustainable Resource Development. *Stage One* involved pre-consultation preparation. *Stage Two* involved the formation of the Advisory Committee and working groups, public information sessions and the preparation of this Session Summary. *Stage Three* will involve the



MAC releasing preliminary findings for public input. The MAC will review this additional feedback and finalize recommendations for submission to government.

### **Stage One**

*Stage One* involved internal preparation, including the gathering and analysis of data and the creation of background material for the pre-consultation. An in-depth review of royalty and tenure issues was also initiated. A pre-consultation meeting was held in September 2003 with representatives from a number of stakeholder groups to identify and prioritize issues and to prepare input for the next steps. A key suggestion from the pre-consultation was the formation of the CBM/NGC Multi-Stakeholder Advisory Committee (MAC).

### **Stage Two**

The MAC was established in November 2003. Members of the MAC represent environmental organizations, landowners, agriculture, local government, the energy industry and provincial government departments. Its mandate includes:

- ◆ Advising on the design of the consultation process and specific milestones;
- ◆ Advising on the scope of issues to be addressed;
- ◆ Keeping the consultation focused on NGC development; and
- ◆ Coordinating, consolidating, evaluating and submitting recommendations to the Assistant Deputy Minister (ADM) Sponsors' Committee.

With the creation of the MAC, two working groups were identified and formed to study water and surface/air issues. Together with the existing groups working on royalty and tenure issues, these working groups report to the MAC. The MAC is guiding the consultation process, with a target of submitting recommendations to the government in 2005 (*Stage Three*).

*Stage Two* of the process also involved public participation and related activities. The MAC approved a series of public information sessions held in the spring of 2004, which were intended to:

- ◆ Provide information on NGC, local development, provincial regulations and the consultation process; and
- ◆ Create opportunities for members of the public and stakeholder groups to provide input on issues related to NGC development.

The input from these sessions, as well as other NGC community meetings attended by government representatives, was forwarded to the MAC and the working groups.

### **Stage Three**

*Stage Three* will involve the MAC releasing preliminary findings for public input. The MAC will finalize the recommendations for submission to the government in 2005.

## Public Information Sessions

### Purpose

In the spring of 2004, public information sessions provided Albertans interested in NGC development with an opportunity to learn more about the technical aspects of NGC, local development, regulations and the consultation initiative. Attendees were also invited to share their suggestions and provide input on issues related to NGC.

### Locations

The public information sessions were held in communities where NGC activity is already taking place or is expected to take place in the foreseeable future. A total of eight sessions were held in the following locations:

<b>Public Information Session Locations</b>		
Date (2004)	Location	# Of Attendees (approx.)
March 30	Rocky Mountain House	90
March 31	Wetaskiwin	135
April 1	Stettler	140
April 6	Barrhead	60
April 7	Strathmore	170
April 8	Drayton Valley	70
April 15	Pincher Creek	90
May 19	Grande Prairie	10
	TOTAL	765

### Format

Representatives from Alberta Energy, Alberta Environment, Alberta Sustainable Resource Development and the EUB, as well as from the MAC, were in attendance at the public information sessions. The meetings ran from 6:30 p.m. to 9:30 p.m.

The first part of the evening provided attendees with an opportunity to informally gather information about NGC. A number of information stations were set around the perimeter of the room, each station representing a government group, i.e., Alberta Energy, Alberta Environment, Sustainable Resource Development, and the EUB. The MAC also hosted its own information station. Each station had posters, maps and handouts available. Technical experts were on hand to discuss NGC and answer questions.

The formal part of the evening began at 7:00 p.m., with brief presentations by representatives of Alberta Energy, the EUB, Alberta Environment and the MAC. Following these presentations, the floor was opened for questions and comments. Attendees provided these verbally, although some took advantage of the opportunity to write questions and concerns on cards that were passed to government technical experts for response. Energy department staff made notes of questions and comments raised by attendees.

Attendees then had additional opportunity to visit the information stations and engage the technical experts in dialogue. Attendees were also encouraged to fill out an evaluation form.

Approximately 765 members of the public attended the sessions.

See Appendix A for copies of the overview of the public information session, presentations, handouts, maps and posters.

## Highlights of the Information Sessions

Generally, attendees were asking for more data, more studies, along with increased monitoring and enforcement of regulations. A number of attendees suggested more government staff might be required to carry out these tasks. Concerns related to a number of issues including water quality, reclamation and aquifers. In four locations, a number of attendees requested a moratorium on NGC development until more data are available.

In a few locations, some attendees commented on matters not related to CBM/NGC. Overall, attendees stressed the need to develop renewable energy sources. In addition to promoting the use of solar and wind power, accessing geothermal energy was also suggested.

**The following is a compilation of the questions asked by attendees over the course of the eight information sessions. These detailed answers reflect the responses provided at the sessions as well as additional input from the appropriate government ministries to ensure a more complete response.**

**For ease of understanding, comments from the sessions have been converted into a question format.**

## **Water**

There was interest and concern about the handling/disposal of both non-saline and saline (i.e. salt) water. Attendees were also concerned about the potential depletion of fresh water from the province's aquifers at a time when fresh water is already in short supply, especially in the southern part of the province. Landowners had concerns about the impact of NGC on their own water wells. They also were concerned about the testing and monitoring process that would ensure sufficient quality water continues to be available to them. Attendees expressed concern that there was not enough information on underground aquifers and their potential for depletion, co-mingling or contamination.

### **W1. Should the Government of Alberta impose a moratorium on NGC development with associated fresh water production?**

*A. The Government of Alberta does not support a moratorium on NGC development as the government is undertaking a consultation process to determine what changes, if any, to the existing regulatory framework may be required for the responsible development of NGC. Data collected from NGC wells provide valuable information about coal formations and their characteristics with regards to non-saline production during the NGC development. Furthermore, Alberta Environment has strict rules and regulations in place to guide the production, use and disposal of non-saline groundwater. The Minister of Environment has ordered that all NGC projects involving production of non-saline groundwater be considered for a short-term authorization, to a maximum of two years, under the Water Act. Decisions on the renewal of the application would include any changes in legislation or policy resulting from the consultation process*

### **W2. What is the difference between saline and non-saline groundwater in Alberta?**

*A. The Water (Ministerial) Regulation defines saline groundwater as having greater than 4,000 milligrams per litre of total dissolved solids (mg/l TDS). Water with less than or equal to 4,000 mg/l TDS is considered non-saline and can be used for a variety of purposes, depending on the specific quality. Only a portion of non-saline water is considered to be "potable water" and suitable for human consumption.*

### **W3. How much water is produced with a NGC development?**

*A. It depends on where the development is occurring. Preliminary production data indicates that the three main NGC targets in Alberta have different water production characteristics:*

- *Wells completed in the deep Mannville coals produce water that is saline.*
- *Wells completed in the Horseshoe Canyon are mostly dry. This is the area where industry has concentrated most of its activities.*
- *The few wells completed to date in the more shallow Ardley coals have tested a mix of water characteristics; some produce no water, others produce slightly saline water and some produce non-saline water.*

*Any well producing non-saline water must have a water diversion approval from Alberta Environment.*

### **W4. What happens to non-saline water that is pumped out of a NGC well? Where does it go? Who owns it and who has the rights to the water – farmers or industry?**

*A. While most NGC activity is currently focused on coal zones without water production or with saline water production, some NGC developments have had non-saline water production of varying quantities and qualities.*

*The EUB regulates the disposal of all produced saline (salt) water associated with oil and gas activity, while Alberta Environment provides additional, specific regulation on the production, disposal and use of non-saline water. Each government organization strictly enforces procedures related to water use.*

*All groundwater pumped out of a NGC well, or from any oil or gas well, belongs to the people of Alberta and is managed by the Crown (the government).*

*The specific management of non-saline water is indicated in the water diversion permit approved by Alberta Environment.*

Licences or approvals are issued under the Water Act granting the right to divert a specified amount of water. The licensee or approval holder can be either an individual (e.g., a farmer, a landowner), or a corporation (e.g., a company, irrigation districts, an association).

