

ENERGY RESOURCES CONSERVATION BOARD

Calgary Alberta

ALTAGAS LTD.

**APPLICATIONS FOR TWO PIPELINE LICENCES,
AN AMENDMENT TO A FACILITY LICENCE, AND
APPROVAL FOR AN ACID GAS DISPOSAL SCHEME
POUCE COUPE FIELD**

**Decision 2009-073 Errata
Applications No. 1579080,
1579141, 1580400
and 1567595**

The Energy Resources Conservation Board (ERCB/Board) issued *Decision 2009-073*, resulting from the hearing that commenced on August 11, 2009, in Bonanza, Alberta. The Board has since discovered an error in this document in Section 6.3.2: Views of the Intervener, on page 42. The following view is incorrectly attributed to Dr. Du but should have been attributed to Mr. McCutcheon. The paragraph in error reads: “The interveners’ expert on air dispersion, Dr. Du, questioned why the ERP did not address SO₂, which would result if an H₂S release were ignited. He maintained that SO₂ was more harmful than H₂S and that, therefore, response procedures should be included in the ERP.”

Accordingly, the Board replaces the above passage with the following:

“The interveners’ expert on emergency response planning, Mr. McCutcheon, questioned why the ERP did not address SO₂, which would result if an H₂S release were ignited. He maintained that SO₂ was more harmful than H₂S and that, therefore, response procedures should be included in the ERP.”

The Board also notes that throughout the body of the decision, an error in the spelling of Mr. McCutcheon’s name was made.

The Board considers that the correction to the paragraph noted above reflects the Board’s intention in *Decision 2009-073*. Therefore, the Board approves the above-noted correction to *Decision 2009-073*.

Dated in Calgary, Alberta, on January 14, 2010.

ENERGY RESOURCES CONSERVATION BOARD

<original signed by>

J. D. Dilay, P.Eng.
Presiding Member



AltaGas Ltd.

Applications for Two Pipeline Licences,
An Amendment to a Facility Licence, and
Approval for an Acid Gas Disposal Scheme
Pouce Coupe Field

December 22, 2009

ENERGY RESOURCES CONSERVATION BOARD

Decision 2009-073: AltaGas Ltd., Applications for Two Pipeline Licences, an Amendment to a Facility Licence, and Approval for an Acid Gas Disposal Scheme, Pouce Coupe Field

December 22, 2009

Published by

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**Decision 2009-073
Applications No. 1579080,
1579141, 1580400,
and 1567595**

1 DECISION

Having carefully considered all of the evidence, the Majority of the Energy Resources Conservation Board (ERCB/Board) hereby approves Applications No. 1579080, 1579141, 1580400, and 1567595, subject to the conditions set out in Appendix 2. The Minority of the Board believes that the applications should be denied.

This decision report reflects the unanimous views of the Board panel with the exception of the specific views of the Majority and the specific views of the Minority in Section 4: Need for the Project and Proliferation, as noted.

2 INTRODUCTION

2.1 Applications

Application No. 1579080

AltaGas Ltd. (AltaGas) applied to the ERCB, in accordance with Section 39(1)(b) of the *Oil and Gas Conservation Act (OGCA)*, requesting approval to amend the licence of its existing gas processing plant in the Pouce Coupe Field, which is licensed to process up to 1330 thousand cubic metres per day ($10^3 \text{ m}^3/\text{d}$) of sweet raw gas. The facility is located in Legal Subdivision (LSD) 3, Section 3, Township 81, Range 13, West of the 6th Meridian (the 3-3 plant). The proposed addition to the facility would process $707 \times 10^3 \text{ m}^3/\text{d}$ of raw sour natural gas, with a maximum hydrogen sulphide (H_2S) content of 50 moles per kilomole (mol/kmol) (5 per cent), from which $689.9 \times 10^3 \text{ m}^3/\text{d}$ of sales gas and $14.1 \text{ m}^3/\text{d}$ of pentanes plus would be recovered. The facility would produce acid gas (about 17.25 tonnes per day of sulphur equivalent), which would be disposed of through subsurface injection through an existing well at LSD 9-10-81-13W6M. The emergency planning zone (EPZ) for the facility would have a 4 kilometre (km) radius.

Application No. 1579141

AltaGas applied, in accordance with Part 4 of the *Pipeline Act*, for approval to construct and operate a pipeline for the purpose of transporting acid gas from the proposed facility to a pipeline tie-in point at LSD 9-10-81-13W6M. The proposed pipeline would be about 2.58 km in length, with a maximum outside diameter of 60.3 millimetres (mm). AltaGas requested that the approval for the pipeline allow the transportation of acid gas with a maximum H_2S concentration of 800 mol/kmol (80 per cent). At the maximum H_2S concentration applied for, the cumulative potential H_2S release volume would be 2806 m^3 , with a corresponding EPZ of 4 km. The proposed pipeline would be operated as a level-3 pipeline.

Application No. 1580400

AltaGas applied, in accordance with Part 4 of the *Pipeline Act*, for approval to construct and operate a pipeline for the purpose of transporting sour gas from LSD 6-3-80-13W6M to the 3-3 plant. The proposed pipeline would be about 12.7 km in length, with a maximum outside diameter of 219.1 mm. AltaGas requested that the approval allow for the transportation of gas with a maximum H₂S concentration of 50 mol/kmol (5 per cent). At the maximum H₂S concentration, the cumulative potential H₂S release volume would be 1344 m³, with a corresponding EPZ of 3 km. The proposed pipeline would be operated as a level-2 pipeline.

Application No. 1567595

AltaGas applied, in accordance with Section 39(1)(d) of the *OGCA*, for approval to dispose acid gas into the Belloy Formation in the Doe Field through an existing well located in LSD 9-10-81-13W6M (the 9-10 well). AltaGas applied for a maximum H₂S concentration for the disposal scheme of 800 mol/kmol (80 per cent). The potential H₂S release rate would be 1.48 cubic metres per second (m³/s), with a corresponding EPZ of 3.94 km.

Along with the facility, the proposed pipelines and disposal well would be located about 12.5 km west of Bonanza, Alberta.

In regard to the various H₂S concentrations referred to by AltaGas, the Board understands the evidence as follows. AltaGas expected that the gas to be processed by the facility would have an H₂S content of 1 per cent. AltaGas planned for operational flexibility to 1.5 per cent H₂S. AltaGas's contract with the producer of the gas provided for up to 2 per cent H₂S. AltaGas said that it would design the sour train for up to 2.5 per cent H₂S. AltaGas requested that the approval for the proposed sour train provide for the processing of gas containing up to 5 per cent H₂S.

Figure 1 shows the well, pipelines, and facility applied for by AltaGas and the residences of the interveners.

2.2 Interventions

Several parties filed interventions regarding these applications (see Appendix 1). The principle concerns expressed were about compliance history and competence of AltaGas, human and animal health and safety, adequacy of emergency response planning, adequacy of public consultation, air and water contamination, and proliferation.

2.3 Hearing

The Board held a public hearing in Bonanza, Alberta, on August 11 to 15, 2009, before Board Members J. D. Dilay, P.Eng. (Presiding Member) and J. D. Ebbels, LL.B., and Acting Board Member J. G. Gilmour, LL.B. The panel and ERCB staff conducted a site visit on August 10, 2009. Those who appeared at the hearing are listed in Appendix 1.

At the close of the hearing, the Board required AltaGas to complete a number of undertakings. AltaGas submitted the undertakings on August 19, 2009, and therefore the Board considers the hearing to have been closed on that date.

2.4 Preliminary Matters

On June 19, 2009, the interveners filed a preliminary motion for the ERCB to

- compel AltaGas to provide a risk assessment of the acid gas pipeline, the plant modifications, and the gathering pipeline;
- request that the matter of the acid gas injection scheme, Application No. 1567595, be heard with the other applications; and
- require AltaGas to provide a proliferation assessment.

On June 19, 2009, AltaGas responded to the motion. The interveners provided a reply submission on June 22, 2009.

In a letter to the parties dated July 2, 2009 (see Appendix 4), the ERCB provided a decision on the motion and its reasons. It declined to order that AltaGas provide a risk assessment and granted the request for the acid gas injection scheme application to be heard at the same time as the related applications and as such adjourned the hearing dates. The ERCB found that AltaGas had filed evidence of a proliferation assessment and as such did not require an additional assessment. The ERCB did, however, have its own information request, which it included in its response to the motion.

3 ISSUES

The Board considers the issues respecting the applications to be

- need for the project and proliferation,
- acid gas disposal well (location of the injection well, acid gas containment to disposal zone, applied-for operating parameters, and monitoring program),
- public safety (dispersion modelling, flaring, and emergency response planning),
- pipeline issues,
- competence of the applicant,
- public consultation, and
- other issues (human and animal health, water testing (dugouts and runoff), noise, lighting, land values, and categorization of applications as routine or nonroutine).

In reaching the determinations in this decision, the Board has considered all relevant materials constituting the record of this proceeding, including the evidence and argument provided by each party. Accordingly, references in this decision to specific parts of the record are intended to assist the reader in understanding the Board's reasoning relating to a particular matter and should not be taken as an indication that the Board did not consider all relevant portions of the record with respect to the matter.

4 NEED FOR THE PROJECT AND PROLIFERATION

4.1 Views of the Applicant

AltaGas proposed the new 12.7 km pipeline to gather sour natural gas from a tie-in point at LSD 6-3-80-13W6M on a pipeline proposed by Birchcliff Energy Ltd. (Birchcliff) and to deliver the gas to its proposed sour train at its Pouce Coupe gas plant. The Birchcliff pipeline was neither licensed nor constructed at the time of the hearing.

AltaGas filed a document entitled “Assessment of Needs and Alternatives to the Project” (Needs Assessment), which considered the necessity of developing a new sour gas processing plant and evaluated the feasibility of upgrading existing facilities and of entering into partnerships with other operators. AltaGas stated that it considered the potential for expansion of existing facilities within a 30 km radius of the project in Alberta. The Needs Assessment assumed that sour gas production would come from existing sour wells in the area having small, “nuisance” H₂S content and from new sour wells under development or to be developed.

AltaGas stated that its business model as a midstream processor reduced the risk of proliferation, as it built plant capacity in response to producers’ needs. It said that its reserves assessment showed 137 billion cubic feet (Bcf) of proven sour reserves already tied in and an additional 1070 Bcf of probable sour reserves. The applicant said that if just 5 per cent (about 50 Bcf) of that gas were brought on during the course of a year, there would be a need for over 135 million cubic feet per day (MMcfd) of sour processing capacity for about 20 years.

AltaGas contended that its proposed expansion is appropriately sized to balance immediate demand with likely growth. It further stated that the significant reserves in the immediate area would support not only this expansion but also likely additional expansion at other plants or new greenfield developments.

AltaGas stated that it considered six existing plants that were between 5 and 28 km from the proposed project. It rejected all but the Spectra Energy Midstream Corporation (Spectra) plant, located at LSD 5-23-80-13W6M (the 5-23 plant), as viable alternatives based on distance from the producing wells, additional equipment requirements, and the availability of and proximity to an acid gas disposal well. All of the other plants processed sweet gas and were not capable of processing sour gas. AltaGas compared its proposed project to a hypothetical expansion of the Spectra plant and met and corresponded with Spectra to obtain information that it used in the comparison. AltaGas said that while Spectra initially objected to the application on the basis of concerns about the impact on its own acid gas disposal well, AltaGas addressed Spectra’s questions regarding the area of influence of its 9-10 well and Spectra ultimately withdrew its objection.

AltaGas said that Spectra initially advised AltaGas that it had no plans to expand its plant. Spectra told AltaGas that instead of an expansion, it would be able to increase the processing capacity of its plant by 20 MMcfd with debottlenecking and some additional compression but would not be able to process gas containing 2.5 per cent H₂S. Spectra advised AltaGas that it was capable of processing gas containing up to 1.5 per cent H₂S. Accordingly, AltaGas said that Spectra would need to add a new train to have the sour gas capability that AltaGas was proposing.

AltaGas expected that the gas to be processed by the facility would have an H₂S content of 1 per cent. AltaGas planned for operational flexibility to 1.5 per cent H₂S. AltaGas's contract with Birchcliff provided for up to 2 per cent H₂S. AltaGas said that it would design the sour train for up to 2.5 per cent H₂S. It requested that the approval for the proposed sour train provide for the processing of gas containing up to 5 per cent H₂S.

AltaGas maintained that Birchcliff could not get the necessary capacity for gas processing from Spectra. It said that in order to process Birchcliff's gas, Spectra would need to add an additional sour processing train to process gas containing 2.5 per cent H₂S, construct additional gathering lines, and add refrigeration equipment and a new flare system. AltaGas stated that this hypothetical expansion of the Spectra plant would require more additional land than its proposed project. It said that its proposal would result in less permanent surface disturbance, slightly larger setbacks, and slightly greater impact on EPZ areas due to the proposed acid gas pipeline and acid gas injection well components of the project. Further, AltaGas maintained that air emissions were likely to be lower with its proposal than with an expansion of the Spectra plant.

In addition, AltaGas provided a letter to it from Birchcliff dated June 13, 2008, which said that Birchcliff had approached Spectra in August 2007 to determine if Spectra could provide the firm sour gas processing capability that it needed and determined that it could not. The letter indicated that Birchcliff contracted with Spectra for 0.5 MMcfd and that Spectra could not provide additional firm capacity. In addition, the letter indicated that Birchcliff asked Spectra in early 2008 if it could expand its plant to accommodate Birchcliff, but Spectra advised that expansion of its plant was not viable as a result of anticipated landowner issues. The letter went on to state that the availability of gathering and processing capacity from a capacity increase at the Spectra facility some time in late 2009 would not satisfy its need for gathering and processing capacity for the wells it planned to drill in 2008. It also pointed out that Birchcliff could not afford to drill wells that could be stranded.

AltaGas stated that its planned decommissioning of its Doris plant and the subsequent use of that equipment at the proposed plant would result in a decrease in air emissions at Doris and would eliminate an EPZ at Doris. AltaGas contended that on balance, the environmental and landowner impacts of its proposal would be less than the hypothetical Spectra plant expansion alternative.

AltaGas maintained that its proposed project would minimize emissions and flaring. AltaGas said that even with knowledge of Spectra's plans to have 14 MMcfd of capacity available by January 2010 and an increase in capacity by 20 MMcfd with the possible changes to the Spectra Plant, AltaGas believed that the present and future demands for its proposed facility remained high. AltaGas maintained that while debottlenecking of the Spectra plant might add capacity, it would not be sufficient to process the gas for which the AltaGas proposed facilities would be designed because of the higher H₂S content of Birchcliff's gas.

AltaGas said that even with Birchcliff's own new plant currently under construction about 25 km to the southwest of the proposed project, Birchcliff had reconfirmed its need for the processing capacity that AltaGas applied for in this immediate area. As part of its proliferation assessment, AltaGas contacted sour gas reserve owners in the area of the plant and had discussions with at least seven area producers, but was only able to reach contractual commitments for most of the proposed new capacity with Birchcliff.

AltaGas contended that it had attempted to discuss the matter of proliferation with the interveners on more than one occasion, as was evidenced by that matter appearing on the agendas of meetings. It said, however, that the matter was not discussed because the interveners would not allow the agenda to get past the matter of flaring.

4.2 Views of the Intervenors

The interveners maintained that sour gas in the area should be processed at the Spectra plant. They submitted that AltaGas had not met the requirements of ERCB *Interim Directive (ID) 2001-03: Sulphur Recovery Guidelines for the Province of Alberta, Directive 056: Energy Development Applications and Schedules*, and the May 2004 Canadian Association of Petroleum Producers (CAPP) *Recommended Practices for Sour Gas Development Planning and Proliferation Assessment* (Industry Recommended Practice, or IRP).

The interveners contended that the lack of industry objection to AltaGas's applications was not significant or surprising, considering that Spectra wanted to expand its own plant. The interveners also argued that a 12.7 km gathering pipeline would reach halfway to the recently approved Birchcliff plant. They also stated that the Birchcliff gas supply contract with AltaGas had only a five-year term and that at present Birchcliff did not have a pipeline to tie into. The interveners also submitted that ARC Resources would switch its gas from the Spectra plant to a plant that it was applying for in British Columbia.

The interveners argued that AltaGas did not meet the ERCB proliferation assessment requirements. The interveners pointed out that additional *Directive 056* proliferation requirements became effective June 30, 2008, including a requirement that prior to filing an application, an applicant for sour gas facilities near people must evaluate all plants and pipelines within 15 km and must evaluate the feasibility of upgrading an existing facility and forging commercial partnerships with existing licensees.

The interveners noted that in Exhibit B-21, a December 15, 2008, letter from Spectra to AltaGas, Spectra said that it would be willing to expand its plant to accommodate 18 MMcfd of gas containing 5 per cent H₂S, which should be sufficient to support a finding by the Board that AltaGas's proposed project was unnecessary. The interveners noted that Spectra said to AltaGas that it knew of no gas containing 5 per cent H₂S in the immediate vicinity. The interveners submitted that AltaGas asked Spectra an unrealistic question in that regard to get the answer that it wanted.

In addition, the interveners stated that Spectra had an existing acid gas injection well at its plant. The interveners noted that Spectra issued a public notification dated March 27, 2009, about a debottlenecking study showing a potential increase in capacity of its plant by 40 per cent with the addition of compression and possibly a heat exchanger. Spectra also wrote to an intervener on June 23, 2009, about the possibility of adding 20 MMcfd of processing capacity, also pointing out that it would have 14 MMcfd of firm capacity available in January 2010. The interveners queried why it was that by March 27, 2009, Spectra had indicated to the public that it was looking at an expansion of capacity at its plant, yet in AltaGas's March 31 submission, it reported that Spectra said it did not have plans for an expansion.

The interveners contended that AltaGas's inquiries to Spectra with respect to gas containing 5 per cent H₂S gas were an artifice to allow AltaGas to argue that it was seeking approval for the

processing of gas containing up to 5 per cent H₂S and that the Spectra plant could not handle such gas. The interveners also said that because AltaGas and Spectra were competitors, it was not in AltaGas's best interests to have Spectra process more of Birchcliff's gas than it was currently processing. The interveners argued that AltaGas asked Spectra a question involving criteria unrelated to what it was proposing to do, which was not in the spirit of the proliferation guidelines.