**W5. Are there any NGC developments in Alberta that use non-saline water as part of the drilling process? Should saline water be used instead? When and where can the public obtain information about these wells?**

A. Some fresh water is used in NGC development, as with all oil & gas development, to drill surface holes. As the surface hole is drilled, the water is used to form a "mud-cake" on the walls of the wellbore, which limits fluid loss to porous and permeable zones such as aquifers. In effect, the mud blocks the holes between the sand grains in the rock, prohibiting additional fluid loss. The mud also cools the drill bit, brings the drill cuttings to the surface and contains the drilling fluids. As a rule, large volumes of water do not enter the aquifers. The radius of infiltration can be determined from devices called well logs, and is generally found to be less than a metre wide.

Saline water is generally not used to drill surface holes, as it would limit drilling mud disposal options. It may be necessary to add non-toxic bentonite clay (also called gel) to the fluid to increase viscosity to prevent fluid loss to the formations. Saline water affects the bentonite, such that viscosity cannot be easily controlled. Information on fluids and additives used is included on the drilling (tour) reports available from the EUB Core Research facility.

All publicly available information on NGC wells, or any energy/well project, resides with the EUB, which can be contacted at 403-297-8311.

**W6. What steps are taken if surface water becomes contaminated as a result of NGC development? How are landowners and their water wells protected in the event of damage or loss of use? Who has to prove damage – the landowner or industry?**

A. Although unlikely to occur, in the event that contamination did occur, the company would be required to take immediate action to clean up the contamination in accordance with current regulations and guidelines under the Water Act and the Environmental Protection and Enhancement Act.

Approvals authorized under the Water Act generally have conditions that require the licensee or approval holder to investigate and report back to Alberta Environment and EUB, if there is a complaint about their project. If their activities are found to be the cause of the problem, the licensee or the approval holder will have to undertake remediation.

For further information contact:

Alberta Environment: 780-427-6267 (toll-free by first dialing 310-0000)

Website: [www.gov.ab.ca/env](http://www.gov.ab.ca/env)

Water for Life strategy website: [www.waterforlife.gov.ab.ca](http://www.waterforlife.gov.ab.ca)

**W7. Non-saline water withdrawal in an oil and gas development must be authorized under the Water Act. The new water withdrawal must not “unreasonably” interfere with an existing source of water - what does “unreasonably” mean?**

A. The determination of “unreasonable interference” varies from case to case. Usually if the interference causes significant changes to an existing water well, a stream or a dugout, or causes hardship to the well owner, then it is considered unreasonable (e.g., if the withdrawal causes a reduction in water supply to a degree that there is insufficient water to meet the farmer’s normal water need).

**W8. The use of fresh water is restricted under current legislation, but some uses are allowed. What uses are allowed?**

A. Under the Water Act, authorization is required before non-saline water can be withdrawn, used or disposed. Exemptions include: household use, camp water supply and saline groundwater withdrawal among others. Please refer to Schedules 2 and 3 of the Water Act for a complete list of activities and uses that do not require an approval or license, respectively.

**W9. Will potential long-term dewatering and contamination from NGC developments impact water wells?**

*A. Unless the NGC and domestic water wells are in the same zone and close together or are hydraulically connected, little or no impact is expected. A water diversion authorization from Alberta Environment can require observation wells to monitor groundwater conditions for early detection of problems before they impact other wells. Monitoring is the key to early detection of any potential impact. Companies must respond to all complaints of water well interference. They must investigate and report the results of their investigation to the stakeholder and to government agencies.*

**W10. Will long-term dewatering and lower water pressure as a result of NGC developments cause migration between aquifers, potentially resulting in contamination of groundwater? How does migration, contamination or commingling occur? How is potential contamination prevented? How long would a contamination last?**

*A. The rules and regulations under Alberta Environment's Water Act and the Environmental Protection and Enhancement Act are in place to prevent water contamination. Companies that do not follow these rules and regulations will be subject to penalties by regulators.*

*The length of time contamination lasts depends on the nature of the contamination and the aquifer/water body. Companies are required to clean up or manage off-site or post-activity contamination according to provincial laws and rules.*

*For information about geology and hydrology in your area, contact your regional Alberta Environment office.*

**W11. Is a company allowed to pump water out of an aquifer and then pump untreated water back into it?**

*A. No, this is not allowed. Disposal of produced water is regulated and currently limited to deepwell disposal or enhanced recovery. Both Alberta Environment and the EUB want to ensure Alberta's water resources are protected and water production is used wisely. Further review is expected on alternative disposal options, but the quality of the produced water and the adequacy of treatment programs would be an important part of any review to change current practices.*

**W12. How much information is available on the amount and quality of aquifers in Alberta? What are the water characteristics of the various coal zones?**

*A. The provincial water strategy, Water for Life, has identified the need for more complete information about aquifers in Alberta. Obtaining this information is a key aspect of this strategy.*

*Aquifers are not uniform everywhere, thus the amount and quality of groundwater present at any particular place is dependent on the unique aquifer characteristics and the occurrence of permeable deposits. Water quality is related to its source rock and the rock type it passes through. Field investigations are required to confirm published information.*

*In the plains area, the main bedrock aquifers are generally in sandstones, which contain groundwater of varying quality and quantity. Drilling to access the Horseshoe Canyon Formation in this area shows that this formation predominately contains little or no water.*

*Maximizing, cataloguing and cross-referencing the information obtained about aquifers as a result of oil and gas exploration and development activity is one way that information about groundwater and aquifers will be enhanced.*

*Additional information on groundwater and aquifers in Alberta can be found at:  
[www3.gov.ab.ca/env/water/GWSW/quantity/index.cfm](http://www3.gov.ab.ca/env/water/GWSW/quantity/index.cfm).*

**W13. Should there be a study of the impact on aquifers where there is the potential for large amounts of water, either saline or non-saline, to be produced?**

A. This question has been passed on to the Water working group for consideration.

**W14. Are any toxic fluids used in NGC drilling?**

A. Only non-toxic fluids are used in NGC development.

**W15. What guarantee is there with deep-well injection that the water won't reappear somewhere else?**

A. The EUB regulatory technical requirements, ongoing monitoring and application process described in Guides 65 and 51 ensure well bore integrity and formation containment. This energy practice is safe and environmentally responsible.

**W16. Can you explain the geology around coal seams and nearby aquifers? On the top coal seam is there a cap rock separating the coal seam from the fresh water aquifer?**

A. Generally, there are low permeability aquitards (i.e. shale with low permeability as they transmit water very slowly) between the coal seams and aquifers, but very shallow coal seams may act as fresh water aquifers.

Pumping water from an aquifer, bounded by thick, low permeability aquitards is very unlikely to impact overlying aquifers. Aquifers transmit water much more readily than aquitards. The major component of flow through an aquifer is horizontal, confined by over and underlying aquitards.

**W17. Should testing water wells be the responsibility of the energy industry? Should there be mandatory testing on any water well within a one-mile radius of a NGC development?**

A. Applicants for an EUB well licence are required to notify potentially affected landowners, fully disclose their plans, identify potential impacts and discuss development options as well as ways to minimize impacts, such as offset domestic water wells. Applicants are encouraged to conduct a water well test to establish baseline data before drilling starts. This protects both the landowner and the company. The parties should discuss how the test will be conducted, who will run the test and how the results are to be communicated. Landowners may refuse access to their wells, but the EUB and Alberta Environment strongly encourage all parties to cooperate.

**W18. Has the government ever given landowners a chemical analysis of the water they use? Could this be done yearly?**

A. If the result of a chemical analysis done on a water-well exists in the Alberta Environment database, it is made available to the well owner upon request. This information can also be accessed at the Alberta Environment website at [www3.gov.ab.ca/env/water/groundwater/index.html](http://www3.gov.ab.ca/env/water/groundwater/index.html).

**W19. Why does the Water Act use the optional term "may" instead of the mandatory term "shall" and does such language make provisions less enforceable?**

A. The word "shall" implies a mandatory requirement. It does not take into consideration unique environmental settings and may end up being counterproductive. The intent of "may" is to allow the company and Alberta Environment to take each unique environmental setting into consideration for appropriate action and decision.

**W20. Industry is required to submit a technical water report along with an application under the Water Act. What is the process to review and evaluate these reports?**

A. Alberta Environment staff review the report in accordance with criteria contained in the Alberta Environment Guidelines for Groundwater Diversion for Coalbed Methane/Natural Gas in Coal Development April 2004, and other criteria such as the development impacts on the aquifers, existing water users and the environment. Any applicable requirements under the Water Act and its regulation will also be taken into consideration.

**W21. Can NGC be evaluated within the cumulative impact of energy development on water?**

A. Non-saline groundwater withdrawal in an NGC project is reviewed based on site-specific conditions and long-term potential impacts. The Alberta Water for Life Strategy also calls for research to establish the amount of groundwater in Alberta.

**W22. Who monitors the water to ensure the water table is not reduced or that there is no migration or contamination between aquifers?**

*A. Licence and approval holders under the Water Act or the Environmental Protection and Enhancement Act are required to report the results of their monitoring programs to Alberta Environment. Where necessary, the companies can be required, as a condition of their water diversion authorizations, to monitor conditions and assess the impact of their water diversion activities during the course of their operations.*

**W23. I have water wells on my property and the company has kept me informed as to their development, but what about keeping my neighbors informed as well?**

*A. Usually the company would contact and inform all residents living in the neighborhood of the company's project site or its development. Alberta Environment requires the developer of a NGC project involving non-saline groundwater to do a field-verified survey of water wells, springs and dugouts within at least 1.6 kilometers of each of the proposed gas wells to provide information on baseline conditions. During this survey, all landowners within this radius have the opportunity to ask the company questions.*

*As part of the dialogue with landowners, the parties may identify or suggest other parties who may be interested. The EUB expects companies to understand community needs and follow up on these suggestions. While the EUB and Alberta Environment specify minimum requirements, they both expect that consultations fit the needs of each case.*

**W24. Can the company do more to inform me and other local residents about NGC development and the impact on our aquifer?**

*A. In addition to consultation at the time of an application, ongoing consultation over the life of an energy project is encouraged. If all the information is not available at the exploration phase, the public can communicate to the company its expectations and schedule a follow up consultation when more data becomes available.*

**W25. Under the Water Act, when would a water diversion permit be denied?**

*A. Under the Water Act, an application can be denied if the technical data indicates the diversion of water may adversely impact the water resources, existing water users, or the environment in general.*

**W26. What legislation exists to protect the aquifers?**

*A. Aquifers are protected under the Water Act and the Environmental Protection and Enhancement Act. The Oil and Gas Conservation Act also protects groundwater. The EUB has regulatory controls and requirements to ensure gas activities such as drilling completion, production and pipelines do not contaminate aquifers.*

**W27. What role does the federal government play in protecting groundwater, such as with NGC development?**

*A. Water resources, particularly groundwater, are owned by and are under the jurisdiction of the provincial governments. The federal government has jurisdiction over navigable waters – including any body of water capable of being navigated by any type of floating vessel for the purpose of transportation, recreation, or commerce. What this means is that the federal government's role is in relation to standards such as ship construction, safety, and water transportation.*

**W28. How do you dispose of saline water pumped out of a NGC well?**

*A. The EUB regulates produced water disposal to ensure the environment and farmland are protected. Saline water must be deep well injected, and the well must meet technical standards and testing requirements to ensure well bore integrity, sound disposal operations, and the water stays where it has been disposed.*

## **Land/Surface Impacts**

Some attendees had technical questions about NGC drilling processes. Attendees asked for clarification on spacing between the wells, the number of wells that would be allowed per section, and the potential

impact of a large number of wells. Several landowners believed an increased number of wells per section would mean increased infrastructure such as roads and pipelines and increased traffic and noise. Some landowners felt that increased inconvenience to them should be reflected in the compensation landowners receive from industry. Attendees expressed concern about ensuring minimal surface impact from NGC development.

**LS1. How much land does a NGC play need compared to conventional natural gas plays? How many wells are allowed per section? What is the potential environmental footprint that would be left from NGC development?**

*A. The EUB regulates the number of wells needed to effectively drain the hydrocarbons. Reflecting rock and fluid properties, the number of wells necessary can vary considerably throughout the province.*

*Natural gas well density for parts of Alberta starts at one well per pool per section but many areas, such as southeast Alberta have four or more wells per section, with provisions for greater density. A significant portion of the province, notably areas with shallower natural gas development, has a common density of two to four wells per pool per section. By comparison, most oil development requires four to eight wells per pool per section, with heavy oil or bitumen needing 16 or 32 or more wells per pool per section. NGC operators have generally expressed interest in two to eight NGC wells per section in order to optimize gas recovery from the coals.*

*Application to reduce spacing and increase well density can be made in accordance with the Oil and Gas Conservation Regulations. Such applications focus on energy conservation (avoiding resource waste) needs and impacts on offset mineral owners. They also support early disclosure to landowners.*

*It is important to understand that any reference to the number of wells in the EUB spacing orders reflects the number of subsurface drainage points required to effectively recover the resource and not the number of surface locations that may ultimately be approved. Applying good land use management practices and consulting with the landowner can assist the energy company to significantly reduce surface impacts. Where appropriate, use of pad drilling, directional drilling from lower value/lower impact sites, common roads and pipeline corridors can all reduce the surface impact.*