The interveners said that Exhibit B-18 showed that capacity at the Spectra plant could be increased with very little impact on the community and involving the addition of only two pieces of equipment.

They maintained that as of the date of the hearing and certainly as of the date of the application, AltaGas had not performed an assessment of the capabilities of existing sour gas plants, including the design parameters and capacity of existing plants, and that AltaGas had rejected Spectra's expression of interest as an alternative because it did not want anything to do with a modification of Spectra's plant.

The interveners submitted that an assessment of the area's future production potential to ensure that reasonable long-term processing needs could be met was absent from AltaGas's evidence. In addition, they argued that there was no evidence that AltaGas contacted reserve owners within 5 km to invite them to participate in the new facility. The interveners asked rhetorically why AltaGas did not submit Exhibit B-21, the December 15, 2008, letter from Spectra, and suggested that AltaGas did not like Spectra's answers so it did not meet the requirement of submitting documentation regarding alternatives to construction, including the technical and economic feasibility of using or modifying existing infrastructure. The interveners argued that this required the submission of Spectra's letter.

Further, the interveners said that AltaGas had failed to assess the social and economic effects of the alternatives to the project and to conduct an assessment of any existing facility or pipelines to determine if they could be used, as required by *ID 2001-03* and *Directive 056*. The residents suggested that there was no evidence in the record about the location of existing sour gas pipelines. They also asked AltaGas to submit into evidence the required map illustrating the assessment area, including proposed wells, pipelines, facilities, land use (roads and houses), and existing infrastructure.

The interveners also suggested that AltaGas neglected to provide an estimate of the project timeline through construction to operational date. They argued that if one assumed spring 2010 to be the operational date, Spectra would have 14 MMcfd of firm sour processing capacity available at its plant. The interveners stated that AltaGas should have considered an area development plan in accordance with CAPP's IRP to account for regional sour gas needs in facility design but that this analysis had not taken place. The residents argued that area development plans should be considered in "hot spots," meaning areas where there was a high degree of public concern about sour gas facilities. The residents argued that the deficiencies in the application revealed that AltaGas was simply waiting for the Board to tell it what to do in its application and audit process.

The interveners maintained that Spectra's injection well could handle the incremental capacity needed. They were concerned that AltaGas's project would create a new EPZ and that there was no egress for some of the residents to the north or east of their homes.

The interveners argued that as the proposed project represented a new emissions point source, it was less satisfactory from an environmental viewpoint.

The interveners also questioned the accuracy of AltaGas's responses to Board information requests and submitted that Spectra did not have to add a new full sour processing train.

The interveners contended that the requirement in *ID 2001-03* and *Directive 056* to obtain and document the views of local stakeholders with respect to proliferation of sour gas facilities was not fulfilled. The interveners maintained that AltaGas's proliferation materials were deficient and that the application should be denied.

The interveners brought to the Board's attention conditions in the Saddle Hills County Development Permit recommending that the ERCB ensure that existing facilities were used or expanded and shared to process sour gas and avoid additional facilities. The interveners also suggested that the Spectra West Doe plant and ARC Resources plant about 10 miles west, in addition to Birchcliff's Pouce Coupe South Plant, should be considered for the processing of the gas.

4.3 Findings of the Board

4.3.1 Findings of the Majority of the Board

The views expressed below are those of Board Members J.D. Dilay, P.Eng., and J. D. Ebbels, LL.B. (the Majority).

Directive 056 states in Section 5.9.3 that the "ERCB accepts the public's view that there is a need to avoid facility proliferation where possible and practical." The issue is not new. As early as 1989, the ERCB knew that the proliferation of gas plants was a matter of considerable concern to the public.¹ By 1999, proliferation of sour facilities near people was clearly on the radar of many stakeholders, and the multistakeholder Public Safety and Sour Gas Committee was formed. Among the recommendations it made in December 2000, Recommendations 7, 32, and 33 dealt with proliferation of facilities. A CAPP initiative created an IRP dated May 2004 with a view to achieving voluntary compliance with guidelines relating to proliferation assessments. CAPP and the ERCB established an oversight committee to track and comment upon adherence to the IRP over a two-year trial period. The oversight committee found that there was a poor rate of adherence to the IRP but that when they were followed, there was a beneficial effect. The ERCB added proliferation requirements to *Directive 056* effective June 30, 2008. In addition, in Section 5.9.3, *Directive 056* adopted *ID 2001-03*. Hence, the proliferation assessment requirements of that interim directive are still in effect.

The Board notes that the requirements added to *Directive 056* were effective June 30, 2008, after AltaGas had filed its application and after it had commenced its public consultation. The Board did not require AltaGas to amend its application or public consultation.

The IRP provides that the following should be addressed in sour gas development plans:

- the sour gas zone or zones targeted and the potential impact on people;

¹ The ERCB Position on Gas Plant Proliferation, June 7, 1989, by F. J. Mink, Board Member.

- a project to produce sour gas from the zone or pool;
- the scope of potential development to the extent practical, at least conceptually if the project is one element of a longer term phased pool(s) development;
- if elements of a plan are uncertain, the range of potential future development in as much detail as feasible;
- a proliferation assessment of how existing infrastructure can be used (as is or modified) and/or an explanation of why existing infrastructure cannot be used;
- a map or maps showing existing and potential sour gas-related developments and other land interest and uses to the extent possible; and
- the timing of the project.

The Majority notes that, as the name suggests, the IRP contains recommended but not required practices, in distinction to *ID 2001-03* and *Directive 056*, and uses the word “should” in distinction to the words “must” or “shall.”

On balance and after consideration of all of the evidence submitted and tested through the hearing process, the Majority finds that AltaGas substantially met the proliferation requirements of the Board. It is the case that there are gaps in the proliferation assessment work performed by AltaGas, but through the course of the hearing, the Majority was able to gain an understanding of the need for the project proposed by AltaGas and its effect on the public in the area. Assuming for the sake of argument that *ID 2001-03*, the proliferation provisions of *Directive 056*, and the IRP had the force of regulation, an application that fails to contain information prescribed by regulation can nonetheless be considered and approved by the Board. Section 10 of the *Oil and Gas Conservation Act* contains the regulation-making power of the ERCB, and subsection 4 of Section 10 provides:

If a regulation under subsection 1(a) has prescribed the information to be included in or to accompany an application pursuant to a given provision of the Act or the regulations, the Board is not precluded from considering or acting on an application pursuant to that provision that does not contain that information or from requiring additional information.

4.3.1.1 Assessment of Existing Facilities

ID 2001-03, *Directive 056*, and the IRP each direct, expect, or recommend evidence that demonstrates, as set out in *ID 2001-03*, that if “...applicants have vigorously explored and assessed all existing facilities in the area that afford technically viable alternatives, regardless of ownership or interest,” in order to avoid or minimize proliferation of sour gas facilities. The Majority notes that, in essence, the interveners argued that AltaGas failed to do so.

In its Needs Assessment, AltaGas considered the five sweet and one sour plant about 28 km from its existing plant. It quickly rejected the five sweet plants based upon the lack of sour processing capability, distance between the two plants, and/or lack of capacity, leaving only the Spectra plant for consideration. Spectra’s plant is about 5 km away from the proposed plant addition. It is already receiving Birchcliff gas to the extent of about 0.5 MMcfd.

The Majority notes that notwithstanding the 15 km radius prescribed by *ID 2001-03* for investigation, AltaGas used a 30 km radius, double the distance (except where such a distance

would take it into British Columbia). The Majority notes that all of the sweet plants are incapable of processing any sour gas and so would be unsuitable for processing the gas that AltaGas proposes to handle. They would similarly require the addition of sour gas processing capability as contemplated by AltaGas. Accordingly, the Majority finds that AltaGas has sufficiently considered the sweet plants and has appropriately rejected them as viable alternatives.

ID 2001-03 also states that applicants must clearly demonstrate to the ERCB that any proposed new sour gas plant within 15 km of an existing sour gas processing plant is justified in terms of social and environmental effects. AltaGas believes that this has been shown and the interveners believe that it has not been shown, so it is up to the Board to make this determination of justification in terms of social and environmental effects. The Majority believes that given the nature and scope of the AltaGas project and having regard for the mitigation measures proposed by AltaGas, the social and environmental effects would be small. *ID 2001-03* points out that it is recognized that there will be situations where construction of new sour gas processing plants will be more acceptable from an environmental and public impact standpoint than construction of lengthy sour gas pipelines and related facilities necessary to connect to existing processing plants. The Majority believes that because of the very close proximity of the two plants, an increase in pipeline length when connected to the AltaGas proposed plant, compared to a shorter possible line to the Spectra Plant, is not a significant consideration.

AltaGas did formally contact Spectra, and with Exhibit B-21 and other correspondence in evidence, the Majority believes that this provision of *Directive 056* is fulfilled. The directive also provides that to preclude the unnecessary development of new Category C and D facilities, the applicant is expected to investigate the feasibility of using existing facilities and/or pipelines before submitting an application to the ERCB. AltaGas did investigate the feasibility of using the existing Spectra facility and formed the opinion that an expansion of it was necessary. The evidence proffered for the hearing also provided information to the Board about the possibility of increased capacity being added at the Spectra plant by work falling short of a physical expansion, namely, debottlenecking.

In regard to pipeline proliferation, Section 6.9.25 of *Directive 056* states: “The ERCB accepts the public’s view that pipeline proliferation should be avoided whenever possible and practical.” Pipeline proliferation “occurs when new development results in greater surface disturbances and impact on the public than would be the case if existing infrastructure were used.” Each of AltaGas’s proposal, the hypothetical expansion of Spectra’s plant, debottlenecking of the Spectra plant, and the new Birchcliff plant requires new and additional gathering pipelines. The Majority believes that the gas gathering line and acid gas disposal line are needed for the project and would not result in proliferation of pipelines. The Spectra plant would not require an additional acid gas disposal line, such as the AltaGas project would. The Majority notes that AltaGas said that it did not have the data to determine if the Spectra acid gas disposal well would be capable of accepting the additional acid gas.

Section 8.3.2 of *Directive 056* requires applicants to conduct an assessment of the existing infrastructure. Applicants must

- a) review all existing sour gas facilities and sour gas pipelines within a 15 km radius of the proposed facility;

- b) evaluate the feasibility of upgrading existing facilities and forging commercial partnerships with existing licensees; and
- c) document the evaluation for application and audit purposes.

There was a considerable body of evidence and testimony on the adequacy of AltaGas's fulfillment of these and related provisions, particularly regarding the suitability of the Spectra plant. On balance, the Majority is of the view that AltaGas discharged these obligations. However, a detailed discussion is warranted and follows.

4.3.1.2 Assessment of the Spectra Plant

With respect to the Spectra plant, the Majority notes that it currently has the capability to process gas containing up to 1.5 per cent H₂S but not more, as contemplated by the AltaGas application. The Majority notes that Spectra has confirmed that it has the capability presently to process up to 1.5 per cent H₂S in the inlet gas. Thus, the Spectra plant would require the addition of another processing train capable of processing 2 per cent H₂S in the inlet gas, as contemplated by the AltaGas contract with Birchcliff. The Majority finds that AltaGas did appropriately explore and assess the Spectra plant as a technically viable alternative.

Spectra appears to be firming up plans to debottleneck its plant. It must have been known to Spectra that Birchcliff is committing its gas in the area to the proposed AltaGas plant, yet it appears that Spectra intends to go ahead with an increase in its capacity to process other sour gas in the area. This buttresses the evidence of AltaGas that even with its proposed changes to its plant, there will remain an additional demand in the area for the Spectra plant to increase its capacity and even to have additional processing capacity in the area. In other words, there is likely to be a surplus of gas over the capacity of the AltaGas proposed processing capacity and the increased capacity of the Spectra plant.

The basis for AltaGas rejecting the Spectra plant as a viable alternative is AltaGas's addition of a sour processing train to its plant being compared with a hypothetical expansion at the Spectra plant to add 18 MMcfd of 5 per cent H₂S.

AltaGas is asking for a licence to process 5 per cent H₂S. It did not provide strong justification for this limit. Its operational parameters are to allow it to process 1 to 1.5 per cent H₂S. It expects to receive gas with an H₂S content of about 1 per cent. It has promised Birchcliff it will be able to handle up to 2 per cent H₂S and has entered into a contract with Birchcliff for that level. It is designing its sour train to handle 2.5 per cent H₂S and its emergency response modelling and planning were based upon 2.5 per cent H₂S.

The Board notes from its records that the facility licence for the Birchcliff plant provides for a maximum H₂S content of inlet gas of 5 per cent.

Spectra is not proposing an expansion matching the hypothetical expansion used by AltaGas such that AltaGas can say that its proposal is more acceptable. Spectra says it can debottleneck, add compression and a heat exchanger, require no additional land, and add 20 MMcfd to its present capacity. In addition, Spectra's correspondence states that it will have 14 MMcfd available capacity in January 2010. (The Majority notes that although it is December 2009, Spectra has not yet applied for approval of increased capacity, so the availability of that capacity

in January 2010 appears to be in doubt.) AltaGas's comparison in its proliferation assessment is not a comparison to the debottlenecking exercise now under consideration by Spectra. Even when asked about the debottlenecking adding 20 MMcfd capacity, AltaGas maintained that it would not be sufficient to process the gas for which its proposed facilities have been designed because of the higher H₂S content of its contracted producer's gas. AltaGas has not shown clearly how realistic this expected H₂S content is. However, the Majority notes that the recently approved Birchcliff plant at LSD 03-22-078-12W6M has approval to process gas containing 5 per cent H₂S.

At no time did AltaGas state that its hypothetical expansion or the debottlenecking of the Spectra plant were not feasible. It maintained that its proposed project is preferable and does not constitute unnecessary proliferation. In Exhibit B-21, it appears that AltaGas expressly addressed the feasibility of an expansion of the Spectra plant to process an additional 18 MMcfd having an H₂S content of 5 per cent. Spectra was willing to carry out such an expansion subject to the finalization of commercial arrangements with customers. Spectra did add the caveat that it did not know of reserves containing 5 per cent H₂S in the vicinity.

AltaGas expressly asked Spectra about its position on forging commercial partnerships with parties such as AltaGas and was told that Spectra would consider developing commercial partnerships with such third parties. Spectra also stated that it would be willing to discuss and develop this further with AltaGas. It is not clear to the Majority that this avenue was explored any further. This particular provision in Section 8.3.2 (6)(b) of *Directive 056* is apt in some circumstances but not in others. In the case of numerous producers in an oil and gas field, it is realistic to expect that they can join forces in commercial and partnership arrangements on the transportation and processing of products. An expectation of commercial partnerships being forged between midstream gas processors such as AltaGas and Spectra breaks down when it is recognized that they are direct competitors and each wishes to maximize plant production and the economics of their plants.

Directive 056 also states that an applicant must obtain an accurate assessment of the capabilities of existing sour gas plants, including design parameters and capacity available. In response to an AltaGas inquiry, Spectra wrote about the design parameters, design capacity, current throughput, and available capacity at the Spectra plant. The Majority believes that AltaGas met this provision of *Directive 056*.

Directive 056 states that an applicant must demonstrate that the feasibility of modifying the facilities was evaluated with the licensee if existing plants are not designed to handle the applicant's gas or if there are capacity limitations (high fees by themselves are not a sufficient ground to reject the option to use an existing facility). Again, there appears to be little or no dispute about the feasibility of modifying the Spectra plant, although Spectra did query the need for the ability to handle 5 per cent H₂S. Spectra made this point in answering AltaGas's inquiry to confirm that the Spectra plant as currently configured would not be able to process an additional 18 MMcfd of sour gas having an H₂S content of 5 per cent. The Majority believes that it would be feasible to modify the existing Spectra plant to accommodate the gas but that the modification would need to be similar to the plant addition proposed by AltaGas.

The Majority has already commented upon its findings in relation to AltaGas's evaluation of the feasibility of upgrading existing facilities, and there was little or no dispute about the feasibility

of upgrading the Spectra plant. The Majority is satisfied that the Spectra plant can be upgraded to process additional volumes of sour gas. AltaGas has documented its evaluation in its Needs Assessment.

4.3.1.3 Consultation

ID 2001-03, Section 6, requires applicants to consult with local stakeholders on the evaluation of alternatives.

It appears that from very early on, the issue of proliferation was in the minds of some residents, most notably, Judy Wilson and Bruce Wilson, Jim Lowery and Jean Lowery, and Dal Brown. However, the evidence does not show that these residents ever took up the opportunity presented by AltaGas to have discussions on the issue during the consultation sessions. The Majority notes AltaGas's contention that the interveners would not allow the agenda to proceed past the issue of flaring. The Majority also notes that the interveners did not refute that contention.

Proliferation was on the agenda for AltaGas's community meetings more than once. For meetings on November 3 and November 24, 2008, AltaGas had workbooks prepared that included "3rd Party Total Impact Proliferation."

The November 3, 2008, Community Meeting Notes list "Total Impact and Proliferation" as a "Topic For Resolution." One action item that arose during the meeting was to arrange for Alberta Environment to provide information at the next meeting on what it knew about the environmental load in the area. The minutes contain the entry that the residents are not responding to one gas plant expansion, they are responding to the fact that there are many expansions in the area, all around them, and they are expecting accelerated activity in gas and oil to impact upon their lives. They stated a desire for a third-party assessment of the area to see the big picture of the impact. The residents expressed a need for an explanation of what is going on in the entire neighbourhood.

Total impact and proliferation were also on the AltaGas agenda for the November 24, 2008, meeting, but the minutes do not disclose whether it was discussed except insofar as air emissions were discussed.

Unfortunately, it appears to the Majority from the evidence that AltaGas was precluded from turning to the issue of proliferation and alternatives in the area by the focus of interveners on operational issues and flaring at the existing AltaGas plant. The Board notes that the interveners did not refute AltaGas's assertion. AltaGas is not to be faulted for not consulting with respect to proliferation issues when the other parties to the consultation exercise prevented this from occurring by an apparent unwillingness to turn away from the operational and flaring issues.