**LS2. How long are NGC wells expected to produce? Is there any preliminary information on NGC production rates or decline curves?**

*A. There has not yet been enough production from NGC wells from either the dry gas coal intervals or the water bearing coal intervals in Alberta to determine a model production profile. Production information for the currently producing NGC wells (that are not deemed experimental by the EUB) in Alberta is available from the EUB.*

**LS3. Does NGC have experimental status? What does experimental status mean? Is NGC development considered “exploration” and if so, who is paying for it?**

*A. The EUB has a legislative provision to grant experimental status to any energy development for specific reasons pertaining mostly to confidentiality regarding new processes and technology. Experimental status may be granted to a company conducting an activity that is new and that may result in important advances in energy conservation. In all such cases a public application is required, public consultation must take place and the operation is subject to all legislated safety and environmental requirements.*

*There is no financial benefit to a company who receives experimental classification on their wells. The advantage is the deferral of competitive access to production information during the experimental period.*

*As of September 2004, about two per cent of NGC wells had experimental status. It is important to note that monthly production is still measured and reported to the EUB. Experimental wells producing non-saline water are identified for Alberta Environment and a diversion application is required. Non-saline water production must be made public under the Water Act and the EUB experimental approval supports*

this. It is the EUB's practice to ensure landowners have access to information necessary for them to understand potential impacts on their property.

**LS4. Are there drilling techniques (i.e., pad, directional, horizontal and lateral drilling) that would reduce surface impacts? Are there regulations to encourage these techniques?**

A. The EUB requires applicants for a well licence to consult with the landowner and/or the land steward, to understand local issues and discuss options to mitigate impacts. There are a number of very common industry practices that can reduce or limit impacts. In addition to previous examples, the EUB expects industry to practice coordination and cooperation with other energy companies and industries to maximize opportunities to reduce impacts. The NGC/CBM consultation will be reviewing this topic to see if additional actions are appropriate.

**LS5. Can drilling spacing targets be offset next to fence lines to provide more land for farmers?**

A. There is usually considerable flexibility to locate the surface location of a well while continuing to ensure it can achieve the subsurface energy conservation and equity protection objectives. Selection of well site, road and pipeline routes should be part of the company/landowner consultation that precedes an application under EUB Guide 56. In many cases, the company can directionally drill one or more wells from a common well site permitting the surface site to be located offset to the subsurface geological target and along fence lines or on lands having lower value land use.

The EUB spacing regulations set subsurface target areas to manage lease line drainage (equity between mineral owners) and to optimize recovery. A company must drill and encounter the subsurface producing formation within the target area or the well may be subject to penalties. In cases where directional drilling is not practical, a vertical well is needed. Applications to move the subsurface target area is common and should be considered wherever vertical well sites cause higher surface impacts

**LS6. Are there technical challenges with shallower NGC wells? Is there a limit as to how shallow a well can be and still be considered strong enough to fracture? Is there a higher risk of creating a fracture between the coalbed and the adjacent aquifer with NGC? Should companies be required to pull core samples and perform rock strength tests before fracing?**

A. Fracturing, or fracing, (opening up or stimulating small holes, called perforations, to make gas flow more freely) a well to increase or initiate commercial production is a common industry practice and is engineered to ensure propagation of fractures is understood and controlled. The need for additional or different requirements for very shallow operations is currently being reviewed.

**LS7. Is surface casing and production casing required for NGC wells? How is casing regulated? Would inadequate casing cause gas migration between aquifers?**

A. The EUB requires water aquifers to be protected by cemented steel casing in all wells. This may be surface casing or production casing. The surface casing requirements are set for drilling control purposes to ensure casing is adequate. (See Potential NGC/CBM Development Poster on page 141 of Appendix A.)

**LS8. Because drilling in the foothills may be difficult, does that mean there will be no drilling there?**

A. Geological mapping by the Alberta Geological Survey (AGS) shows potential NGC resources in Alberta's foothill regions. Most of industry's NGC activities have, to date, been concentrated in the plains regions because the geology is less complex and the plays more economical. If NGC development extends into foothill regions drilling plans must address local requirements.

**LS9. What is done with the coal after the NGC gas is removed? Can the coal still be mined?**

A. Yes, The coal remains in place in an otherwise unaltered state so interested parties can still mine it.

**LS10. Would the use of super-heated steam to extract coal gas fall under the current regulations? If not, should this issue be addressed during the consultation?**

A. Yes, all forms of gas extraction fall under current regulations. The Alberta government is reviewing the regulations that govern natural gas in coal development to ensure they continue to balance economic benefits for Albertans with protecting the land, air and water resources.

**LS11. How are the concerns of recreational land users being addressed?**

A. The EUB requires companies to consult with Sustainable Resource Development (SRD), which is the land manager/steward for public lands and will address potential effects on Alberta's recreational land, land use policy, and environmental and sustainability aspects. Decisions on energy development reflect a balance between the opportunity for the mineral rights owner to explore and produce Alberta's hydrocarbons and the public's right for a safe and clean environment.

Concerns of recreational users will be addressed through the access management program led by SRD.

**LS12. Is it safe to use existing pipelines for NGC development? How do you determine if there is a leak and who would deal with it?**

A. Yes, it is safe to use existing pipelines. All pipelines in Alberta are subject to EUB regulations, which include technical design, material control, monitoring operations and programs for corrosion prevention to prevent leakage. If appropriate, co-use or re-use of an existing pipeline can provide an important land use management benefit.

**LS13. Should counties hire staff to monitor surface issues and have funding provided by industry?**

A. No, the regulation of non-renewable resource development is a provincial responsibility that has not been delegated to municipal governments. The EUB is the lead regulator for energy development in Alberta. EUB rules require applicants to contact local authorities for input. The EUB and the Alberta Association of Municipal Districts and Counties (AAMDC) are also expanding their input into discussions and policy reviews.

**LS14. Will the restrictions that currently apply to coal also apply to NGC? Should the same restrictions apply?**

A. Coal legislation, regulations and policies do not apply to Natural Gas in Coal. The amendment to Section 67 of the Mines and Minerals Act by the Energy Statutes Amendment Act, 2003 confirms that the right to the natural gas in Crown coal, including NGC, does not belong to the lessee of the Crown coal rights. When read in conjunction with section 4(2)(b) of the Petroleum and Natural Gas Tenure Regulation, by implication or inference that amendment grants the right to natural gas in coal to the petroleum and natural gas lessee.

**LS15. Why are we seeing an increase in NGC development?**

A. Recent increases in natural gas prices and the maturation of the Western Canadian Sedimentary Basin have resulted in a desire to access new or undeveloped parts of the basin development by producers. The development of new technologies is also increasing interest in NGC. This energy source has the potential to make a significant contribution to Alberta's future natural gas supply for consumers and to sustain provincial revenues to support priority programs important to Albertans.

**LS16. What would be the impact of NGC development on livestock?**

A. The biggest impacts on livestock will be the land base required to conduct NGC drilling and production and the day-to-day operations. Often NGC wellheads will be fenced for cattle control permitting most of the surface lease to return to farming or grazing purposes.

**LS17. What are the rules in place for the handling of drilling mud?**

A. EUB Guide 50 provides the management techniques and criteria for disposal, including surface spreading of drilling mud. In specific circumstances and with restrictions on composition and concentration, drilling mud may be spread directly on farmland with landowner permission. This practice is common in Alberta.

## **Mineral Ownership and Royalties**

A number of attendees wanted clarification on mineral rights and ownership issues. Some suggested changes to the existing royalty structure to better reflect their concerns.

**MOR1. If a company purchases a mineral lease, what specific minerals are they leasing? What are they leasing if a lease says “all mineral rights but coal”? Are gas rights the same for NGC as for natural gas in sand?**

A. For Crown owned mineral rights, NGC is considered to be natural gas and NGC is administered in the same manner as conventional gas.

Since the Provincial Crown treats NGC the same as natural gas, the rights to explore and develop NGC are granted under conventional petroleum and natural gas leases. Owners of Crown coal rights can only recover natural gas for safety and conservation reasons.

**MOR2. Who owns the mineral rights to NGC? Where there is a split title, who owns the NGC and what department makes this decision?**

A. Provincial legislation (the Mines and Minerals Act and associated Regulations) is conclusive in determining the ownership of NGC where the Crown owns both coal and natural gas. However, where coal rights are freehold owned and natural gas rights are Crown-owned, or vice versa, the matter is to be determined and ruled on by the courts. For Crown-owned mineral rights, NGC is considered to be natural gas and is administered in the same manner as conventional gas.

**MOR3. What royalty regime is used for NGC?**

A. NGC production is governed by the same royalty regime as all other natural gas production on Crown land in Alberta. Energy companies that are producing on Crown land must pay a royalty to the province for oil and gas. The overall objective is to ensure that the Crown retains a fair share of the oil and gas production revenues as royalty for Albertans. The Royalty working group is examining this issue on behalf of the MAC.

**MOR4. Will landowners who don't own mineral rights get a portion of NGC royalties?**

A. Royalties are a way for mineral owners to share in the value of resource production due to their legal interest in the property. A landowner who does not own the minerals has no legal entitlement to royalty from the subsurface property. Albertans collectively enjoy the benefits of Crown royalties in other ways – through the delivery of the many government programs and services such as health care, education or construction of infrastructure. NGC is treated exactly like all Alberta resources owned by the Crown – the benefits go to all Albertans.

To the extent that development of mineral resources negatively affects the surface owner's use of their land, the Surface Rights Act provides for compensation through a one-time payment and an annual payment thereafter for this impact. The value of the “one time payment” is based on an entry payment; the market value of the land taken for the development; initial nuisance, inconvenience and noise during well drilling; loss of the use of the land; any adverse affects or extra costs that may be incurred in making use of the other land owned by the surface rights holder; and any other factors specific to the situation. Subsequent “annual payments” are based on loss of use of the land and any adverse effects.

In Alberta, if the surface rights owner and the mineral rights developer cannot come to a mutually acceptable agreement as to what these payments should be, they can go to the Surface Rights Board for a decision or adjudication.

**MOR5. Will the public have input into the Crown Mineral Lease Review Committee?**

A. On behalf of the MAC, the Surface/Air working group is examining this issue.

**MOR6. Why do freehold rights owners have to pay taxes on revenue they receive for the development of their resources?**

A. Alberta levies freehold mineral taxes as a means to create equity in the development between Crown and freehold lands. Freehold mineral taxes ensure that freehold owners pay a fair share for infrastructure and services provided by the government. For example, freehold rights owners benefit from the regulatory

services of the EUB or Alberta Environment. EUB guidelines apply to both Crown and freehold lands. EUB guidelines cover issues of safety and the environment. Additionally, freehold taxes support services and infrastructure, such as roads, for the development of both Crown lands and freehold lands. The freehold mineral rights tax funds only a small share of the services and programs enjoyed by freeholders.

Freehold lease arrangements vary but most freehold lease agreements have provisions where the freehold owner is responsible for only their royalty share of costs and taxes. After exemptions, an individual freehold rights owner pays less than five per cent of the total provincial mineral tax. The oil and gas companies pay the remainder.

**MOR7. Has anyone addressed the concern about the value of the wells – a change to linear assessment for municipal taxes? Could wells be taxed as industrial sites in towns/cities?**

A. Well sites and associated pipe and equipment are defined as property under the Municipal Government Act. As such, even well sites located within towns/cities must be assessed as linear property unless a change is made to the Municipal Government Act. Linear properties are difficult to calculate a market value for because:

- The properties seldom trade in the marketplace and when they do, the sale price often includes non-assessable items that are difficult to separate from the sale price;
- The properties often cross municipalities and municipal boundaries;
- The properties are unique in nature.

Because of these factors, the values of linear properties are determined by the use of the property or its production capability. Municipal Affairs develops standard rates based on each of the components that make up these regulated properties and these rates are applied in all municipalities across the province.

Alberta Municipal Affairs has reviewed all well rates for linear assessment as part of an overall review of all linear and other regulated industrial assessments. All issues raised during the consultation were considered. Representatives from key stakeholders were on the well rate review committee.

**MOR8. Is consideration being given to reinvesting some of the revenue the province receives from oil and gas development back into the locally affected communities? Could some of the revenues be devoted to more rapid development of renewable energy resources?**

A. Revenues from royalties have traditionally gone into the general revenue fund where they have been used to fund everything from education to paying down the debt. The Alberta government has invested in research and development from general revenues including work on new energy technologies. Locally affected communities benefit from development through the linear and industrial taxes paid by oil industry operators to municipal governments.

Albertans have had the opportunity to help design the province's future policies in a debt-free Alberta. The **It's Your Future** survey built on previous input from Albertans and asked for an update of their views on how best to use future surplus dollars.

**MOR9. Why does Alberta not charge higher royalties when the commodity price of natural gas rises?**

A. Alberta's natural gas royalty rates are a function of the price level, the production level, and the date when the well was drilled. The royalty is levied as a percentage of the value of the processed gas; thus, as commodity prices rise, so does the Crown's royalty revenue received on the gas and gas products. However, the percentage taken is capped – for most gas products at about 35 per cent for natural gas discovered prior to 1974 and at 30 per cent for natural gas discovered in 1974 and onwards. Additionally, if gas producing companies are more profitable when commodity prices rise, then the Alberta corporate income tax recoveries also rise.