The March 2009 Update Bulletin for the AltaGas project lists 3rd Party Total Impacts and Proliferation as an issue identified by the community. AltaGas's responses were, first, to support a seminar by Dr. Don Davies on the environment and sour gas and, second, to note that the Alberta Environment Mobile Air Monitoring Lab would be sent to the Bonanza area.

On the basis of the above, the Majority believes that the parties were aware of and discussed proliferation during the consultation process but it appears that the discussions tended to centre

around flaring and area air emissions as opposed to the possibility of the use of the nearby Spectra plant and the issue of the need for a second sour gas plant in the area.

To reiterate, the Majority finds that the residents effectively prevented AltaGas from having discussions with them on the proliferation issues by their pursuit only of the flaring issues at the existing AltaGas plant. The opportunity to discuss concerns relating to proliferation was present throughout but the opportunity was not taken up by the residents. The unwillingness of the residents to move beyond the flaring issues or at least table them while proliferation issues were to be discussed prevented AltaGas from having views of local stakeholders to document in relation to proliferation issues. The views of the interveners on this matter have been fully documented by virtue of the hearing.

Prior to the submission of an application, applicants must follow the IRP and, as a minimum, expand the project-specific information package requirements of Section 2.2.2 to include

- a detailed description of the full project, including future wells, pipelines, and facilities,
- the results of the applicant's assessment for the use of existing infrastructure,
- a map that illustrates the assessment area, including proposed wells, pipelines, and facilities, existing land use (e.g., roads, residences), and existing infrastructure investigated, and
- the anticipated timing for the project from the licensing stage through to production operations.

The Majority notes that AltaGas did provide a detailed description of the project in its materials provided to residents in the area. It is not clear from the evidence that its Needs Assessment was provided to the residents, but that document was contained in the application materials provided to counsel for the residents in advance of the hearing and hence was available for consideration prior to the hearing. While the 15 km radius map prepared by AltaGas and filed in evidence had deficiencies in that it lacked pipelines, roads, and residences, the Majority was able to gain a sufficient picture of these elements in the area through the whole of the evidence filed at the hearing. Finally, in its Pouce Coupe Area Project Description and Sour Gas Development Plan and Fall 2008 update thereto supplied to residents during the consultation process, AltaGas provided its estimates of anticipated timing for the project. In the update, it was the view of AltaGas that construction would last 8 to 10 weeks after licensing. In its earlier project notifications, AltaGas predicted that construction would occur through the summer and fall of 2008, with start-up expected in fall 2008. While these estimates became outdated due to the passage of time prior to the hearing, the residents were provided with a time estimate for licensing through to processing operations.

Provision of the development plan to the Board should be preceded by distribution of the same plans to people in the vicinity of a proposed activity or facility. The IRP in Section 3 discusses notification and consultation on a plan. The Majority notes that in its notification letters and Pouce Coupe Area Project Description and Sour Gas Development Plan and updates thereto, AltaGas substantially complied with the recommended sour gas development plan practices. The Majority has commented above on the consultation efforts of AltaGas as they relate to the issue of proliferation.

4.3.1.4 Assessment of Other Impacts

In addition to assessing the capability of existing plants, applicants are expected to assess, compare, and document, preferably in tabular form, a number of impacts, including

- surface disturbance impacts of a new plant project,
- impacts of incremental pipelines,
- the areas and residences affected by EPZs,
- relative air emissions, and
- relative health and safety concerns.

AltaGas used a hypothetical Spectra expansion scenario to evaluate the only alternative to the project (or at least the only alternative as it saw it) and presented the surface disturbance impact in tabular form for its project and the hypothetical Spectra expansion. This tabular comparison is on page 6 of the Needs Assessment. The AltaGas proposal is stated to have a slightly greater impact on setbacks and EPZ areas. A few more people would be included in an EPZ. AltaGas pointed out that 31 residences would be in its EPZs, 24 of which are already in an EPZ, so 7 new residences would be affected. It said that 28 residences would be in a Spectra expansion EPZ, of which all but 4 are already thought to be in an EPZ. Although there would be 3 residences more in EPZs with the AltaGas proposal, the Majority does not believe that the difference is significant and believes that the residents can be fully protected in any event by a properly designed ERP.

The table sets out that the Spectra expansion would disturb more surface area, 4.8 hectares as compared to 0.8 hectares. AltaGas's proposal was superior with respect to air emissions. Incremental pipelines are not listed in the tabular comparison, but in its narrative AltaGas stated that the Spectra expansion would require additional gathering lines similar to the AltaGas proposal. In terms of incremental pipelines, AltaGas said that a Spectra plant expansion would require a new 8 inch diameter pipeline about 8.7 km in length and additional inlet compression of about 1000 to 1200 horsepower. AltaGas also submitted that the hypothetical Spectra expansion would require a full new processing train.

In its July 17, 2009, responses, AltaGas also set out land footprint impacts in tabular form, which is favourable to the hypothetical Spectra expansion, mainly because of the longer AltaGas gathering line and the need for the new acid gas pipeline.

With respect to air emissions, the AltaGas project, the hypothetical Spectra expansion, and the Spectra debottlenecking all use acid gas disposal by means of injection, so do not involve SO₂ emissions. AltaGas said that its proposal would be superior in terms of NO_x and CO₂ emissions. This was uncontroverted.

The two scenarios are very close on comparisons of land required, surface disturbances, setbacks, and the inclusion of people in EPZs. It must be noted that the comparison uses the hypothetical expansion of the Spectra plant, as opposed to the debottlenecking actually under consideration by Spectra. However, on balance, the Majority does not believe that there is a clear margin in favour of either the proposed project or increasing capacity of the Spectra plant. The comparisons are not determinative either way.

4.3.1.5 Assessment of Future Developments

ID 2001-03, Directive 056, and the IRP each generally provides that applicants are expected to assess, compare, and document, as a minimum, estimates of future local oil and gas development and the impacts such development may have on the viability of the options examined.

With its estimate of 137 Bcf of proven reserves and more than 1000 Bcf of probable reserves, AltaGas believes that its project is needed, capacity at Spectra is needed, and it is reasonable to assume that further additions of sour gas processing capacity will be required if the probable reserves in the area are to be produced. AltaGas's position was that its project would be able to meet short-term needs in the area and that in the long term, it would need additional expanded capacity and the Spectra plant would be able to fill its capacity. The Majority accepts the evidence of AltaGas in this regard and accepts that both the AltaGas proposed expansion of sour gas processing facilities and the increased capacity that appears to be a possibility at the Spectra plant are likely to be taken up by area producers.

Applicants must also contact other reserve operators in the area to assess longer-term regional gas processing needs in the design of proposed new sour gas plants. As a minimum, the area to be assessed must be consistent with industry notification requirements for sour gas plants. AltaGas said that it contacted numerous reserve operators and settled on making processing arrangements with one area operator, Birchcliff, to fill its new sour gas processing train. AltaGas also relied upon its reserve study to account for regional processing needs in the design of its project. The Majority is satisfied that AltaGas made reserve owners in the area aware of its plans and accepts the AltaGas approach to this requirement.

Section 8.3.3 of *Directive 056* and the IRP both provide that area development plans may be appropriate in some circumstances. If so, such a plan should form part of the nonroutine participant involvement documentation distributed to area residents, as was argued by the interveners.

An area development plan is defined as the plan of one or more operators to explore for, produce, transport, and process sour gas in an area where there are significant common or conflicting issues over the whole area. Such issues may include conflicts with residential or other surface development, public safety and environmental impacts, and areas with a high level of public concern ("hot spots"). Such plans deal with area-wide issues among multiple operators. Section 8.3.3 of *Directive 056* provides that the Board may require that an area development plan be prepared.

This particular application was treated as a nonroutine application throughout, as there were outstanding objections to the development. Prior to the hearing, the Board ruled that AltaGas would not be required to prepare an area development plan as set out in the IRP. The IRP points out that area development plans may be appropriate in certain situations involving multiple parties that are coordinating activities in a given area. As a midstream gas processor, AltaGas is in direct competition with Spectra; this is not a situation in which multiple parties are coordinating activities, such as might be the case where multiple producers need to coordinate to build and operate pipelines to gather and transport gas or a plant to process the gas. As mentioned in the IRP, such plans are typically proponent driven, if more than one operator has deemed it appropriate to design a coordinated approach to area planning. The Board may

encourage such a plan if it has determined that a multi-operator coordinated plan is appropriate and the respective operators have yet to initiate such a plan voluntarily.

On balance, the Majority does not believe that an area development plan was required in this particular instance, which was reflected in the ruling of the Board on the preliminary motion. In connection with the application of AltaGas, it was not shown that several operators were proposing developments in the immediate area. As a small number of residences would be included in an EPZ when they had not previously been so included, it was not an area in which residential development was being expanded into sour gas areas or vice versa. Also, the Majority is not convinced that the area was a “hot spot,” as contemplated by the IRP.

To reiterate and in conclusion, based upon the whole of the evidence, the Majority finds that there has been substantial performance by AltaGas in meeting the proliferation requirements. The Majority has had regard for the following evidence, among other things:

- There are sour gas reserves in the area that require processing.
- Five of the 6 plants in a large radius centred around the 3-3 plant are sweet plants with no capability to process sour gas.
- AltaGas has entered into a contract with Birchcliff to process Birchcliff’s sour gas having up to 2 per cent H₂S.
- Spectra can handle sour gas having up to 1.5 per cent H₂S.
- Birchcliff contacted Spectra and determined that Spectra could not meet its needs.
- Spectra appears to wish to increase the sour gas processing capacity of its 5-3 plant, which indicates that there may be reserves in addition to Birchcliff’s that require processing capacity.

Overall, the Majority finds that there is a need for the applied-for plant expansion and that it would not result in unnecessary proliferation of facilities.

4.3.2 Findings of the Minority

The views expressed below are those of Acting Board Member J. G. Gilmour, LL.B. (the Minority). The Minority recognizes that its decision is based solely on the issue of proliferation as presented by the applicant and the interveners at the hearing. Based on the evidence provided by the applicant to the Board, the Minority believes that the applicant has not satisfactorily met requirements in *Directive 056 and ID 2001-03* required by the Board to obtain a licence to expand its existing plant facilities.

4.3.2.1 Minority Decision

The Minority notes that the issue of proliferation has been before this Board for decades. A policy statement on plant proliferation issued by the Board in 1991 in *Informational Letter (IL) 91-01: Applications for Approval of Gas Processing Schemes—Policy on Plant Proliferation* states on page one:

The Board believes developers of new gas processing plants should recognize and strike a balance between various public interest issues, and decisions should not be tailored exclusively to suit individual resource ownership in the area or dominated by a desire, on the part of individual

companies, to control processing plants....the Board expects operators will vigorously explore all reasonable options to use existing gas processing plants in the area and expects these efforts to be documented in support of an application to expand or add new facilities.

In Board *Decision 099-31: NorthRock Resources* the Panel noted on page 4:

The Board expects that the most desirable outcome will be the alternative that represents an appropriate cost/benefit trade-off while minimizing the impacts of the new development. The assessment of alternatives needs to consider not only the land-use impacts of new gas plants but also the impacts of compressor stations and pipelines, relative environmental emissions, and the overall public impact of each alternative. The Board expects proponents to document their assessment of the relative impacts of the alternatives considered.

On page 5 of the above decision, the panel went on to state:

It is the Board's expectation that applicants of sour gas facilities will do more than simple notification. The Board considers it essential for proponents to enter into meaningful public and industry consultation, including the opportunity for and consideration of stakeholder input in significant project design decisions.

AltaGas maintains that according to its estimates, there is 137 Bcf of proven reserves and 1000 Bcf of probable reserves of gas in the area, hence its five-year contact with Birchcliff. AltaGas maintained that such reserves could accommodate all midlevel gas processors operating in the Pouce Coupe area. In addition, it noted that its existing sweet gas plant was operating at about 10 per cent capacity, or only 3 MMcf per day of sweet gas, which resulted in its proposal to expand its plant to sour gas operations.

In recognizing the purposes of the *Energy Resources Conservation Act*, the Board must not only take into consideration how to effectively and safely extract the resources throughout the province, but also must determine whether the applied-for project is in the public interest, having regard to the social and economic effects of the project and the impact of the project on the environment.

4.3.2.2 Proliferation Assessment by the Applicant

AltaGas filed its Assessment of Needs and Alternatives to the Project (Exhibit B-1), in accordance with *Directive 056*, in order to expand and upgrade its existing facilities. As noted in this document, there are six existing gas plants operating within 28 km of the proposed AltaGas plant.

As part of the Board review process, the applicant must comply with two Board documents, namely, *ID 2001-03* and *Directive 056*, to address "proliferation" matters.

In final argument before the panel, the AltaGas's counsel argued that "we've carefully followed the Board's directives on proliferation, public consultation and public safety....The company followed your directives, Directive 56. They filed a proliferation assessment. They followed all the key elements."

The Minority suggests that the "need" for a project does not necessarily coincide with the issue of "proliferation." The former subject may assist the population in general, whereas proliferation usually affects a local community, such as residents living in the Pouce Coupe area.

In *Decision 2005-060: Compton Petroleum Corporation*, on page 13, the panel stated:

A finding by the Board that the approval of a development would be in the public interest does not imply that there will be no site-specific impacts. The challenge for the Board is to ensure that any site-specific or local impacts are mitigated to an appropriate and acceptable level.

In summary, the Minority intends to show that the AltaGas in fact has failed to comply with certain mandatory provisions of *Directive 056 and ID 2001-03* and that its Assessment of Needs and Alternatives to the Project fails to meet the ERCB requirements to acquire a licence to expand the existing AltaGas facilities. The following deficiencies counter the position taken by the applicant that it has met the important preconditions for approval contained in these two ERCB documents.

As noted in Section 4.3.1: Findings of the Majority of the Board, requirements in Section 8 of *Directive 056* were effective June 30, 2008, after AltaGas had filed its initial application with the Board. Section 8 was the only substantive change to *Directive 056* on the above date. However, after June 2008, AltaGas continued to file additional evidence with the Board. For example, the applicant's final ERP was not filed with the Board until June 2009.

It should be noted that all other provisions of *Directive 056 and ID 2001-03* would still apply to the applicant. The Minority maintains that Section 8 of *Directive 056* also would apply to AltaGas, since nowhere in its evidence or at the hearing did AltaGas make the case that Section 8 did not apply to it. To the contrary, in final argument before the panel, AltaGas took the position that "they followed all the key elements" of *Directive 056*.

4.3.2.3 ID 2001-03

In *ID 2001-03*, Section 6: Sour Gas Facility Proliferation states:

To preclude the unnecessary development of new sour gas processing plants, applicants must vigorously explore and assess all existing facilities in the area that afford technically viable alternatives, regardless of ownership or interest, prior to applying for approval....

The applicant is required to examine all existing facilities within a 15 km radius of its project proposal as viable alternatives. AltaGas used a 30 km radius (except where such a distance would take it into British Columbia). In its Needs Assessment submitted to the Board, AltaGas noted that there were six plants within this radius, but stated that only the Spectra plant at 5 km treated sour gas. For this reason, AltaGas explored the Spectra operations as the only technically viable alternative.

In its evidence, AltaGas stated that its operational parameters were to process 1 to 1.5 per cent H₂S, although it expects to receive from the Birchcliff contract gas an approximate content of 1 per cent H₂S. In this contract with Birchcliff, AltaGas says it could handle 2 per cent H₂S. The company proposes to design the sour train to handle 2.5 per cent H₂S even though it is asking the Board for a licence to process 5 per cent H₂S.

In its response to AltaGas's questions, Spectra stated that its amine sweetening process at its plant could handle 1.5 per cent H₂S (Exhibit B-21). AltaGas also posed the hypothetical question to Spectra whether its plant could process 18 MMcfd of sour gas having an H₂S content of 5 per cent. In its responses Exhibits B-18 and B-21, Spectra said that at the present time it could not

process an additional 18 MMcfd but that in its incremental review of its operations, it could debottleneck, add compression and a heat exchanger, require no additional land, and add 20 MMcfd to its current capacity. Spectra's correspondence to Mr. Bruce Wilson, dated June 23, 2009 (Exhibit C-1) also stated that it would have an additional 14 MMcfd available capacity at its Pouce Coupe plant by 2010.

One has to query how realistic the question was from AltaGas to Spectra regarding the H₂S content of 5 per cent. Spectra responded in its reply to AltaGas that "it is not aware of any production in the immediate vicinity of a plant that has an H₂S content of 5 per cent." At the hearing, AltaGas, based on its own testimony, did not expect gas containing 5 per cent, since its contract with Birchcliff indicated that it would only be handling gas up to 2 per cent H₂S.

Recognizing that the Spectra plant can handle 1.5 per cent H₂S gas and would require minimal upgrade of equipment to achieve the Birchcliff gas at 2 per cent H₂S, one has to question the applicant's hypothetical specifications posed to Spectra. In addition, Spectra is already processing 500 000 cfd of Birchcliff gas under contract.

Section 6 of *ID 2001-03* also states that "the assessment must thoroughly evaluate the feasibility of upgrading existing facilities and/or forging commercial partnerships with related operators."

A question posed to Spectra by AltaGas (Exhibit B-21) asks:

What is Spectra's position on forging commercial partnerships with third parties such as AltaGas in respect of each of the Spectra Processing Facilities and/or the proposed AltaGas expanded processing facility, including with respect to additional facility expansion.

Spectra replied by stating it "will consider developing commercial partnerships with third parties such as AltaGas....Spectra would be willing to discuss and develop this further with AltaGas."

From the evidence, it appears that no further steps were taken by AltaGas to discuss a partnership arrangement with Spectra.

Section 6 of *ID 2001-03* explicitly states that "applicants must consult and involve local residents in their evaluation of alternatives."

The update to the Pouce Coupe Area Project Description and Sour Gas Development Plan prepared and distributed by AltaGas in fall 2008 did not mention proliferation issues.

At the November 3, 2008, community meeting of AltaGas and the local residents, total impact and proliferation were on the agenda, but the minutes contained the entry that the residents were not responding to one gas plant expansion, but to the fact there are many plants surrounding them and that they are expecting accelerated activity in gas and oil to impact upon their lives. The interveners also requested a third-party assessment of the area and a need for an explanation of what is going on in the area.

Total impact and proliferation were on the agenda for a meeting on November 24, 2008, but the minutes do not disclose whether this topic was discussed except insofar as air emissions.

In AltaGas's March 2009 Update Bulletin for the Pouce Coupe Sour Gas Plant Expansion Project, it notes that impacts and proliferation were an issue identified by the community. It

appears that AltaGas's responses were to support a seminar on the environment and sour gas and that Alberta Environment would be sending a mobile air monitoring lab to the area.

AltaGas maintains that the issue of proliferation was discussed at several community meetings, but the discussions seemed to centre around area air emissions as opposed to the possibility of the use of the nearby Spectra plant. The panel also became aware that operational issues at the existing AltaGas plant, such as flaring events, seemed to be a central concern during these consultation meetings with AltaGas.

Although AltaGas maintained that "proliferation" issues were "hijacked" by the residents at the above meetings, the applicant could have easily addressed their flaring concerns and still set aside separate meetings to address its obligations to respond to its "Needs Assessment" review with the interveners. As part of this review process concerning its proposed plans, AltaGas was obliged to address the reasons why the Spectra processing plant was not a satisfactory option.

Two of the interveners, Judy Wilson and Bruce Wilson, said that early on when the project was announced, they stated their concerns "regarding another plant in the area," and in April 2009 they asked about the total impact of air emissions from all the plant sources in the area. In their May 20, 2008, objection, the Wilsons expressly raised the proliferation issue, noting there was already a sour gas plant in the area. The Wilsons also raised proliferation as a concern in their July 9, 2008, correspondence to AltaGas.

Jim Lowery and Jean Lowery, in correspondence to the ERCB on May 1, 2008, raised concerns about the likely increase of drilling in the area and the impact of increased gas processing in the area.

In his submission to the Board, Dal Brown raised the issue of proliferation.

AltaGas was required to consult and involve local residents in its evaluation of alternatives to the proposed project. It appears that very early on from the announcement of the application, proliferation was a significant concern of many residents, but the evidence does not reflect that the applicant met the spirit and intent of Section 6 of *ID 2001-03*. The mandatory provision of this section was that the applicant must consult and involve local residents to examine their evaluation of alternatives to their specific plant expansion. On the basis of the preponderance of evidence heard and submitted at the hearing, the Minority has reached the conclusion that the applicant did not discharge this mandatory requirement in *ID 2001-03*.

Section 6 of *ID 2001-03* provides that applicants are expected to assess, compare, and document, as a minimum, surface disturbance impacts of a new plant project with potential impacts of incremental pipelines and other facilities required to use existing facilities.

AltaGas used a hypothetical expansion scenario to evaluate Spectra in its Needs Assessment document. The AltaGas proposal was mentioned as having a slightly greater impact on setbacks and EPZ areas and affecting a few more residents than the Spectra expansion. The Spectra plant was anticipated to disturb more surface area, 4.8 hectares as compared to AltaGas at 0.8 hectares. AltaGas also compared air emissions for the two scenarios and this comparison was also favourable to the AltaGas proposal.

Incremental pipelines are not listed in the tabular comparison, although AltaGas states that both plants would require additional gathering lines. The AltaGas proposal would require a 2.7 km acid gas pipeline to the injection well and additional gathering lines from the Birchcliff wells to the AltaGas plant.

Section 6 of *ID 2001-03* also states that applicants are expected to assess, compare, and document, as a minimum, the views of local stakeholders regarding the alternatives under consideration.

As noted earlier, based on the evidence before the panel, residents expressed concerns about proliferation, and the subject was an agenda item for more than one community meeting. However, there is no evidence that AltaGas discussed its proliferation rationale and assessment criteria with the residents. Nor does it appear that the applicant discussed the Spectra alternative at any time with the residents, as required in *ID 2001-03*.

Section 6 of *ID 2001-03* states that applicants must clearly demonstrate to the Board that any proposed new sour gas plant within 15 km of an existing sour gas processing plant is justified in terms of social and environmental effects.

Although AltaGas did provide some evidence concerning environmental matters, such as air emissions and air dispersion modelling, it failed to review other environmental concerns, such as potential sensitive land areas and surface water and groundwater impacts.

This section in the ID also refers to the fact the applicant must justify the plant in terms of “social” effects. It is presumed this would mean addressing such matters as public safety, health and social concerns, infrastructure needs, regional planning, and the impact of this increased gas activity on property values. There was no evidence by AltaGas to clarify what areas it should have considered to address this requirement.

Section 6 of *ID 2001-03* states that the applicant must contact other reserve operators in the area, assess longer-term gas processing needs, and account for regional processing needs in the design of new sour gas plants. As a minimum, the area to be assessed must be consistent with industry notification requirements for sour gas plants.

AltaGas claims to have contacted numerous reserve operators, but the company seems to have focused solely on one area producer, Birchcliff. The applicant relied solely upon its reserve study to account for its regional processing requirements in the design of its expanded plant facilities.

ID 2001-03 recognizes that there will be situations where construction of new sour gas processing plants will be more acceptable from an environmental and public impact standpoint than construction of lengthy sour gas pipelines and related facilities necessary to connect to existing processing plants.

Because of the very close proximity of the two plants, increases in pipeline length did not seem to be a significant consideration by AltaGas. However, in terms of facilities, the Spectra plant already has an acid gas injection scheme, while AltaGas must add a new acid gas pipeline and injection well to its expansion proposal.

4.3.2.4 Directive 056

Under the heading of Proliferation, Section 5.9.3 of *Directive 056* states:

The ERCB, as the approving authority, is required to evaluate the need for the proposed project in the broader public interest. The ERCB considers this interest in terms of economic, orderly and efficient development of Alberta's oil and gas resources. The ERCB continues to receive strong input from the public, which is aware of the growth of resource development. The ERCB accepts the public's view that there is a need to avoid facility proliferation when possible and practical.

As noted earlier, the interveners expressed their concern regarding the number of existing and proposed gas plants in their area and adjacent ones close by in British Columbia.

Section 5.9.3, paragraph 27(a)(i), of *Directive 056* reads:

The applicant must evaluate the feasibility of upgrading an existing facility and of forging commercial partnerships with existing licenses.

In the letter from Spectra to AltaGas dated December 15, 2008 (Exhibit B-21), question number 7 reads:

Would Spectra be willing to expand the capacity of the 5-23-80-13 W6M facility to process an additional 18 MMcf per day of sour gas having an H₂S content of 5% on a firm basis?

Spectra's response was, "Yes, subject to the finalization of commercial arrangements with customers...."

The interveners argued that this position from Spectra reaches the conclusion that there already is an existing sour gas plant 5 km away that can meet the specifications of the Birchcliff contract without the need for a new sour gas injection well or an acid gas pipeline, transporting 80 per cent H₂S.

With respect to the requirement of forging commercial partnerships, in the same Exhibit B-21, AltaGas asks Spectra in question 9:

What is Spectra's position on forging commercial partnerships with third parties such as AltaGas in respect of each of the Spectra Processing Facilities...?

Spectra replied that it "will consider developing commercial partnerships with third parties such as AltaGas....Spectra would be willing to discuss and develop this further with AltaGas."

No evidence was disclosed at the hearing that AltaGas pursued this response from Spectra to pursue a partnership arrangement between the two gas processors.

Section 5.9.3, paragraph 27(a)(iii), of *Directive 056* states that the applicant "must demonstrate that feasibility of modifying the facilities was evaluated with the licensee if existing plants are not designed to handle the applicant's gas or if there are capacity limitations..."

In correspondence between AltaGas and Spectra, there appears to be little or no dispute about the feasibility of modifying the existing Spectra plant, although Spectra did query the requirement and need to handle 5 per cent H₂S, indicating that it knew of no production from gas wells in the area with such concentrations. In addition, Spectra was already receiving 500 000 cfd of gas from Birchcliff. This goes back to a fundamental concern: how realistic was the question posed by the applicant to a competing processor that an H₂S content of 5 per cent would be required, if

in fact it was not a prerequisite in AltaGas's contract with Birchcliff? Spectra, as noted earlier, stated in Exhibit B-21 that it was prepared to modify its facilities to meet the specifications outlined by AltaGas in its contract with Birchcliff, but no further evidence reveals what response the applicant took with respect to Spectra's offer.

Section 5.9.3(b) of *Directive 056* states that the applicant "must assess an area's future production potential to ensure that the proposed facility is designed to meet the regional long term processing needs."

AltaGas maintained throughout the hearing that there was enough sour gas reserves in the area for a number of processors to operate in, based on its forecasts.

While the estimates of future reserves provided by AltaGas were not contested, the evidence did not include, for example, where the wells are located, the number of wells, and the scheduled timing for drilling.

Section 5.9.3(c) of *Directive 056* states that the applicant must "contact other sour gas reserve owners within 5 kilometres of a proposed new sour gas plant with a view to inviting these well licensees to participate in the new facility in some manner."

AltaGas stated that it contacted several area producers, but did not offer any details with respect to these discussions. It seemed that AltaGas focused solely on its contractual arrangement with Birchcliff. It made no mention of future expansion opportunities for the proposed plant facilities in the event further contracts were obtained by the company.

Paragraph 5.11.3, Step 3(b), of *Directive 056* states that the licensee must submit documentation regarding the alternatives to construction, including "an assessment of the social and economic effects of the alternative."

The requirement to provide the panel with an assessment of social effects would be similar to the requirement in Section 6 of *ID 2001-03*. However, additional documentation concerning "economic" effects is also required in this section of *Directive 056*.

Section 6.9.25 of *Directive 056*, under the heading of "Proliferation," states:

Pipeline development is to be carried out in a manner that minimizes the overall impacts on the environment and the public. Proliferation of pipelines occurs when new development results in greater surface disturbances and impact on the public than would be the case if existing infrastructure were used.

In AltaGas's application, an acid gas disposal line would be required in addition to a 12.7 km gathering line. This proposal and the hypothetical expansion of Spectra's plant, the debottlenecking exercise for the Spectra plant, and the new Birchcliff plant all require new or additional gathering pipelines. The Spectra plant would not require an additional acid gas disposal line.

The Minority holds that there was very little evidence filed by AltaGas about the state of existing pipelines or proposed pipelines in the Pouce Coupe area.

Section 8.3 of *Directive 056* states that “effective June 30, 2008, all applicants are required to follow the Recommended Practices for Sour Gas Development Planning and Proliferation Assessment when proposing sour gas development (facilities, pipelines and wells) in areas where residents are located within the emergency planning zone (EPZ).” In the background discussion, the directive mentions that the Public Safety and Sour Gas final report, in making Recommendations 7, 32, and 33, noted that greater effort was required to reduce the proliferation of sour gas facilities near people and that more information regarding the future development plans should be provided to the residents.

Section 8.3.2, paragraph 5(a), states that “applicants must, prior to the submission of an application, follow the IRP and as a minimum, conduct an assessment of any existing facility or pipeline to determine if it can be used.”

There does not appear to be any evidence submitted by the applicant of an assessment of existing sour gas pipelines in the area.

Then Section 8.3.2, paragraph 5(b), states that the applicant must “expand the project-specific information package requirements of Section 2.2.2.”

Section 2.2.2, under the heading of “Participant Involvement,” mentions “What information to disclose? Information packages must be developed and distributed to all parties included in the participant involvement program.”

Section 8.3.2 states that the applicant must now expand the project information packages, to include

- a detailed description of the full project, including future wells, pipelines and facilities,
...
- a map that illustrates the assessment area, including proposed wells, pipelines, existing land use and existing infrastructure investigated...

Although AltaGas identified the details of the expanded sweet gas plant, little information was submitted in evidence on the comprehensive pipelines or wells in the area.

AltaGas’s evidence does contain a 15 km radius map in Exhibit B-1, but only plants and facilities were noted on the map. The other requirements in the assessment area, such as proposed wells, pipelines, and existing land use were not indicated on the map.

In Section 8.3.2, paragraph 6, *Directive 056* requires the applicant to conduct an assessment of the existing infrastructure and states that applicants must

- a) review all existing sour gas facilities and sour gas pipelines within a 15 km radius of the proposed facility;
- b) evaluate the feasibility of upgrading an existing facility and of forging commercial partnerships with existing licensees..., and
- c) document the evaluation for application and audit purposes.

While AltaGas reviewed the sour gas facilities in the study area, it did not seem to include a review of pipelines as well. In the evaluation of the feasibility of upgrading the existing plant,

there was no dispute about the possible upgrading of the Spectra plant. There was agreement by the parties that the Spectra plant can be upgraded to process additional volumes of sour gas.

As noted earlier in the *ID 2001-03* review, it is unclear why AltaGas did not follow up with Spectra to develop a partnership arrangement after Spectra acknowledged it would be willing to do so.

Section 8.3.3, paragraph 7, of *Directive 056*, under the heading “Addressing Concerns/Objections,” states:

If there are residents located in the calculated EPZ and unresolved concerns or objections exist, the applicant must

- a) submit a nonroutine participant involvement application that includes documentation to demonstrate that the requirements of Section 8.3.2 were met....

It would appear that in addition to not providing the detailed map, as noted earlier, to the stakeholders, the company failed to communicate its plans and an overview of the existing infrastructures in the area, pursuant to Section 2.2.2 with respect to participant involvement.

4.3.3 Summation

The proliferation issue has been caused in most cases by small gas plants being developed in close proximity to one another. As more gas plants are built or expanded, it results in increased land conflicts with residents living in the area.

On the basis of *Directive 056* and *ID 2001-03*, the panel needs to become convinced that the applied-for expansion of an existing plant is really necessary. Based on the mandatory requirements noted in these directives, and based on the historical development of the proliferation issue for the past forty years, the Board requires the applicant to file with the Board extensive documentation in its Assessment of Needs and Alternatives to the Project review showing all the reasons why an expansion of an existing gas plant is required. A critical part of such documentation is the impact of such facilities on surface disturbance and the people affected by this activity.

In attempting to address the proliferation issue in 1989, the Board wrote:

But it must be remembered that the Board mandate is to evaluate the proposal from a broad public viewpoint. To accept this argument, we need to be shown by way of detailed economic analysis and comparison, the economic merits of all the available options....²

In summary, the Minority believes that AltaGas has failed to comply with many of the important and substantive mandatory provisions of the ERCB’s own directives. This is not a case where the applicant has to meet only the “substantial” proliferation requirements of *ID 2001-03* and *Directive 056*. It is suggested that the term “must” is clear and authoritative when contained in the proliferation requirements outlined by the Board. There is no halfway course of action that the applicant is obliged to meet. In the opinion of the Minority, the interveners raised a preponderance of evidence before the panel that many of these mandatory requirements of the

² The ERCB Position on Gas Plant Proliferation, June 7, 1989, by F. J. Mink, Board Member.

ERCB were indeed not complied with by AltaGas in its Assessment Needs and Alternatives to the Project.

Both *ID 2001-03* and *Directive 056* require the company to inform, disclose, and distribute to the local residents information packages about the detailed project requirements and alternatives concerning their proposal regarding proliferation matters. It is clear from the evidence that these reviews and input from the residents were either very cursory or likely did not take place at all. In the opinion of the Minority, this is a major deficiency. The applicant failed to effectively mitigate the site-specific and local impacts caused by proliferation to an acceptable level, as addressed by many of the residents in the Pouce Coupe Area.

In weighing the evidence from both the applicant and the public submissions, the Minority is of the opinion that indeed AltaGas did not “carefully” follow many of the mandatory prerequisites required in both *ID 2001-03* and *Directive 056* with respect to the issue of proliferation, and for this reason AltaGas’s application for a licence to expand its existing sweet gas processing plant to a sour gas processing plant should be denied.

5 ACID GAS DISPOSAL WELL

5.1 Location of the Disposal Well

5.1.1 Views of the Applicant

AltaGas conducted a review of the formations below the plant site area to determine the potential for having an acid gas disposal well located there. It examined the Belloy Formation, as well as other deeper ones. It believed that the main geological requirements for a successful acid gas disposal zone were

- adequate injectivity, so that the maximum disposal rate could be achieved;
- storage capacity large enough so that the cumulative acid gas volume could be injected without pressuring up the reservoir;
- isolation of injected acid gas to the disposal zone; and
- no impact on producible hydrocarbon reserves.

However, none of the formations that it examined completely met the above requirements. AltaGas concluded that the formations underlying the plant site were either too small in storage capacity or not permeable enough to inject into at the proposed rate or that injection of acid gas into them could impact hydrocarbon recovery from a producing pool. AltaGas therefore decided that the existing 9-10 well was the best option for the scheme.

5.1.2 Views of the Interveners

The interveners raised concerns about the safe operation of the 2.6 km, high-pressure, 80 per cent H₂S, acid gas pipeline that would run from the 3-3 plant to the proposed 9-10 injection well. They stated that they would rather see an injection well located at the plant site with a very short acid gas pipeline, if possible. The EPZ for the pipeline would then be considerably smaller or

nonexistent. They referred to an existing well in Section LSD 6-3-81-13W6M, which appeared to have porous intervals below the Belloy Formation that might be suitable for acid gas injection.

5.1.3 Findings of the Board

The Board notes that the information AltaGas provided to conclude that the geological zones below the plant site were not adequate for meeting the proposed disposal operations was not questioned. The Board accepts AltaGas's evidence that there are no formations near the plant site that are adequate for the proposed disposal operations.

5.2 Acid Gas Containment to Disposal Zone

5.2.1 Views of the Applicant

AltaGas stated that there were five other approved acid gas disposal schemes operating in the Belloy Formation within 90 km of the proposed 9-10 injection well. Injection commenced at these schemes between 1995 and 2002, and all were completed in an aquifer system. Over a period of five to twelve years, none of these sites experienced any problems with the injected acid gas interacting with the formation water or formation matrix.