The situation is different for oil where the province takes its royalty share in kind and sells it at the market price. The Alberta royalty structure is continuously being reviewed to ensure that the system is meeting Alberta Energy's goal of securing an appropriate share of the resource proceeds today while continuing to

*attract new investment to ensure unlimited opportunities for future Albertans.*

**MOR10. Does the province develop natural gas to meet market needs or is there an arbitrary amount held back for future use?**

*A. The province relies on industry to develop natural gas supplies as needed based on competitive market forces. Only natural gas in surplus of Alberta's current and future core market requirements can be exported from the province. Given its estimate of remaining established reserves, the EUB determines the volume of gas that is available for removal permits after first accounting for the present and future needs of residential and commercial consumers within the province. A gas removal permit is issued if the proposed volumes are in excess of present and future requirements.*

*The National Energy Board also issues licences and short-term orders for natural gas removals from Canada. They employ a market-based procedure to determine whether the exports are in excess of Canadian requirements.*

**MOR11. Why was the name changed from coalbed methane to NGC?**

*A. We use the term "natural gas in coal" because we want Albertans to know:*

- We are talking about natural gas – the same gas they use to heat their homes – and;*
- Wherever our laws and regulations say "natural gas" it includes gas from coal, shale, and any other type of rock.*

**MOR12. Will the MAC's recommendations be binding, or will it be up to the government to approve them? Will the MAC's recommendations be integrated into existing legislation?**

*A. The MAC will submit recommendations for consideration to the ADM Sponsors' Committee. The recommendations are not binding. If amendments to existing legislation were required, they would be reviewed and approved by elected officials in the same way as all Alberta legislation.*

**MOR13. If the rules and regulations change after this consultation, will the new rules or old rules apply to a valid lease agreement?**

*A. Usually the new rules apply at time of lease continuation. In certain circumstances, the old rules may still apply e.g., a well may stay under the old rules if it was drilled prior to the rule changes. The Crown leases state what law applies – and this likely will be the latest laws and regulations.*

**MOR14. Who owns the companies currently drilling for NGC in Alberta?**

*A. All companies conducting business in Alberta must be registered to do business with the Alberta Corporate Registry and must comply with the EUB's corporate requirements for a company to hold a licence or otherwise operate in Alberta as stated in Guide 67. Companies are owned by shareholders, which may include Albertans.*

## **Air and Noise**

Attendees asked a variety of questions about air and noise issues related specifically to NGC development.

**AN1. Is the Surface/Air Issues working group looking at flaring/venting issues?**

*A. The NGC flaring question has been referred to the Clean Air Strategic Alliance (CASA). The CASA is a non-profit consensus-based association of senior representatives from government, industry and non-government organizations (including health and environmental groups) who have committed to developing and applying a comprehensive air quality management system for Alberta. This group leads the review of other flaring issues in Alberta and through its recent efforts, combined with government and industry initiatives, there has been a 70 per cent reduction of flaring within Alberta.*

**AN2. Will the EUB put an end to the practice of flaring and venting?**

*A. Gas flaring has been reduced by over 70 per cent when compared to a 1996 baseline. Alberta Environment and CASA have introduced clear guidelines for industry. Alberta Environment has*

established ambient air quality standards that, if exceeded, are in violation of the Environmental Protection & Enhancement Act and would subject industry to enforcement. Within this framework, industry is capturing much of the gas, rather than venting or flaring it and further reductions in venting and flaring are anticipated.

**AN3. How dangerous is NGC, especially if there is a leak? Is hydrogen sulphide contamination possible with NGC?**

A. All production information gathered to date indicates that produced NGC is natural gas requiring very little in the way of processing. NGC is a sweet and dry gas generally made up of over 90 per cent methane with small amounts of carbon dioxide (CO<sub>2</sub>) and nitrogen (N<sub>2</sub>). NGC does not generally contain hydrogen sulphide (H<sub>2</sub>S), the dangerous component in sour gas. As such, a NGC leak would be no more dangerous than a conventional natural gas leak.

**AN4. What are the requirements for monitoring air quality for NGC developments? Is NGC development in the greenhouse gas inventory?**

A. NGC wells are subject to all the requirements and practices for natural gas wells. NGC development is part of the greenhouse gas inventory being undertaken by CASA to monitor greenhouse gas output in Alberta.

**AN5. What are the existing regulations and concerns pertaining to noise and NGC development?**

A. NGC is similar to shallow gas development from sands in that it is low-pressure gas. While all gas wells will require compression at some time during their producing life, low-pressure gas requires compression at an earlier point in production. In most cases, compression is centralized and often can take advantage of existing infrastructure and current compression sites. Noise levels associated with the energy industry are regulated by the EUB and strict cumulative noise limits are imposed on industry.

## **Landowner Issues**

Some landowners were unclear about communication and/or notification requirements by developers as well as regulatory authorities. In general, they wanted more open communication. They also expressed concerns about their rights and appropriate compensation.

A number of landowners were also concerned about potential environmental impacts in their area and requested cumulative impact studies be undertaken. They wanted to know how and when an Environmental Impact Assessment (EIA) would be triggered and believed EIA's should be done on a regional basis.

**L1. What kind of landowner notification is required for NGC wells?**

A. A landowner should know if a NGC well is being proposed. A company is required to fully disclose its proposed application, including the nature of the development and potential impacts. This allows landowners access to information about what is being proposed and the opportunity to provide input. EUB Guide 56 requires a written description of the purpose of a proposed well and a code specific for NGC wells.

EUB Guide 56 addresses public notification and specifies that landowner consultation must occur before an application for a well licence is made. By sharing information early, applicants can plan their development with awareness of local needs more effectively.

**L2. Are companies required to indicate the total number of wells they will be drilling at the outset? What are companies required to tell landowners especially regarding planned future development?**

A. Applicants are expected to disclose future plans to the extent they are known. An initial NGC well is often a test to assess local performance, with only conceptual plans, at best, on future development. Where there are multi-year, multi-well drilling plans, companies are expected to disclose more details.

**L3. Once a surface lease is signed, is it too late for members of the public to express concerns to the EUB?**

*A. If, after concerted efforts to address public issues, there are still outstanding concerns then the EUB has a number of provisions for dispute resolution. Please contact your local EUB field center for information about its dispute resolution mechanisms. You can find the number for your local EUB field center at <http://www.eub.gov.ab.ca/BBS/eubinfo/offices-field.htm>.*

*If the question relates to a contract issue, contact the Surface Rights Board at 780-427-2444.*

**L4. Why can a gas well be approved before an adjacent landowner is notified? A well could have more impact on an adjacent landowner than on the landowner where the well is located.**

*A. The EUB regulates minimum public notification distances and provides explanations of situations where additional public contact is required to satisfy legislative requirements. Notification distances usually reflect the risk nature of the development, sensitivity of the environment and impact of setbacks. NGC wells with low-pressure sweet gas production with saline water production are considered lower risk. The minimum public notification distance for lower risk wells is 100 metres.*

*Each development proposal and the associated land, however, can be different. Applicants must carry out the minimum requirements and review the situation to see if additional public contacts are required. Local authorities and synergy groups can assist an applicant to understand local needs. Applicants must respond to all requests for information and notify the EUB of any outstanding concerns. Public notice requirements are subject to audit and operations can be suspended if deficiencies are found.*

**L5. How much notice is required to a landowner and the EUB when a company plans to re-complete a well?**

*A. A well licence confers the right of the operator to conduct basic operations including standard workovers and re-completion. If the operation has the potential to introduce a new, higher risk category (e.g., changing from production of sweet gas to sour gas) then a new application is required with all conditions fulfilled including a new public consultation. The EUB encourages companies to apply best practices such as informing landowners of activities.*

**L6. What steps are taken to ensure landowners understand what they are signing and what resources are available to help them in the process?**

*A. The company is required to provide two information packages when they first contact the landowner for a well licence. The first is a technical package on what is proposed, potential impacts and plans to reduce impacts. The second includes an EUB document describing landowner rights, identifying other sources of information and a letter from the EUB's Chairman offering EUB staff assistance. A landowner should never feel rushed to sign a surface lease.*

**L7. How do you find out which company owns a well?**

*A. EUB regulations require all wells to have a sign posted on the site, which identifies the company and provides a contact number. If there is any concern in this regard, landowners should contact the EUB's area offices.*

**L8. What processes or legislation exists to ensure that the rights of affected landowners are addressed? What opportunity is there for stakeholder participation?**

*A. Legislative obligations are placed on Alberta Environment and the EUB to ensure potentially affected parties have the opportunity to learn the facts about a proposed development, understand potential impacts, ask questions, provide input into plans and have input into decisions. Detailed rules of practices and various guides describe this process. Lack of resolution may be grounds for appeal to either the Environmental Appeal Board for Alberta Environment decisions or the courts for EUB decisions.*

**L9. Since NGC development is relatively new in Alberta, would it be possible to extend the 48-hour period allowed for landowners to change their minds about signing a contract with a landman?**

*A. Although the land agent is allowed to request a signature 48 hours after presenting the lease agreement, the landowner should not feel rushed. If there are any concerns about the proposed*

agreement contact the Farmers' Advocate Office at 780-427-2433 or [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/ofa2621](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/ofa2621) to get advice.

**L10. Are NGC impacts expected to be greater than those of conventional natural gas wells? If so, what processes exist to ensure a landowner is fairly compensated; e.g., for re-completion activities, increased maintenance or increased number of pipelines due to NGC.**

*A. NGC impacts are within the range of impacts expected by gas and oil development. The Surface Rights Board manages compensation rules.*

**L11. Are there plans to survey farmers concerning their willingness to lease their land for multiple well sites?**

*A. This question has been passed on to the Surface/Air working group for consideration.*

**L12. If there is a spill on the land, the landowner cannot use that portion of land as collateral at the bank. It appears landowners are being held responsible for industry's actions. Will there be a study on the potential devaluation of property due to NGC development?**

*A. Alberta Environment regulates contamination issues. The Surface Rights Board handles any surface rights issues.*

*There have been numerous studies on this issue. The most recent study is "Impact of Oil and Gas Activity on Rural Residential Property Values" conducted by the EUB in December 2003.*

**L13. I had a surface lease renewed for 15 years. That is a long time period. Should there be an automatic increase in compensation every five years?**

*A. The Surface Rights Board handles most surface rights and surface lease compensation issues.*

**L14. I was able to negotiate a yearly rental agreement with a gas company for a pipeline. By using annual rentals, I am more assured that the land will be cleaned up. Should annual rentals be considered in contract negotiations?**

*A. This question will be passed on to the Surface Rights Board and Land Compensation Board for consideration.*

**L15. Why does the amount of landowner compensation differ depending on where you live in the province?**

*A. Surface leases are contracts negotiated between private parties, but the compensation paid is related to the value of the land taken and to the general pattern of payment in the area. For instance, land that can sustain a large number of cattle is worth more in compensation than say, land that can run very few or no cattle. The Surface Rights Board uses certain local criteria to set compensation.*

**L16. Will a landowner end up before the EUB if a lease is not signed? Are there other options?**

*A. If a landowner does not sign a surface lease, the company has the legal option to ask the Surface Rights Board for a right of entry order and decide on the appropriate compensation. The company also has the right to bring a non-routine application to the EUB to address unresolved landowner concerns such as site selection, operating conditions, etc. The EUB, however, cannot address the amount of compensation being sought by the landowner.*

**L17. Is there a forecast of where drilling activity will take place? Should energy development planning be integrated with other uses such as forest management?**

*At this time, only a part of one NGC target, the Horseshoe Canyon east of Highway 2 is being commercially developed. While the AGS has mapped potential NGC targets, additional data is needed to forecast where further commercial NGC development may occur.*

*There are examples of integrated planning occurring in the province such as SRD's integrated land management program.*

**L18. Will issues such as cumulative impacts of conventional oil and gas development, as well as NGC, be considered within a land, socio-economic and recreational context? Will the government consider setting thresholds?**

*A. The Surface/Air Issues working group has identified this topic as one of the areas it will review.*

**L19. What programs are in place to monitor the various aspects of NGC development? Who ensures that the environment is protected? Who monitors for methane leaks?**

*A. The EUB, as the lead energy regulator, conducts field inspections of energy developments (excluding seismic) following appropriate legislated acts and regulations. EUB field staff will also respond to all public complaints.*

*EUB field staff must apply a ranking system to prioritize inspections. The inherent risk of the activity, operator performance and sensitivity of the area are all factors considered. An annual report is published summarizing inspection work and enforcement actions taken. In addition, field inspection reports are available to landowners for energy development on their lands.*

**L20. Who monitors industry to ensure compliance with rules and regulations related to surface impact, e.g., minimizing disturbance of native prairie grasslands?**

*A. On public lands, Sustainable Resource Development staff ensure surface lease and approval compliance. Environmental problems, especially if they are off lease or threaten surface bodies of water, are reported immediately to Alberta Environment for additional work or remediation.*

**L21. At what point would a NGC development be large enough to trigger an environmental impact assessment (EIA)?**

*A. All companies must assess the overall impact of their development as it relates to the specifics of their proposal and the type and use of the potentially affected land. For select energy activity, the Minister of Environment may require the completion of formal EIAs.*

**L22. Should environmental assessments be undertaken on a regional basis to ensure companies test in a wide enough area? Can a single well application process cause fragmentation of public lands?**

*A. The extent and nature of the supporting information for NGC development is determined on a case-by-case application basis.*

**L23. How is a site reclaimed? How long can a non-productive well be left suspended before the company has to undertake site remediation?**

*A. Alberta Environment establishes the reclamation standards that must be met. The EUB has technical requirements that all suspended properties must meet. Alberta Energy has requirements for mineral lease continuation. Surface lease conditions, including annual payments, must be met on all wells including suspended properties. Surface lease conditions are negotiated between private parties. Should a suspended property not satisfy the various requirements, the EUB can require compliance or may order abandonment. If a company complies with all requirements, a well may be temporarily shut-in; i.e., held in a suspended state for a long time as an asset of the company.*

**L24. Can all traces of a NGC well be removed from a site once the methane is depleted?**

*A. Companies are required to reclaim sites in an environmentally sound manner, so that the ability of the land to support various land uses after reclamation is similar to the ability that existed prior to the activity being conducted on the land. "Reclamation" means any or all of the following:*

- (i) The removal of equipment or buildings or other structures or appurtenances (right, privilege, or property that is considered incident to the principal property for purposes such as passage of title, conveyance, or inheritance);*
- (ii) The decontamination of buildings or other structures or other appurtenances, or land or water;*
- (iii) The stabilization, contouring, maintenance, conditioning or reconstruction of the surface of land, and*
- (iv) any other procedure, operation or requirement specified in provincial regulations.*

*After a site has been reclaimed, the operator can apply to Alberta Environment for a reclamation certificate. An inspector will review the application and if the remediation requirements and reclamation criteria have been met, a reclamation certificate is issued indicating the site has been returned to a state for some other future use.*