AltaGas believed that the injected acid gas would be contained at the 9-10 injection well. It stated that this well met the requirements of ERCB *Directive 051: Injection and Disposal Wells—Well Classifications, Completions, Logging, and Testing Requirements*, which addresses hydraulic isolation of the acid gas to the wellbore between the surface and the disposal zone.

AltaGas stated that there were only two drilled and cased offset wells to the injector, which penetrated the Belloy Formation with potential for injected acid gas to migrate there: the 10-11-81-13W6M well (10-11 well) and the 11-12-81-13W6M well (11-12 well). Both were producing Kiskatinaw gas wells owned and operated by Signalta Resources Ltd. (Signalta). AltaGas stated that the production casing in these wells had been cemented through and above the Belloy Formation; however, no cement bond logs had been run over this interval to show the integrity of the cement. Although AltaGas did not expect acid gas to reach these wells until after the cumulative 110 million (10^6) m³ of acid gas had been injected, 15 years from now, AltaGas committed to having a cement bond log run at one of the wells within the next 3 years to confirm whether or not the cement was adequate to provide containment of the acid gas to the Belloy disposal zone. AltaGas believed that the cement job would be similar at both wells, since they were done at the same time. In the meantime, as a precautionary measure, AltaGas had arranged for the surface casing vent to be monitored every three months at each well to detect if an acid gas leak occurred in the unlikely event that acid gas migrated there faster than expected and the cement was inadequate to provide a good seal.

AltaGas also believed that acid gas would be effectively contained to the disposal zone if it were to migrate to any of the offset wells drilled and abandoned as open-hole wells with cement plugs in the 12-section area it reviewed. It stated that either the Belloy Formation was isolated by plugs or the zones that were in between plugs with the Belloy Formation were impermeable.

AltaGas did not expect that the injected acid gas would migrate downdip in the reservoir to the geological fault line southwest of the injection well because the acid gas was more buoyant than formation water and the bottom of the perforations at the 9-10 injection well were higher than the

top of the Belloy Formation at the fault line. Even if acid gas were to reach this fault, AltaGas expected containment to still occur, as it interpreted the fault to be sealing. It stated that this was evident in the producing Kiskatinaw gas pool that lay below, where the gas was being trapped by the same fault.

AltaGas said that in the event of an earthquake, the impact on the 9-10 injection well would be reduced by the subsurface safety valve and subsurface check valve that it committed to install. It pointed out that the earthquake of April 13, 2001, was felt by its plant and the Spectra Pouce Coupe plant at LSD 5-23-80-13W6M, but there was no damage to any of the plant/pipeline facilities or the Spectra acid gas injection well.

Based on its geological interpretation of the Belloy disposal zone, AltaGas believed that the reservoir pressure would exceed the original formation pressure during injection, but after the disposal well were shut in, the reservoir pressure would start to decrease and should eventually return to the original formation pressure, as pressures began to equalize throughout the greater porosity of the zone.

5.2.2 Views of the Interveners

Although the interveners believed that these applications should not be approved, they asked that a condition of approval be that cement bond logs be run at the two Signalta wells prior to approval.

The interveners said that abandoned wells with cement plugs were probably a greater risk than active wells for gas migrating to surface. They added that older abandonment practices would certainly not meet today's standards.

The interveners were also concerned that if the 9-10 injection well developed a leak, acid gas could flow into the Doe Creek and migrate to where they lived. They said that they were also concerned that the well was in an earthquake region and that an earthquake could damage the well.

5.2.3 Findings of the Board

The Board is not aware of any problems that have resulted from injected acid gas reacting with the formation water or formation matrix at the five Belloy acid gas disposal schemes AltaGas cited.

The Board finds that the 9-10 injection well meets *Directive 051* requirements to ensure that there is hydraulic isolation of the injected acid gas from the surface to the disposal formation.

For other wells that have been cased into the Belloy Formation within the area of possible acid gas migration, the Board believes that it is prudent to determine the integrity of the casing cement before acid gas injection commences. This applies to only two wells, the 10-11 well and the 11-12 well. The Board will condition the approval to require that a cement bond log be run on each well and that AltaGas provide the log results and an assessment to demonstrate that acid gas will be isolated to the disposal zone if it were to reach there.

For the other wells that are not cased and penetrate the Belloy Formation within the area of possible acid gas migration, the Board believes that the cement plugs within those wellbores will be adequate to prevent acid gas from migrating uphole to either groundwater or the surface. In the cases where the cement plugs are above the Belloy Formation, the Board accepts that the Montney Formation is impermeable.

The Board does not believe that acid gas will migrate to the fault line southwest of the 9-10 injection well. It agrees with AltaGas that buoyancy effects of the acid gas will result in migration occurring preferentially updip in the north east direction.

With respect to the concern that earthquakes would result in significant damage to wells, the Board notes the evidence that prior earthquakes in this region have not resulted in damage to wells, pipelines, or facilities. The proposed injection well is about 1700 m from the nearest fault, and if an earthquake were to occur, there is a higher probability of reactivating the existing fault than creating a new fault. The SCADA operation system would help in detecting wellbore damage caused by an earthquake.

The Board believes that over the long term, the Belloy Formation is capable of containing fluids at its original reservoir pressure. The Board also interprets that the pore volume of the Belloy disposal zone is much greater than the volume of acid gas to be disposed, and this should result in the reservoir pressure returning back to the original formation pressure after injection has ceased. For the relatively short timeframe that the well is on injection and the reservoir pressure is above the original formation pressure, the Board does not believe that the caprock seal in the Montney Formation would be breached. This caprock is more than 250 m thick and lies directly on top of the Belloy Formation. If the caprock threshold pressure were exceeded, the extremely low flow rate of fluids into the caprock would not be high enough to displace the sealing fluids during the injection period.

5.3 Applied-for Operating Parameters

5.3.1 Views of the Applicant

AltaGas applied for 80 per cent as the maximum H₂S content in the acid gas stream and expected 65 to 70 per cent to be the normal operating range. AltaGas also requested a maximum acid gas injection rate of 20 10³ m³/d, based on the acid gas containing about 70 per cent H₂S and 30 per cent carbon dioxide (CO₂).

Although AltaGas requested a maximum wellhead injection pressure of 18 megapascals (mPa), based on the hydrostatic pressure of the acid gas in the wellbore and 90 per cent of the fracture pressure in the Belloy Formation, it said that it may need only 7 to 8 mPa to reach the maximum injection rate. It further stated that the maximum operating pressure of the acid gas pipeline would be 10 mPa and that there would be no undue hardship to it if the maximum wellhead injection pressure were set at 10 mPa.

AltaGas stated that the maximum volume of acid gas it would like to dispose was 110 10⁶ m³. This was based on the injection well being at its maximum rate over an expected 15-year life.

AltaGas estimated the initial reservoir pressure to be 21 350 kilopascals (kPa) and did not expect the reservoir pressure to reach 25 mPa while the scheme was on injection. It agreed that limiting

the reservoir pressure to 25 mPa would be a safe threshold for others that might be drilling wells in the area.

5.3.2 Views of the Interveners

The interveners were concerned that the operating parameters for the maximum H₂S content in the acid gas stream and the maximum wellhead injection pressure applied for at the 9-10 injection well did not match the applied-for operating conditions of the acid gas pipeline. They were also very concerned about the injection well being approved for an H₂S content of 80 per cent, since this would be the same concentration that would be flowing through the 2.58 km acid gas pipeline.

5.3.3 Findings of the Board

The Board finds that the maximum H₂S content of 80 per cent for the proposed scheme is reasonable. Of the five Belloy acid gas disposal schemes approved within 90 km of the 9-10 injection well, the maximum H₂S contents range from 55 to 95 per cent. Also, the ERCB is currently reviewing an application for the scheme with the maximum H₂S content of 55 per cent to be increased to 80 per cent. A maximum H₂S content of 80 per cent should provide reasonable flexibility for continued operations at times when low H₂S wells go down or encounter a steeper production decline than expected. Strict safety requirements, including the ERP, are based on this H₂S limit.

The Board believes that the proposed 18 mPa maximum wellhead injection pressure is not necessary at the present time. With the maximum injection rate expected to be attainable at wellhead injection pressures between 7 and 8 mPa and the maximum operating pressure of the acid gas pipeline to be 10 mPa, the Board is prepared to grant a maximum wellhead injection pressure of 10 mPa. AltaGas may apply for an increase if the actual injectivity of the well is less than predicted and a higher wellhead injection pressure is needed to achieve the desired disposal rate.

The Board considers that the 110 10⁶ m³ cumulative volume of acid gas to be disposed is reasonable. A 15-year life for an acid gas disposal scheme is not unusual, and assuming that the plant operates at capacity, the maximum disposal rate of 20 10³ m³/d is expected. Annual progress reports and presentations will be a condition of approval, and any issues in the operations will be examined either when they occur or in the annual reviews, depending on the significance of the issue.

The Board believes that placing an upper limit on the reservoir pressure is necessary to ensure that the reservoir is not overpressured if it is actually smaller than originally estimated and to provide a means to let other operators drilling in the area know that a higher-pressure H₂S zone may be encountered. The Board is, therefore, restricting the maximum reservoir pressure to 25 mPa.

5.4 Monitoring Program

5.4.1 Views of the Applicant

AltaGas stated that the H₂S content in the acid gas stream would be routinely monitored on a monthly basis by conducting gas analyses, and if there were fluctuations in the inlet acid gas to the plant, more frequent gas analyses would be taken.

AltaGas also stated that wellhead injection pressures and the pressures of the tubing/casing annulus would be automatically measured by a SCADA system, and packer isolation tests would be done annually to confirm the integrity of the tubing, casing, and packer. As well, the bottomhole pressure of the reservoir would be measured during planned plant shutdowns every two to four years.

AltaGas said that it would monitor uphole production from the Gething Formation at the 10-23-81-13W6M offset well (10-23 well) annually for acid gas breakthrough by taking a gas analysis. It pointed out that the 10-23 well was the closest uphole producing well to the 9-10 injection well and was a considerable distance outside the expected area of acid gas migration.

AltaGas said that it would monitor the surface casing vents at Signalta's 10-11 and 11-12 wells every three months for the presence of acid gas. It expected that if breakthrough occurred, CO₂ would show up before H₂S, as this had been the experience at other schemes. AltaGas said that it would monitor Kiskatinaw production from the 10-11 and 11-12 wells for H₂S on a continuous basis at the sweet gas plant. Any H₂S in the Kiskatinaw stream would be detected as off-specification gas.

5.4.2 Views of the Interveners

The interveners said that measuring surface casing vent flows on surface casing could not be done on abandoned wells because until just recently the ERCB required wells to be cut and capped by a welded steel plate belowground. Gas would, therefore, have to be leaking outside the surface casing or the pressure inside the casing would have to be high enough to burst the steel plate.

The interveners said that a gas migration survey was a reliable method for detecting an acid gas leak at an abandoned well with cement plugs. This required a grid of shallow holes around the well at surface, collecting gas samples from these holes, and having them analyzed.

5.4.3 Findings of the Board

The Board believes that the H₂S content in the acid gas stream can be effectively monitored by taking samples of the injected gas and conducting gas analyses. A gas analysis needs to occur on a monthly basis, as well as when a change to the plant inlet gas occurs that may result in the H₂S content approaching the maximum limit defined in the approval. The Board does not think it necessary to have real-time monitoring as long as gas analyses are taken as described.

The Board agrees with AltaGas's plan to continuously monitor the wellhead injection pressure and the pressure of the tubing/casing annulus by using a SCADA system. The ERCB also requires all operators of acid gas disposal wells to conduct a packer isolation test yearly to

confirm the integrity of the annular system, and the Board will require such annual tests in AltaGas's case.

The Board does not interpret the Belloy aquifer to be a limited system and, therefore, finds that AltaGas's proposed monitoring of the reservoir pressure is reasonable. Conducting a bottomhole pressure test in the Belloy Formation at the injection well once every four years during plant shutdowns should provide a good understanding of the reservoir's capacity and help ensure that the maximum reservoir pressure defined in the approval is not exceeded.

The Board notes that AltaGas has offered to annually monitor the produced gas from the uphole Gething Formation at the 10-23 well. Although the Board believes that it is very unlikely that acid gas would migrate there due to the distance this well is from the 9-10 injector, the lack of offset wellbores in between, and the Gething Formation being a completely distinct zone, the Board supports this monitoring.

The Board will require AltaGas to run cement bond logs at Signalta's 10-11 and 11-12 wells before injection commences and to prove that acid gas will be contained to the disposal zone if it reaches there. The Board notes AltaGas's plan to monitor the surface casing vents at these wells.

The Board does not believe it necessary to conduct surface monitoring to detect an acid gas leak at the offset abandoned wells that have cement plugs. The Board agrees with the cement plug information that was submitted for the six wells AltaGas reviewed. The plugs preventing uphole flow in these wells have the following cement thickness above the Belloy Formation:

- 00/07-02-081-13W6M, 9 m
- 00/15-02-081-13W6M, 60 m
- 00/06-03-081-13W6M, 107 m
- 00/01-13-081-13W6M, 80 m
- 00/10-13-081-13W6M, 130 m
- 00/01-14-081-13W6M, 45 m

The Board further believes it unlikely that acid gas will migrate to the 00/07-02-081-13W6M well because of its distance from the 9-10 injection well and the fact that acid gas migration will preferentially migrate updip in a northeast direction.

6 PUBLIC SAFETY

6.1 Dispersion Modelling

6.1.1 Views of the Applicant

AltaGas submitted that its proposed facility would comply with all relevant Alberta Ambient Air Quality Objectives (AAAQO). At the hearing, AltaGas presented new modelling results based on a higher flare stack height, which was changed in order to meet radiation requirements.

AltaGas modelled three flaring scenarios: the plant's emergency shutdown (ESD), a pressure safety valve (PSV) at the inlet flaring, and emergency/acid gas flaring. AltaGas said that

although flaring from the low-pressure flare stack was also possible, it did not model that scenario because it would be at a lower H₂S concentration than the ESD and PSV flaring.

AltaGas expected the flow rates for the ESD and PSV flaring to reduce quite drastically over the 10- to 15-minute time periods. The flow rates that it modelled were based on the initial release at the highest flow rates. AltaGas modelled the ESD using an H₂S concentration of 2 per cent because it would be a blended mixture of both the sweet plant and the sour plant when it depressured. It modelled the PSV using an H₂S concentration of 2.5 per cent, rather than the 5 per cent at inlet, as this was a better approximation of actual operating conditions. AltaGas stated that there would be no impact with regard to either economic feasibility or its ability to process the gas if the Board were to approve the project with a limitation of 2.5 per cent H₂S in the inlet gas.

AltaGas stated that the plant would have an automated control system. In the event of an upset, the ESD valves would block in and, in some cases, depressurize the plant. AltaGas studied the quantity and pressure of the contained gas and stated that it would be able to limit the event of a depressurization to between 10 and 15 minutes. It modelled the ESD for an event duration of 10 minutes.

AltaGas anticipated that the PSV flaring would be less than 15 minutes. It based its PSV flare modelling on the large PSV at the inlet of the plant, which would have the largest volume. AltaGas modelled the ESD and PSV using the HYSYS model.

In the event that AltaGas were required to flare acid gas, it stated that it had a procedure in place to reduce the inlet production over time until eventually it would shut in. AltaGas stated that it would shut in the plant after 72 hours of acid gas flaring.

AltaGas's air quality expert, Dr. Ramsay, did not have any concerns about the choice of ISC-PRIME for the modelling and believed that it was applicable in this situation. At the time that AltaGas submitted the application, ISC-PRIME was approved and recommended by Alberta Environment and the ERCB. Dr. Ramsay stated that ISC-PRIME was a very widely applied and well understood model. He also stated that ISC-PRIME provided a very conservative estimate of the concentrations as a result of air dispersion.

Dr. Ramsay stated that the terrain around the AltaGas plant was relatively flat but that the nature of the modelling was such that incorporation of the effect of the terrain features would lead to overestimation from the model.

Dr. Ramsay noted that the Peace River meteorological data was of a very high quality and had been used extensively in projects in this part of Alberta. Dr. Ramsay stated that it was not important that the data set be obtained on site but rather that it adequately represent the range of conditions that could occur at the site. Peace River was also the recommended meteorological data set based on the 2003 Alberta Environment Air Quality Model Guideline. Dr. Ramsay questioned Dr. Du's use of the Prince George upper air meteorological data in Dr. Du's CALPUFF analysis of the proposed plant. Dr. Ramsay agreed that CALPUFF had far more capability to deal with meteorological and topographic issues than the simpler ISC-PRIME model. He also stated that Dr. Du's modelling was probably more conservative.

AltaGas stated that it considered a cumulative assessment but did not model that scenario because there was no significant interaction between industrial sites for nitrogen oxides (NO_x). For sulphur dioxide (SO₂), in the event of a brownout, the ESD flaring scenario could occur. However, the predicted concentrations were below the AAAQO, and therefore AltaGas did not model a cumulative assessment.

AltaGas stated that it was not willing to accept having real-time monitoring made a condition of the licence should the application be approved. AltaGas stated that the interveners' request to have acid gas flaring limited to one hour was not operationally appropriate and not what it modelled. It stated that it would follow the AAAQO and try to flare as seldom as possible. AltaGas committed to having fuel gas automatically added at a 3-to-1 ratio.

6.1.2 Views of the Intervenors

It was the interveners' view that there were deficiencies in AltaGas's dispersion modelling. The interveners were concerned that the modelling was conducted for H₂S concentrations of 2.5 per cent for the ESD and 2 per cent for the PSV, while AltaGas had applied for a maximum licensed amount of 5 per cent. The interveners also noted that AltaGas conducted its modelling using an H₂S concentration of 70 per cent for the emergency scenario, although AltaGas had applied for a maximum H₂S concentration of 80 per cent for the acid gas pipeline.

The interveners' air quality expert, Dr. Du, noted that terrain was not considered as part of the dispersion modelling assessment. Dr. Du stated that incorporating terrain into the modelling would produce different results, although without actually remodelling, it would be difficult to say how the results would be different.

Dr. Du also noted that the application was based on ISC-PRIME, a model that was no longer recommended or supported by Alberta Environment. The interveners stated that a dispersion model with greater capabilities was more appropriate for the area. Dr. Du also noted that the ISC-PRIME model could not handle calm and low wind speeds.

Dr. Du disagreed with AltaGas's choice of meteorological data for its modelling and pointed out that Peace River was 150 km away from the AltaGas facility. The interveners also stated that they did not believe that the meteorological data from Peace River were appropriate for the area. The interveners presented wind data recorded at the Spectra plant, 5 km from the AltaGas plant, and noted differences from the Peace River data. The interveners estimated that winds measured at the Spectra plant were from the west, southwest, and south nearly twice as often as at Peace River.

Dr. Du performed dispersion modelling using the same parameters as in AltaGas's application but with the CALPUFF model and showed predictions of SO₂ over 900 micrograms per cubic metre (µg/m³). Dr. Du stated that, therefore, the flaring did not meet the ERCB low-risk criteria.

While the interveners stated that they wanted the ERCB to deny the applications, they requested that the following conditions be applied should the applications be approved:

- real-time monitoring of SO₂ and H₂S at the interveners' residences,
- no acid gas flaring for longer than one hour, as was modelled in their dispersion modelling, and

- AltaGas be required to have fuel gas at a 3-to-1 ratio automated.

6.1.3 Findings of the Board

The air dispersion modelling in the application was deficient in providing the necessary information. Further details on the NO_x and SO₂ modelling, as well as other clarifications, were required at the hearing.

On the basis of its review of the evidence, the Board agrees with the interveners that terrain must be accounted for in AltaGas's modelling. The Board also notes that Dr. Du's modelling results, which included consideration of terrain effects, showed that the AAAQO objective for SO₂ would not be met by AltaGas's proposed flare system. The AAAQO must be met. Accordingly, the Board will require that AltaGas demonstrate that the AAAQO will be met by providing additional modelling that accounts for terrain effects or modelling based on a different flare system and operational controls capable of achieving the AAAQO.

Although Alberta Environment makes recommendations on which dispersion models to use, it does not necessarily exclude using other models. ISC-PRIME may no longer be recommended by Alberta Environment but could be an acceptable model if used appropriately.

Particularly for flaring, it is important to cover the range of meteorological conditions expected at a site. The Board believes that the Peace River meteorological data set is an acceptable data set for the flare modelling because it covers the range of meteorological conditions expected at the plant site.

6.2 Flaring

6.2.1 Views of the Applicant

AltaGas said that its proposed plant expansion was being designed so that there would be no continuous flaring. AltaGas stated that the sour gas processing capability and associated expansion of the facility would improve operating efficiency and reduce flaring as compared to current operations. It maintained that its application for expansion addressed some of the existing processing and operational challenges that it had faced with the Pouce Coupe plant.

AltaGas submitted that the design incorporated some features that would improve the current gas processing operations at the plant so that the proposed plant would be able to process off-specification sour gas. It stated that the April 2008 and January 2009 flaring events at the plant were the result of off-specification gas coming into the plant and pointed out that the only means to deal with sour gas at the existing facility was to flare it.

AltaGas submitted that it had instituted flaring reduction initiatives at the current plant that included

- shutting in the nuisance sour wells,
- installing
 - air monitors,
 - additional H₂S analyzers,

- flare meters,
 - a purge seal,
 - a flame arrester to reduce overall flare volumes, and
 - new pigging facilities, and
- undertaking a glycol reduction initiative project.

AltaGas stated that it had modified the facility shutdown key so that when the recycle compressor was off line, the facility was shut in to further avoid black tails.

AltaGas submitted that the proposed facility would provide additional equipment, such as a vapour recovery unit and an additional recycle compressor to limit flaring and odours. The vapour recovery unit would be sized for adequate capacity for not only the sour, but also some of the additional sweet recycle lines.

As well, AltaGas stated that it had been working with ATCO on a proposal to modify how it was getting its power in order to reduce the effect of brownouts. AltaGas submitted that the new facility would have a new flare stack to accommodate additional sour processing capacity, as well as additional measures to reduce black tails and flaring from the sweet processing train. It also stated that the sour processing unit would have emissions equipment to eliminate any continuous flaring. It would add new automated controls to the facility with the proposed expansion. AltaGas stated that it would also employ further design considerations to reduce flaring at the facility.

AltaGas agreed that the ERCB had taken enforcement action against it for not measuring the plant's flared volumes and reporting them properly to the ERCB. However, it believed that it had now rectified the situation. AltaGas submitted that in 2008 it developed and implemented a management/flare reduction plan to help mitigate flaring events, in accordance with *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*. AltaGas said that it had added internal reporting software to help its reporting of flared volumes. AltaGas believed that the expansion would allow it to better comply with the ERCB's requirements.

AltaGas admitted to having an igniter problem that led to venting of gas for about two weeks in May 2008. The supervisor misinterpreted *Directive 060* and believed that the gas could be vented. Upon further review of *Directive 060* criteria, AltaGas realized that because the gas could support combustion, it needed to be flared. AltaGas explained that the gas that was vented could not have been sour at any time. AltaGas also stated that there would be no venting with the proposed expansion, as all of the gas would be contained and recycled.

AltaGas committed to having automated fuel ratio control, including acid gas metering and fuel gas metering with automated set points, as well as alarm points. AltaGas further committed to using approximately a 3-to-1 ratio of fuel gas to acid gas.

AltaGas committed to participating in a synergy group that would specifically address flaring notification. It stated that it had undertaken notification of all flaring to area residents and committed to continue to do so.

6.2.2 Views of the Interveners

The interveners were concerned about the amount of flaring that had occurred at the Pouce Coupe plant. They stated that according to the information they had, many of the flaring events were not being reported. They said that they did not have confidence in AltaGas's operating procedures.

The interveners noted two significant flaring events at the AltaGas plant, one in April 2008 and the other in January 2009. These flaring events involved off-specification gas that contained H₂S. According to the interveners, the April 2008 flaring was not reported to the ERCB. The January 22, 2009, flaring event, lasting about 11 hours, was reported to the ERCB 22 hours later. One of the interveners stated that he was the one to report the flaring event to the ERCB, rather than an AltaGas employee. The interveners pointed out that this latest flaring event occurred after the implementation of AltaGas's flare management program. The interveners submitted that AltaGas did not take appropriate action to respond to these flaring incidents.

The interveners were concerned about the compliance record of AltaGas as it related to flaring. They believed that AltaGas was being reactive, not proactive. The interveners were also concerned that the reporting software that AltaGas was using was not working, citing numerous ERCB enforcement actions.

The interveners presented photos of black tails on flares and cited work indicating that black tails were the result of incomplete combustion, which yielded carcinogenic molecules.

The interveners contended that AltaGas was venting from its flare stack in the months of June, July, and August and until September 18, 2008. The interveners stated that the decision to vent rather than flare showed a lack of proper judgement, given that sour gas had previously been detected, and potentially jeopardized the safety of the area residents.

While the interveners stated that they wanted the ERCB to deny the applications, they requested several conditions should the applications be approved:

- real-time monitoring of SO₂ and H₂S at the interveners' residences;
- acid gas flaring for longer than one hour, as was modelled in the dispersion modelling;
- fuel gas at a 3-to-1 ratio automated; and
- prior or immediate notification of all flaring events, regardless of whether it is required by *Directive 060*.

6.2.3 Findings of the Board

The Board recognizes that the residents are concerned about flaring and black smoke at the current AltaGas facility. The Board also recognizes that AltaGas has taken steps to address the concerns of the residents. However, even after implementing a flare management program, a significant flaring event occurred. The Board notes that *Directive 060* requires an operator to notify residents and the ERCB Field Centre of nonroutine flaring exceeding four hours' duration. As a condition of approval, the Board requires AltaGas to advise the ERCB of any flaring events greater than two hours until AltaGas can demonstrate to the satisfaction of the ERCB that it can limit flaring. AltaGas is also required to provide the ERCB with a report every six months, until

a lesser frequency is stipulated, that demonstrates that the measures AltaGas is undertaking are effective in reducing flare volumes and frequency.

The Board recognizes the concern of the residents about venting of gas at the AltaGas facility. The Board notes that AltaGas stated that the gas vented at the facility could not have been sour. The Board also notes that AltaGas recognized that it was in breach of *Directive 060* in this respect and now clearly understands the requirement to burn any gas that will support combustion.

6.3 Emergency Response Plan

6.3.1 Views of the Applicant

In support of its applied-for project and as prescribed by *Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry*, November 2008 edition, AltaGas submitted an emergency response plan (ERP) designed to address emergency response procedures for the production operation phase for the proposed acid gas injection well, acid gas pipeline, and gathering line. It stated that its ERP was designed in accordance with *Directive 071*, as well as with *CAN/CSA-Z731-03: Emergency Preparedness and Response*. AltaGas said that a core value of the company was the health and safety of its people and was the top priority for all AltaGas employees and contractors. It further stated that emergency preparedness was an essential component of its environmental, health, and safety program.

AltaGas stated that the ERCB deemed that the ERP was technically complete against the ERCB's requirements. AltaGas obtained EPZ size using the nomograph tool in *Directive 071*, 2005 edition, the version that was applicable at the time public consultation occurred, and conducted its public consultation based on that EPZ. AltaGas determined that the EPZ size obtained from the nomograph method was larger than the EPZ calculated using the ERCBH2S model (the response zone calculation tool) required by *Directive 071*, 2008 edition. During the course of the hearing, AltaGas stated that it had adopted the EPZ size resulting from the use of the ERCBH2S model for the AltaGas Pouce Coupe ERP. AltaGas indicated that ERCBH2S allowed the licensee to use expected operating parameters (such as H₂S concentration) in place of licensed operating parameters for response zone determination. It indicated that this model also allowed companies the opportunity to calculate response zone sizes using mitigative measures, such as safety valves, and as such was more reflective of the actual response zone size should an incident occur. AltaGas further indicated that if operating parameters changed during the production cycle of the project to a degree that affected the EPZ size, it would have to amend its ERP and obtain approval from the ERCB.

AltaGas indicated that by adopting the smaller ERCBH2S EPZ, one residence would be excluded from the nomograph-based EPZ. AltaGas noted, however, that this resident did not file an objection to its project. AltaGas also indicated at the hearing that it would be installing a surface-controlled subsurface safety valve (SCSSV) on the 9-10 injection well. It contended that installation of this valve would decrease the size of the EPZ for the acid gas injection well. However, it committed to maintaining the larger EPZ of 3.94 km, which was calculated without the mitigative impact on the EPZ size that installation of the SCSSV would have.

AltaGas explained that there were criteria in its ERP that were to be met before the public protection measure of sheltering in place was employed. It further stated that there were specific

criteria in *Directive 071* setting out when the public protection measure of evacuation should be used. It stated that the decision regarding which public protection measure it would use during an incident was dependent upon whichever measure was safer for the public impacted at the time of an incident, should one occur.

AltaGas contended that all residents had a viable egress route should an emergency occur that required evacuation. It indicated that the majority of the roads were county grade roads and high-quality gravel roads capable of year-round use. Upon questioning, however, AltaGas agreed that one of the unlabelled roads displayed on its ERP map that ran west towards the town of Shearer Dale, British Columbia, which some of the interveners would be dependent upon for egress, was not available for egress during the winter months. AltaGas stated that it had access to snow removal equipment if needed. As part of the municipal development approval process that it was required to undergo should approval from the ERCB be granted, it further committed to work with the local authority on road maintenance issues and schedules.

To aid in egress and to address some of the concerns expressed by the interveners, AltaGas committed to labelling range and township roads on the ERP map and said it would redistribute this to area residents. During the hearing, AltaGas also stated that it had prepared egress plans for each resident found within the ERP and committed to having area supervisors contact each resident to discuss these plans and ensure their effectiveness prior to holding a field exercise.

AltaGas stated that it recognized that testing of its emergency response procedures and capabilities was of concern to the interveners. AltaGas indicated that it performed an ERP exercise in spring 2009 and stated that it committed to holding a field ERP exercise prior to commencement of the applied-for operations and annually thereafter. It further committed to try to engage the community's participation in such an exercise. AltaGas stated, however, that no individual would have veto capabilities over an effective ERP rehearsal. It further committed to having the results of the exercise made available to the residents and the ERCB.

AltaGas acknowledged that the availability of its emergency response resources and manpower was of concern to the interveners. It indicated that it retained an emergency response service provider to address this concern and that such resources could respond to an emergency within about 30 minutes of an incident occurring. AltaGas stated that its proposed operations would not be manned 24 hours a day; however, two operators would work 10-12 hour shifts each day. It added that all of its staff were on call should an incident occur.

6.3.2 Views of the Intervenors

The interveners expressed concerns about the accuracy of the ERCBH2S model used by AltaGas to calculate its ERP. They also expressed concerns about AltaGas's consultation process, the inability to shelter in place at high H₂S concentrations for long periods of time, and their lack of egress options. The interveners further contended that the ERP was not compliant with Canadian Standards Association *CSA Z731* provisions and questioned the adequacy of the ERP training that AltaGas employees would undergo. The interveners also had concerns pertaining to SO₂ emergency response practices, cattle safety and evacuation, emergency responder response times in the event of an incident, and inconsistent phone coverage in the area.

The interveners' air dispersion expert, Dr. Du, questioned the accuracy of the size of the EPZ, as well as the validity of the ERCB's response zone calculation tool, ERCBH2S. He contended that

ERCBH2S discards the F_1 and $F_{1.5}$ meteorological conditions that reflect low wind and very stable conditions when calculating response zone size. He stated that these conditions were potentially the worst-case meteorological conditions to encounter during a release and would lead to larger EPZ sizes if used. He stated that more appropriate EPZ sizes would be 5.56 km for the acid gas pipeline, instead of 3.95 km; 4.07 km for the gathering pipeline, instead of 2.97 km; and 6.14 km for the acid gas injection well, instead of 3.94 km.

The interveners expressed much concern over AltaGas's ability to use expected operating parameters instead of actual licensed values when calculating the response zones. Specifically, the interveners noted that while AltaGas applied for an H_2S concentration of 80 per cent on the acid gas pipelines and for an H_2S concentration of 5 per cent for the gathering pipeline, the ERP was designed using concentrations of 70.25 per cent and 2.5 per cent respectively. The interveners contended that it did not seem consistent or reasonable to develop an ERP not using the licensed parameters.

Some interveners claimed that they were not consulted in person about ERP details and were never informed of the various public protection measures in the ERP. As a result, they stated that they did not know what sheltering entailed, what viable alternatives there might be to sheltering, or what public protection measures would be expected during the various emergency levels. The interveners' expert witness hired to address emergency response procedures, Mr. McKutcheon, contended that residents in close proximity to a high H_2S release would be unable to shelter for long periods of time, because the high H_2S concentrations in their homes would be in excess of what the sheltering public protection measure was designed for. Further, the interveners stated that no emergency measures had been discussed with them regarding the safety of their cattle, upon which their livelihood depended.

The interveners also expressed concerns about egress. They questioned AltaGas's ability to aid them in egress when its ERP map was incorrect. The interveners indicated that one road on the ERP map (assumed to be Township Road 815) was actually not maintained during the winter months, thereby making egress impossible by this route. Most interveners were concerned that there had been no discussions with AltaGas about egress routes specific to each residence. Additionally, some residents stated that they would need to reenter the EPZ from Range Road 134 should they have to evacuate, and they questioned how such an egress route could be considered a viable option. As such, they requested that a condition be applied to the licences should the project be approved requiring that each resident be provided with two egress routes out of the EPZ that did not go towards the well or the pipeline. They further stated that this condition should hold AltaGas responsible for the construction of the roads and that they be built to all-weather condition specifications. Additionally, they wanted the ability to egress away from the acid gas injection well to the north.

Mr. McKutcheon stated that the ERP for the proposed operations was not compliant with *CSA Z731* specifications, as the risk assessment document prescribed was not submitted in support of the application. He affirmed that a risk assessment must be conducted in order for the AltaGas ERP to be compliant with *CSA Z731*. He further suggested that training staff on the ERP once a year was insufficient. In his view, such training should occur every six months, with refresher training every quarter. The interveners requested that a condition be applied to the licences, should the project be approved, requiring that the interveners be able to participate in an ERP

exercise, that the ERP exercise be approved by the panel before issuance of licences, and that they have access to the results of the exercise submitted to the ERCB by AltaGas.

The interveners' expert on air dispersion, Dr. Du, questioned why the ERP did not address SO₂, which would result if an H₂S release were ignited. He maintained that SO₂ was more harmful than H₂S and that, therefore, response procedures should be included in the ERP.

The interveners were concerned about response time to this location, as it was quite far from the resources outlined in the ERP. The interveners noted that the emergency response service provider in AltaGas's ERP was listed as being located in Dawson Creek, which was 30 minutes away. The interveners were also concerned about unreliable phone service in the area, and they were unsure they would even be able to be contacted in the event of an incident.

While the interveners stated that they preferred that the ERCB deny the applications, should the applications be approved, they requested that the Board condition any approval such that AltaGas must provide them with real-time SO₂ and H₂S monitoring at their residences.

6.3.3 Findings of the Board

Having reviewed all of the information before it, the Board finds that the ERP submitted by AltaGas in support of its proposed project addresses *Directive 071* requirements and will ensure the protection of the public. The Board recognizes that requirements in *Directive 071* are minimum emergency response requirements. Recognizing this and taking into consideration the concerns expressed by the interveners and the particular circumstances of the area, the Board sees fit to impose conditions pertaining to emergency response upon AltaGas. These conditions are set out in Appendix 2.