**L25. How are orphan wells addressed?**

*A. In the upstream oil and gas industry, an orphan is a well, pipeline, facility or associated site which has been investigated and confirmed as not having any legally responsible or financially able party to deal with its abandonment and reclamation.*

*All gas facilities will eventually reach their economic limits and be required to be abandoned and reclaimed. One of the core principles of energy development in Alberta is that abandonment and reclamation occurs without having any financial impact on individual Albertans or the public purse. In that regard, an Orphan Well Program was established by legislation to manage the abandonment and reclamation of upstream oil and gas orphan wells, pipelines, facilities and their associated sites.*

*Industry funds all of the costs incurred by the Orphan Well Program, mostly through an Orphan Fund Levy. This levy is based on the abandonment and reclamation liabilities held by each company and it is collected annually by the EUB and remitted to the Orphan Well Association. The EUB also conducts liability screening and controls on property transfers to ensure that companies are financially able to handle their reclamation and abandonment responsibilities and to minimize the creation of new orphans.*

**L26. Should a well abandonment fee or bond be attached to the well licence, for the life of the well?**

*In October 2000, following considerable stakeholder (Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Alberta Environment and Alberta Sustainable Resource Development) consultation, the EUB introduced its new Licensee Liability Rating (LLR) program to support the petroleum industry-funded Orphan Well Program, which is designed to ensure that the costs of abandoning and reclaiming orphan oil and gas sites are not borne by the public.*

*The LLR considers the risk a licensee poses to the Orphan Fund based on a comparison of the licensee's deemed assets to its deemed liabilities. A licensee's LLR is determined monthly. A licensee will be required to place security deposits with the EUB whenever the licensee's ratio of Deemed Assets to Deemed Liabilities (LLR) for the current month falls below 1.0. The required security deposit will be the difference in dollars between the licensee's Deemed Liabilities and Deemed Assets. Security deposits must be cash or a renewable irrevocable letter of credit.*

*If the licensee becomes defunct, the EUB has established processes to deal with the site. In some cases, the site can be transferred to a viable licensee. In other cases, the site will be abandoned and reclaimed by either the EUB and/or the Orphan Well Association. The funds held in trust by the EUB on behalf of the defunct licensee will be used to cover the costs.*

*With the security offered by the industry-wide commitment and legislative authority, additional security deposits were not required.*

**L27. Will the government look after clean up on freehold land like it monitors clean up on Crown surface leases?**

*A. Yes, Alberta Environment protects both Crown and freehold land by ensuring that land used for industrial activities is developed and reclaimed in an environmentally sound manner. In the case of an upstream facility (e.g., a well, pipeline or battery site) that is no longer productive, the operator is required to apply for a reclamation certificate under the Alberta Upstream Oil and Gas Reclamation and Remediation Program. Under this program, the landowner also receives information outlining how the surface disturbances of the site were reclaimed and how any potential contamination has been addressed.*

**L28. What about crop/seed contamination caused through NGC development, such as seed being transported from field to field during equipment moves? How is this monitored?**

A. Operators or leaseholders are "occupants" as defined in the Weed Control Act and therefore, are liable for weed control. Under the Weed Control Act, the occupant of the land must destroy all restricted weeds, control noxious weeds and prevent the spread or scattering of nuisance weeds. The Weed Control Act also states that "no person shall deposit or permit to be deposited weed seeds or material containing weed seeds in a place where they might grow or spread" and "no person shall move a machine or vehicle if the movement is likely to cause the spread of a restricted, noxious or nuisance weed". The Act provides for weed inspectors to issue notices to the occupant to address weed problems.

**L29. What is the funding mechanism for the EUB?**

A. The energy and utility industries and Albertans jointly fund the EUB. A levy is set on industry that is mandatory and subject to enforcement. The public pays a share through a direct government payment included in the Ministry of Energy's budgetary process. The EUB's annual report, which includes additional information on the budget, is publicly accessible at [www.eub.ab.ca](http://www.eub.ab.ca).

**L30. Does the EUB have sufficient staff to enforce the regulations concerning NGC development?**

A. The regulators (EUB, Environment and SRD) have a sizable budget and staff resources to ensure the respective mandates are achieved. Government continually reviews and evaluates priorities and the effectiveness of the programs in order to reallocate resources. The EUB believes they have sufficient numbers of staff with the flexibility to do the job. If information shows additional resources are required, then there are provisions for regulators to seek budget changes.

**L31. How do landowners and stakeholders know if the information being provided to them is accurate?**

A. The EUB requires companies to consult with potentially affected parties, which may result in one-on-one consultation and community open houses. The information in these sessions will likely reflect considerable detail on the proposed project and the general understanding of a single company.

Information on NGC is available from various sources and reflects current knowledge and understanding, which is now significantly better than when coals were first tested over ten years ago. Extensive information is available from the Government of Alberta online at: <http://www.energy.gov.ab.ca/245.asp>. This website will be updated as more information becomes available. Other groups, such as the Canadian Association of Petroleum Producers, Canadian Society of Unconventional Gas, the Pembina Institute and Alberta Government Services have also issued information documents on NGC.

Landowners are encouraged to access the available Alberta-based information and direct questions to the company involved or to the EUB and Alberta Environment, which regulate the companies.

## **Evaluation of Information Sessions**

Following is a summary of the evaluations that were completed by attendees at the public information sessions.

A majority of the respondents were fully or somewhat in agreement with each of the statements below, indicating their satisfaction with the public information session process. While the degree of agreement for each statement generally ranged between 60% and 90%, smaller percentages of respondents found the information handouts helpful (56%) and the short session presentations presented in an understandable and useful manner (57%).

Please see Appendix B for a breakdown by location of the evaluations, as well as the accompanying comments from attendees on both content and process.

<b>Statement</b>	<b>Partially or Fully Disagree</b>	<b>Neutral</b>	<b>Partially or Fully Agree</b>
I found the greeters helpful	1%	26%	73%
I found the information handouts helpful in my understanding of NGC development in Alberta	7%	37%	56%
I found the information stations and staff to be useful and educational	7%	29%	64%
I found the posters and maps useful and informative	4%	21%	75%
I found the facility easy to access and an appropriate venue for this evening's session	1%	10%	89%
The short session presentations were presented in an understandable and useful manner	11%	32%	57%
The pace of the evening was appropriate for the topic material	8%	20%	72%
I found the facilitated question and answer portion to be a valuable tool in sharing information	4%	15%	81%
I found the speakers to be knowledgeable about their specific area	9%	26%	65%
I had sufficient opportunity to ask questions and provide input	6%	11%	83%
The moderator was effective and was able to adhere to the schedule	4%	14%	82%

## Next Steps

The working groups are analyzing the information, issues/concerns and questions obtained at the public information sessions. The working groups will work through these issues, develop draft recommendations and present their findings to the MAC. The MAC will then review the recommendations and create a final list of recommendations to present to government in 2005.

Throughout this period, information will be posted on the NGC web site at <http://www.energy.gov.ab.ca/245.asp>.

If you believe any issues/questions are missing in this summary, please contact the Department of Energy Public Information Centre at 780-427-0265, toll free: 310-0000.

## Appendices

**Appendix A** Information session overview, presentations, handouts, maps and posters

**Appendix B** Evaluations