The Board notes the testimony presented on behalf of the interveners about the unsuitability and lack of compliance of the ERP with both *Directive 071* requirements and *CSA Z731* specifications. *CSA Z731* guidelines are a national standard for emergency preparedness and response that the Canadian Standards Association has produced, not the ERCB. These guidelines can be used by all companies throughout Canada, regardless of size and incident source, that wish to develop an emergency management program. The annexes associated with *CSA Z731* are not a mandatory part of this standard; rather, they are supplemental materials that companies may use in the development of their ERP. When ERPs are developed specifically to address sour gas emergencies requirements, the only document that the licensee needs to use is *Directive 071*, which is specific to the petroleum industry in Alberta and contains all of the requirements for a licensee to obtain approval for its ERP. During the development of *Directive 071*, the *CSA Z731* guidelines were considered and adopted to the extent that the ERCB believed appropriate.

The Board acknowledges that AltaGas used ERCBH₂S model to calculate the EPZ size in support of its application. The Board also heard evidence from the interveners' expert that the ERCBH₂S model's calculation of the EPZ did not accurately account for all metrological stability model's classifications, specifically those related to calm conditions and low wind speeds (commonly referred to as F₁ and F_{1.5}).

The Board does not agree with Dr. Du that ERCBH₂S does not account for calm conditions and low wind speed (i.e., stable atmospheric conditions). The Board understands that the model is capable of accounting for stable low wind speed dispersion conditions, which occur frequently in

Alberta. However, model predictions of the H₂S concentrations at ground level for these conditions are not accurate, as the turbulence is underestimated, thus resulting in an exaggeration of the hazard zone. Given this, the stability class F₂ is used for F₁ and F_{1.5} conditions. The Board is also cognizant of other conservative ERCBH₂S input parameters, in addition to the atmospheric conditions, that influence the EPZ size. The Board gave significant attention to such inputs as source parameters, thermodynamics, dispersion conditions, and atmospheric concentration fluctuations during the development of the model, and these are considered in the calculation of EPZs. (For further information on this issue, a more comprehensive discussion is detailed within the ERCBH₂S Technical Guide found on the ERCB Web site www.ercb.ca.)

As such, the Board believes that the interveners' expert witness's concerns are invalid. The Board is satisfied that the size of AltaGas's EPZ is accurate and was appropriately calculated.

A similar argument was raised by this expert at another ERCB hearing. In *Decision 2008-135*, the Board also noted the expert's concern and responded similarly on that occasion. Further, the Board provided the link to the ERCB Web page where the technical documentation on the development of the ERCBH₂S model is available for viewing. While the Board encourages parties to review and question provided documentation, it is also of the opinion that questioning of such technical documentation is better served in another forum and not at a public hearing, especially when the argument has been previously rejected and no additional evidence or justification for the alternative view is provided.

The Board further recognizes that AltaGas calculated the EPZ for the acid gas injection well without the mitigative measure of a SCSSV. During the hearing, AltaGas committed to the installation of this valve, which is not required by the ERCB. The Board notes that while such an installation would have the impact of reducing the EPZ size, AltaGas further committed to maintaining the larger EPZ size calculated without the valve. The Board accepts and supports this commitment. (See Appendix 4 for all commitments.)

Throughout the course of the hearing, a substantive amount of time was spent addressing concerns regarding the level of ERP consultation conducted. Some of the specific areas identified by the interveners were the sheltering-in-place public protection measure, egress routes, and livestock safety.

Directive 071 requires notification and consultation for permanent and part-time residents, including those residing on dead-end roads beyond the EPZ where occupants are required to traverse through the EPZ. The Board is satisfied that all residents within the EPZ were consulted on ERP matters to some extent. During this consultation, it is the responsibility of the licensee to review key emergency response information with members of the public who engage or participate in the consultation and to familiarize them with the emergency and public protection measures that they may be required to engage in. With the information presented before it, the Board finds that the quality of information provided about sheltering in place and evacuation, when each measure would be implemented by AltaGas, egress routes, and livestock safety issues may not have been sufficient to allow the interveners a full understanding of them. As such, the Board directs AltaGas to undertake a full and complete consultation and notification program, as detailed in Section 4 of *Directive 071*. Detailed public involvement documentation for each resident is to be updated on the issues or concerns expressed by the interveners and is to be included in the confidential copy of the updated ERP that AltaGas is required to submit to the

ERCB. During this reconsultation program, AltaGas is to follow all applicable requirements in Section 4 of *Directive 071*.

To determine if sheltering in place during an incident is the preferred public protection measure, a sheltering criterion is incorporated in *Directive 071*. Provision of specified information is required to be included in the ERP in order for the ERP to be determined technically complete. While this information is contained in the AltaGas ERP, the Board is not confident that this information was adequately conveyed to members of the public so as to allow for a full understanding of this response procedure. As such, a new public information package is to be developed and delivered to the residents, as required by *Directive 071*, during AltaGas's consultation efforts.

The Board finds that no evidence was presented to support the interveners' contention that sheltering would not be viable when the gas release has high H₂S concentrations. The Board reconfirms its belief that sheltering is a viable public protection option. The dwelling creates a buffer or shield between any gas plume and the individual, providing a level of protection for that individual.

The interveners expressed great concern about egress routes and viability of those routes during an incident. *Directive 071* does not specify the number of egress routes that are to be available for residents to use when evacuating from the EPZ. Nor does it specify that the direction for such egress is to be away from the source of the release. Should an incident occur that results in the release of gas, the configuration and delineation of the plume is dependent upon metrological conditions. To account for all possible wind and resulting plume configurations with a specific egress route could result in the extreme fractionation of the land by road infrastructure.

While the Board is satisfied that one egress route for each resident within the EPZ is satisfactory, it notes that one of the egress routes may be unsuitable during winter months if it is not given proper attention. The Board notes that AltaGas proposed to address that possible situation by having snow removal equipment readily available to it and by committing to working with the local authority to address such issues as part of the municipal development approval process that it must undergo. Recognizing that such agreements are outside the jurisdiction of the Board, inclusion of pertinent aspects of the municipal development approval agreement, specifically the mitigative measures taken to ensure the viability of this road during winter months, are to be included within the updated ERP that AltaGas is required to submit for approval.

The Board notes that the AltaGas ERP map shows all of the EPZs associated with the gathering line, acid gas pipeline, and acid gas injection well. Should an incident occur on one component of the project, the EPZs associated with the remaining components of the project would not necessarily be established. Only the EPZ associated with the source of the release would be activated, eliminating the need for persons to travel through multiple EPZs.

The Board notes that the proposed project is to be located where agricultural and livestock operations are the way of life for many area residents. While the primary purpose of an ERP is the safety of the public, Section 4.4 of *Directive 071* states, "...the licensee is expected to address livestock and pet safety in its public involvement program and ERP, if feasible." As such, should livestock health and safety concerns be expressed by the residents when AltaGas reconducts its consultation program, these concerns are to be discussed with them and included

in the public involvement documentation provided to the ERCB in its confidential copy of its ERP.

Related to the somewhat remote nature of the project's location, the Board heard evidence pertaining to availability of manpower and emergency response resources. AltaGas indicated that the project would be manned 10 to 12 hours per day, but that its staff were on call at all times. AltaGas further indicated that it retained emergency response service providers located in Dawson Creek and/or Fort St. John, British Columbia, to enhance its emergency response capabilities. The interveners believed that over an hour would be needed to get resources out to the incident site. The Board notes that it is the responsibility of the licensee to ensure that measures are in place to account for response time of emergency response personnel should an incident occur. The Board believes that such measures and provisions that AltaGas will employ to account for the response time required for resources, including on-call personnel to be deployed to the area, can be tested through the ERP exercise that AltaGas has committed to holding.

While the Board acknowledges AltaGas's commitment to hold an ERP exercise, the Board will impose a condition that an ERP exercise be held prior to commencement of the applied-for operations. The Board recognizes that AltaGas's commitment exceeds *Directive 071* requirement for ERP exercises, which requires a major exercise once every three years, and not upon start-up of new operations. Further, the Board is pleased with AltaGas's willingness to include area residents in the exercise and agrees with AltaGas that limits to the involvement of the public during this exercise are prudent. The Board, however, does view the involvement of the public in this exercise as an avenue for both parties to gain an appreciation for each other's interests and priorities and hopes that any public involvement in the exercise may foster "good neighbour" relations. The Board requires that AltaGas design its exercise to test the effectiveness of the egress routes for area residents, as well as emergency response resources response times and availability, and expects that key concerns identified by the interveners will be incorporated.

In addition to notification of the ERCB through the Digital Data Submission notification process required for major ERP exercises, AltaGas is to directly notify the Emergency Planning and Assessment Section of the ERCB of the scheduled date of the exercise, allowing sufficient time for ERCB staff to attend the exercise. The ERCB will observe this exercise and determine if the applicable conditions in this decision report are addressed. The Board notes that a description of what exercises may contain is in Annex K of the *CSA Z731* requirements, should assistance in the development of an exercise be needed.

Within 60 days of holding the ERP exercise, AltaGas is required to submit a post-exercise results report to the ERCB Grande Prairie Field Centre, where it will be available for public viewing. AltaGas is directed to *Directive 071* for details on what to include in this report. The Board hopes that sharing such findings will enhance positive relations among all stakeholders.

7 PIPELINE ISSUES

7.1 Views of the Applicant

AltaGas stated that it maintained public safety focus in its design, construction, and operating practices. It developed the Integrity Management Plan and corrosion programs based on CSA

criteria and reviewed and adjusted these programs annually, quarterly, and monthly to ensure that activities were done accordingly.

AltaGas stated that it would undersaturate the acid gas by areal cooling and a chilling process and would further protect the pipeline by a corrosion program involving automated ultrasonic testing scans and corrosion coupons. It did not consider stainless steel pipe necessary, as corrosion was not an issue for dry gas.

According to AltaGas, most of the requirements mentioned in the Bessel and Duncan reports were inherent in the CSA codes and they were already met, given AltaGas's commitments in its design, construction practices, and corrosion mitigation plans.

AltaGas admitted that it had had some corrosion-related incidents in the past, but said that they had already been investigated jointly with ERCB, with modifications made to improve the effectiveness of the corrosion program.

AltaGas stated that the proposed pipelines were designed in accordance with regulatory requirements and CSA codes, and the operating procedures were developed with input from field operators. It indicated that pipeline materials were purchased from a Canadian vendor with heat numbers, markings, and test reports furnished according to CSA requirements. It also confirmed that above-surface components were designed to the appropriate Uniform Building Code, which includes earthquake measures.

AltaGas stated that it would conduct right-of-way inspections and use flow measurement and a SCADA system for leak detection for both pipelines. It would also monitor pressure and perform ultrasonic thickness testing on the acid gas pipeline risers. It stated that the acid gas pipeline was designed to be smart pigable and, depending on the monitoring results, AltaGas might use an in-line inspection tool to monitor corrosion. It also stated that during an emergency, it would purge the acid gas pipeline with sweet gas, displace the acid gas into the well, and then blow the sweet gas back to the plant to flare.

7.2 Views of the Interveners

Interveners expressed concern about internal corrosion and suggested that AltaGas develop a strategy to ensure that dry conditions prevailed. They also suggested that AltaGas use a real-time corrosion monitoring system, corrosion coupons, and fusion bonded coatings and conduct an interrupted closed cell annual survey. They asked that AltaGas be required to use stainless steel for the acid gas pipeline.

The interveners said that the pipe manufacturer should document test data to ensure that pipe and components meet sour service requirements and that pipe bends be designed to accommodate inspection pigs. They also suggested additional corrosion allowance for pipe, and they requested as a condition to the approval, a burial depth of 2 m for the acid gas pipeline. Jim Lowery and Jean Lowery were concerned about safety due to proximity of the injection facilities to the earthquake zone.

The interveners said that AltaGas should use real-time leak detection software and a physical gas detection system to detect leaks. They suggested that AltaGas use an internal inspection tool and a "tethered" pig device to detect corrosion and that it pig, purge, and inhibit the pipelines after

the hydrostatic test. They also suggested that the pipeline be purged with high-pressure natural gas prior to depressurizing to minimize low-temperature effects. Furthermore, as a condition to the approval, they requested that AltaGas be required to conduct quarterly ultrasonic non-destructive examination (NDE) and internal inspections every six months on both pipelines.

7.3 Findings of the Board

The Board notes that *CSA Z662* contains requirements for pipeline integrity management programs, corrosion control, and monitoring. The Board concurs with AltaGas that most of the requirements contained in the Bessel and Duncan reports are already inherent in CSA codes. Given AltaGas's commitment to meet these requirements, the Board is satisfied that AltaGas would be able to deal with corrosion issues and operate the proposed pipelines safely.

The Board accepts that AltaGas's proposed cooling mechanism is capable of removing water from the acid gas. The Board notes that CSA codes do not specifically require stainless steel pipe for sour gas. Furthermore, given AltaGas's evidence on the corrosion programs, the Board finds no compelling reason to require AltaGas to use real-time corrosion monitoring and leak detection or to increase frequencies for ultrasonic NDE. The Board accepts that the proposed pipeline is suitable for the intended service.

The Board notes that CSA codes have specific material and welding requirements for sour service pipe and components. Given AltaGas's commitment, the Board is satisfied that the proposed pipelines are suitable for the intended service. The Board also notes the safety factor inherent in the *CSA Z662* design code and sees no compelling reason to require AltaGas to increase the corrosion allowance or the burial depth of the pipelines.

The Board notes that the earthquake that occurred in 2001 caused no damage to the injection facilities. Further, the Board is not aware of any pipeline incidents caused by earthquakes in Alberta. The Board is satisfied that AltaGas's design methodology has consideration for other additional stresses and strains, including that of an earthquake, on the basis of AltaGas's evidence with respect to the use of appropriate Uniform Building Code.

The Board notes that *CSA Z662* requires regular surveys for leaks and review of leak detection programs for effectiveness. The Board also notes that *CSA Z662* only requires line balance measurements for liquid hydrocarbon pipelines. In the Board's view, the company is required to evaluate leak detection methods and choose the one that it determines to be most appropriate for the service.

The Board notes that CSA and the *Pipeline Regulation* require a company to develop, monitor, and annually evaluate the effectiveness of its corrosion program. *CSA Z662*, Clause 16, also has requirements for corrosion inhibition before line start-up. It is up to the company to determine what corrosion program is effective and at what frequencies ultrasonic and in-line inspections should be conducted.

The Board notes that *CSA Z662* and the *Pipeline Regulation* have requirements for right-of-way inspections, operation, and maintenance, as well as for emergency control and shutdown. The Board accepts AltaGas's proposal to purge the acid gas pipeline with sweet gas and is satisfied that AltaGas's operational procedures meet CSA and regulatory requirements.

8 COMPETENCE OF ALTAGAS

8.1 Views of the Applicant

AltaGas stated that it recognized that it had had some noncompliance events. Its position was that it was not perfect but not worse or better than other companies. With many facilities (6500 km of gathering pipelines, more than 70 gas processing plants, and raw gas capacity of 1.2 Bcfd, of which one-third was capable of processing sour gas), AltaGas conceded that there had been and would be noncompliance events. AltaGas explained that in 2009 the plant had received two low risk noncompliance enforcement actions and 11 satisfactory inspections. It said that its 2009 compliance report card was comparable to the industry average, with a 74 per cent satisfactory inspection rate. AltaGas stated that it had never been on the serious or high risk level-3 enforcement. It stated that ever since it owned the facility, it had had one high risk, four low risk, and 12 satisfactory results.

AltaGas described some of the steps that it had begun to take to address the issue of noncompliance. These steps involved implementing a program of continuous improvement with management plans, internal audits, and compliance issues being a standing agenda item for board of directors meetings.

AltaGas addressed the flaring issues raised at the hearing by explaining numerous measures that it had undertaken to deal with these concerns (see Section 6.2.1).

AltaGas stated that with respect to pipelines, the AltaGas Pipeline Integrity Plan and Pressure Equipment Integrity Management Plan manuals were used to ensure the integrity of its pipeline and pressure vessels for all pipelines and facilities. AltaGas further stated that its Operations and Management Plan (OMP) ensured that the activities of the company were in alignment with applicable regulations and corporate governance, including management oversight.

AltaGas explained that the OMP included components on health and safety, including environmental safety, training and development of employees and contractors, mechanical integrity, operating procedures, and work management. It pointed out that mechanical integrity was addressed in the OMP, which would cover corrosion monitoring. AltaGas stated it had a computerized maintenance management system to generate work orders, which were then delivered to the field to allow tracking.

AltaGas stated that on a monthly basis, management and staff reviewed pipeline integrity manuals at the site-specific facility level to ensure that the manuals were being followed. It indicated that the computer-generated work orders were produced based upon the site-specific activity required in the manuals, with a monthly review by management to ensure that the work orders were completed. AltaGas indicated that the in-house pipeline integrity specialist and third-party corrosion monitoring and mitigation providers conducted quarterly reviews with operations personnel. It also stated that there was an annual audit of the integrity program.

AltaGas stated that it was continuing to work on its corrosion monitoring and mitigation plans and efforts. It cited an instance where a corrosion monitoring and mitigation plan was in place for the plant inlet, but in response to enforcement action it extended the plan farther back into the gathering system to address issues at a certain line segment. The two high risk corrosion events

in the Thornberry and Wabasca areas led to a commitment to a quarterly review of corrosion programs, which had formerly been on an annual basis.

To establish a proactive approach to compliance as opposed to a reactive approach, AltaGas stated that first and foremost it stayed engaged with the community and with the regulator. It indicated that its regulatory compliance management had numerous codes of practice with respect to spill reporting, waste water reporting, packer isolation tests, a *Directive 060* management plan, monthly key indicators that management looked at to deal with permit tracking and auditing to ensure compliance, a regulatory log and subsequent corrective action, a general action plan, and nonconformance reports or tracking.

AltaGas maintained that on an annual and quarterly basis, operation supervisors were required to conduct an audit of facilities. In addition, it stated that the director of field services completed another similar audit on all facilities, while the management team visited sites and performed a similar audit. In addition, it submitted that the internal audit group in Calgary recently undertook an audit of facility licences to ensure compliance. AltaGas indicated that the board of directors received a quarterly report on regulatory compliance, treated each high risk enforcement separately, and expected management to explain the corrective actions taken to prevent similar occurrences. It stated that a safety committee composed of both management and field personnel reviewed operating procedures and processes and reported to its board of directors.

AltaGas explained that many events raised during the hearing were outdated and believed it had been responsive to and respectful of ERCB enforcement actions by taking immediate steps to remedy the situations. AltaGas further explained that the results of steps taken and improvements made showed positive results for the first half of 2009. AltaGas stated that it took compliance matters extremely seriously and believed the Board should consider an applicant's ability to improve its compliance record. It said that the evidence showed a company goal and trend of continuous improvement.

8.2 Views of the Interveners

The interveners explained that they were concerned about AltaGas's compliance history. As part of their evidence, they filed information about the past ten years of field inspection reports and database entries. The interveners examined several events contained in this evidence that they submitted showed AltaGas was not fit to operate the proposed project.

The interveners provided evidence that they said demonstrated a history of incompetence with respect to managing flaring at the plant, specifically in April 2008 and January 2009. They described the absence of a flaring decision tree, the failure to document volumes, and the inability to identify the volumes and H₂S content of flared gas. The interveners pointed to an enforcement action for excess flaring at the Pouce Coupe plant in 2005. In addition, the interveners described other instances at other AltaGas facilities of flare volumes not being accurately captured and reported. They also noted an enforcement action for the Rainbow Lake plant for flaring volume, along with other deficiencies with respect to reporting vented or flared emissions from routine or emergency conditions. The interveners identified calibration and reporting deficiencies. They noted that in 2007 at Sedgwick there was no log of flaring, incinerating, or venting or engineered estimates, in addition to a failure to maintain the appropriate fuel gas to acid gas ratio. The interveners identified 12 instances of enforcement action in relation to flaring dating back to 2004.

The interveners described an inspection in May 2008 that disclosed an absence of flaring notification records, resulting in high risk enforcement action against AltaGas. They said that AltaGas also received a low risk enforcement action for late reporting to the ERCB of the January 2009 flaring event. The interveners also described failures in corrosion monitoring and mitigation and submitted that the identification of leaky valves and the injection of a higher percentage of H₂S than permitted at the Princess acid gas injection scheme demonstrated that AltaGas was not fit to run such a scheme.

The interveners noted that in June 2008, a high risk enforcement letter was sent from the ERCB documenting deficiencies related to lack of a flaring decision tree analysis required for the Pouce Coupe plant since December 31, 2004; inadequate flaring and venting measurements or estimating; record-keeping inadequacies; notification inadequacies; and inaccurate production reporting. They noted that AltaGas was required to submit an action plan within 60 days of the investigation but a response was not provided by the company until July 21, 2008. The interveners pointed out that AltaGas's response was not complete, as it only provided the flare management plan criteria and an outline of how the company was going to train its personnel.

The interveners submitted evidence of enforcement actions taken with respect to spills. They described a few instances in which AltaGas was in persistent noncompliance.

The interveners described an instance of high risk enforcement action being taken for a failure to produce suitable documentation of an appropriate corrosion monitoring and mitigation program, which led to the shut-in of a pipeline between September 2008 and April 2009. With respect to a microbial-induced corrosion incident, the interveners noted that there was another enforcement action for the lack of a corrosion monitoring and mitigation program.

The interveners submitted that the incidents described in their evidence and detailed in their cross-examination were to show a pattern of behaviour that they believed was relevant to the Board's decision. The interveners believed that AltaGas was not being proactive, but reactive, and they stated that this reactive behaviour was not solving the problems. While the interveners acknowledged that flaring was reduced for a matter of weeks preceding the hearing, they were sceptical about it being much improved for all of 2009. Overall, they were concerned that since AltaGas could not run a sweet gas plant properly, it would not be able to run a sour plant properly.

8.3 Findings of the Board

Directive 019: ERCB Compliance Assurance—Enforcement is the ERCB administrative policy and process document for compliance and enforcement. It delineates the ERCB's processes and the required responses when a noncompliance event is identified and enforcement is applied. In general terms, the ERCB's compliance and enforcement system is a risk-based system wherein the risk rating is based on health and safety, environmental protection, energy resource conservation, and stakeholder confidence in the regulatory process. If initial enforcement does not result in compliance or a licensee has been identified as persistently noncompliant, the ERCB will escalate enforcement action in accordance with the framework set out in *Directive 019*. The most serious action that the ERCB will take is to shut the facility in until corrective action is taken. *Directive 019* also allows the ERCB to provide educational opportunities to licensees to strive for a high degree of compliance with ERCB requirements. AltaGas responded

appropriately to each enforcement action noted to the satisfaction of the ERCB. If it had not, the Board would have implemented high risk enforcement action 3 and shut in the facility.

Although AltaGas may have been “reactive,” as contended by the interveners, it has clearly taken steps to be much more proactive in avoiding or minimizing noncompliance events. In the subject case, *Directive 019* is working as intended. That is, AltaGas has improved its compliance record in 2009 and has implemented compliance management systems to ensure operational compliance and proper response to identified noncompliance events, either through its self-audits and inspections, third-party audits and inspections, or ERCB-conducted compliance assessment activities. AltaGas has also completed and proposed equipment upgrades to achieve compliance.

The Board did not have the entire history of AltaGas’s satisfactory and unsatisfactory inspections and follow-up enforcement actions before it. The Board notes, however, that AltaGas’s “report card” indicates that its compliance record is average compared to the industry aggregate. Thus, AltaGas has room to improve its performance. Such performance improvements would, in the Board’s view, improve its relationship with the area residents.

9 PUBLIC CONSULTATION

9.1 Views of the Applicant

AltaGas stated that it commenced its public consultation program in March 2008. It indicated that it publicly advertised its proposed project, mailed information packages that described the project, and offered to consult with anyone who expressed an interest.

AltaGas submitted that it consulted with landowners, residents, government officials, conservation groups, First Nations, and recreational users through the offices of Alberta Sustainable Resource Development (SRD). It hosted a number of meetings, conducted one-on-one visits, and provided responses to a number of questions regarding safety practices, air quality in the region, and the particulars of the application. AltaGas stated that it consulted with about 100 residents and other stakeholders and over 60 industry contacts in the area. As a result of these consultation efforts, AltaGas obtained 25 letters of nonobjection, while 8 parties filed objections.

AltaGas described its consultation events, such as open houses held on March 18 and June 4, 2008. AltaGas explained that it offered on a number of occasions to engage in ERCB-assisted appropriate dispute resolution. At the November 3 and November 24, 2008, meetings, issues were clarified and it was clear that the April 2008 flaring incident and ERCB audit were of great concern to the community. In January 2009, it held a facilitated meeting to address issues that arose in November. In March 2009, AltaGas updated an earlier bulletin to the community from the previous fall. On May 5, 2009, a community consultation event was held with health experts. On June 10, 2009, it held another facilitated meeting.

AltaGas submitted that throughout 2008 and 2009, the various applications were filed and were not materially changed. Although clarifications and minor corrections were provided to the ERCB, the substance of the applications remained the same.

When first asked about the April 2008 flaring incident at a June 4, 2008, meeting, AltaGas stated that it did not have the measurement equipment in place to adequately identify the duration of the flare, and it provided a confused response to Mrs. Wilson. An AltaGas representative publicly apologized to Mrs. Wilson in the community meeting on November 3, 2008, for the manner in which her question was handled and on the basis that the company may have created the impression that it doubted her claim about the flaring event. AltaGas stated that it provided best estimates regarding the flaring incident at a later date and had since installed measurement equipment.

AltaGas explained that about one week after the January 2009 flaring event via letter to area residents, it outlined what it knew about the flaring based upon preliminary estimates. AltaGas indicated that once investigation results were provided to the ERCB, the public was updated on this event in the March update bulletin. It stated that the timing and duration information about the flaring did change between the January estimates and the investigation results reported in the March update.

AltaGas described commitments that resulted from consultation, including changing out the muffler on the third-party compressor near the plant site, a noise survey after the plant was made operational, dust control during construction, a monthly update to residents during construction, and lighting management efforts. AltaGas also indicated that there were some pipeline rerouting efforts. AltaGas committed to ongoing communication efforts, as mentioned, during construction and an annual meeting once the plant was operational.

AltaGas stated that it believed its efforts were sufficient and adequate to fully address the stakeholders' concerns in accordance with ERCB *Directive 056* requirements.

9.2 Views of the Interveners

The interveners submitted that AltaGas inadequately consulted the public on the applied-for project.

The interveners explained that at the June 4, 2008, public meeting, AltaGas maintained that the April 9, 2008, flaring episode of 14 hours' duration did not occur. The interveners stated that the ERCB did not have a report of a flare event when residents called the ERCB on April 15. The interveners submitted that at a meeting of residents with the ERCB in Grande Prairie on May 1, 2008, the ERCB indicated that it had received a report of a flaring event of 6 hours and learned that the residents were aware of a longer flaring duration. The interveners believed that a report should have been automatically filed by the operator. The ERCB conducted an audit, and at that time some residents decided they would not continue in consultations with AltaGas until the audit was completed and reported. As a result, at least two of the residents declined to attend the June 4, 2008, meeting.

The interveners submitted that at the two November meetings, AltaGas said that it did not know the volumes or H₂S content of the flared gas. The interveners stated that AltaGas was not candid when reading from Exhibit B-5 at Saddle Hills on the appeal of the development permit, as it read into the record only the low risk enforcement information and not the high risk enforcement information contained in that letter. If members of the community could have been convinced that the management team of AltaGas was consistently being transparent and straightforward, it

would have been a far different scenario. They stated that they lacked confidence that commitments would be kept.

The interveners stated that they were not comfortable with the information provided to residents, which they found to be inadequate in addressing issues such as flaring and venting. One landowner stated that there were instances when AltaGas promised information or data in response to questions at various meetings but did not follow up on those commitments.

A number of consultation events were detailed in the hearing by the interveners that they believed represented a portrayal of misinformation or a complete lack of information. The delay in the reporting of the January 2009 flaring event to the ERCB made the interveners question whether the implementation of the flare management plan, reported to have occurred in July 2008 for the Pouce Coupe plant and elsewhere by the end of October, was effective or in fact even occurred. Residents stated that they felt uneasy placing their confidence in AltaGas and being asked to accept that there had been a conversion in corporate culture, attitude, and policy. The interveners felt that the actions of AltaGas did not support the contention that it was a good corporate citizen.

One landowner denied the contention that he had refused to meet with AltaGas to discuss the project. He believed that the threat of proceeding to the hearing led to AltaGas dealing with the issue of the black tails. He indicated that just prior to the January 2009 flaring event, the Wilsons were on the verge of working matters out with AltaGas, but that event threw matters off the rails. The Wilsons stated that they were still open to discussion but requested that AltaGas stay away from the ERCB information session on April 29, 2009, in Dawson Creek, following which the residents hired counsel.

The interveners submitted that in order to rebuild trust, they would have to see consistent reciprocation, transparency, and an expression of integrity from AltaGas. The interveners stated that to this point they believed that there had only been broken promises.

9.3 Findings of the Board

The intent of public consultation is to provide an opportunity for the applicant to disclose its project to affected and interested parties. It also allows parties the opportunity to share information and ideas, identify any concerns, and work together to come to a solution. The consultation process also provides an opportunity to build good working relationships among the parties.

The Board heard evidence from AltaGas of consultation by way of one-on-one meetings, open houses, and information packages throughout the hearing. The Board is satisfied that AltaGas has met the minimum requirements for consultation as set out in *Directive 056*. However, the Board also believes that the two major flaring events, one venting event, and the way that AltaGas handled them eroded any trust that the residents may have had and created serious impediments to meaningful consultation and information flow. The Board believes that AltaGas will need to make a substantial effort to rebuild trust with the residents and to resume communications.

The Board notes that in some cases issues associated with sour gas near people cannot be resolved through the hearing process or ongoing dialogue. The Board does, however, strongly

believe that it is clearly in the best interest of all parties to invest in ongoing communication. In that respect, the Board notes that AltaGas has several requirements related to its ERP that will require extensive and excellent communication and consultation with the residents. The ERCB's approval of the updated ERP will depend in part on how well that communication and consultation are done to meet the needs of the ERP.

Further, the Board notes that there is some interest in the formation of a synergy group to discuss and resolve issues on an ongoing basis. The Board notes that there are many such groups active in the province and believes that one in the Bonanza area would be worthwhile. If the Board can assist with the formation of such a group, it would be pleased to help.

10 OTHER ISSUES

10.1 Human and Animal Health, Water Testing, Noise, Lighting, Land Values, and Categorization of Applications as Routine or Nonroutine

10.1.1 Views of the Applicant

AltaGas committed to testing dugout water for the interveners both before and after project construction at the plant site.

AltaGas also committed to conducting an additional noise survey after the plant was made operational as a "proof test" of the modelling that it had done. AltaGas agreed to a comprehensive 24-hour noise survey if the operation was up and running, either in the winter or the summer. In addition, AltaGas stated that it would add a silencer or muffler to a Talisman-owned compressor that was on Talisman's site, immediately adjacent to AltaGas's plant site. AltaGas said that it intended to keep doors and windows closed at nighttime and to install variable frequency drives on its fans to ensure that it met the noise commitments with regard to *Directive 038: Noise Control* requirements.

AltaGas further committed that upon completion of construction, it would have lighting management at the plant. AltaGas also stated that with the plant unattended at night, all except for emergency lights would be turned off.

AltaGas commented that while land values were a concern, the interveners could generate more income because of oil and gas rental revenue on their land.

AltaGas commented that it had submitted its acid gas disposal well application to the ERCB, which stated that during the notification period there had been verbal indication of objection but that discussions were ongoing. AltaGas stated in these discussions during the consultation process that it had not received a formal objection to the disposal well application portion of the project. AltaGas stated that the disposal well had always been a part of the project and that concerns raised by area landowners were directed to the other components of the project.

10.1.2 Views of the Intervenors

The interveners expressed concern that AltaGas did not properly control its runoff water from the plant site. According to the submission by Larry Holthe, the area was totally reliant on snow

runoff into localized dugouts for consumption and general use. He stated that the dugout water was drinking water for him and his family and also the water supply for his livestock. The interveners stated that they would be interested in having their dugout water tested before and after the proposed project by AltaGas.

The interveners believed that noise was an issue at the plant site, especially when the doors were open in the summer. An additional concern brought forward was the noise from a compressor owned by Talisman that was adjacent to the AltaGas plant site.

The interveners stated that they could see the lights from the AltaGas plant site about 20 miles away. They had requested that most lights be turned off at nightfall and only be put on if the plant had an emergency.

The interveners submitted that land values in the area would decrease with a sour gas plant facility in close proximity to their land.

The interveners also submitted that a sour gas plant in the area would affect their personal health, as well as the well-being of their cattle. Larry Holthe stated that the cattle took in a certain amount of selenium when they were grazing, but sulphur dioxide could prevent that intake of selenium. Mr. Holthe said that his cattle must have selenium, either by vaccination or through their diet; otherwise the cattle could get White Muscle disease. Mr. Holthe also stated that AltaGas had not specified any contingency plan to him to provide assistance for his livestock in the event of an emergency.

The interveners expressed concern that the acid gas disposal scheme could be submitted in a routine fashion.

10.1.3 Findings of the Board

The Board notes that AltaGas has committed to water testing for the interveners both pre- and post-construction.

With respect to the concerns about the impact of the lease site on water drainage, the Board notes that this matter is not under the ERCB's jurisdiction, but rather that of Alberta Environment. The Board will contact Alberta Environment to inform it of the residents' concerns.

The Board notes that AltaGas has committed to conducting a noise survey after the project has been completed. In addition, AltaGas has consented to add a silencer or muffler to the Talisman-owned compressor on Talisman's site, immediately adjacent to AltaGas's plant site. The ERCB has regulations for noise control in *Directive 038* and AltaGas accepted that they must meet the ERCB requirements.

The Board notes that AltaGas has committed to lighting management at the plant site and that all of the lights will be turned off at night, except for the emergency lights.

The Board notes the interveners' concerns that land value would decrease in close proximity to a sour gas facility. The Board does not have jurisdiction over land compensation issues. The Board finds that there was no evidence presented to support any conclusion regarding the impact of sour gas facilities on land values.

The Board would like to clarify the categorization of applications as routine and nonroutine. As set out in *Directive 056*, all licence applications are submitted to the ERCB as either routine or nonroutine. An applicant chooses the type of application submission based on the responses entered on *Directive 056* schedules. Nonroutine applications are classified as either self-identified nonroutine or ERCB-designated nonroutine. Nonroutine licence applications are further designated as participant involvement nonroutine or technical nonroutine.

An applicant files a routine application when supporting documentation demonstrates compliance with all technical and participant involvement requirements, there are no outstanding concerns/objections, the landowner agrees in writing to proceed to the Surface Rights Board, or a relaxation from the regulatory requirements is not requested. An application is considered nonroutine if the applicant cannot meet an ERCB requirement, chooses to apply for a relaxation from an ERCB requirement, or has been directed to file a nonroutine application by the ERCB. An applicant must file a nonroutine application for reasons of participant involvement if public/industry consultation and notification requirements are not met; outstanding concerns/objections, whether inside or outside distances detailed in *Directive 056*, were received by the applicant during the participant involvement program or anytime prior to filing and remain unresolved; or the applicant is unable to obtain written confirmation from the landowner that the only outstanding concern is compensation.

Whether or not an application is submitted routine or nonroutine, the Board reviews the application to ensure that all required supporting documents to the application are submitted and complete so that the application meets all of the technical requirements.

Dated in Calgary, Alberta, on December 22, 2009.

ENERGY RESOURCES CONSERVATION BOARD

<original signed by>

J. D. Dilay, P.Eng.
Presiding Member

<original signed by>

J. D. Ebbels, LL.B.
Board Member

<original signed by>

J. G. Gilmour, LL.B.
Acting Board Member

APPENDIX 1 HEARING PARTICIPANTS

Principals and Representatives (Abbreviations used in report)

AltaGas Ltd. (AltaGas)
J. E. Lowe

Witnesses

H.J. Heinrichs P.Eng.
S. Ward
J. Bracken
S. Hamnett
D. Kitteringham
Dr. S. Ramsay, P.Eng.
of psoda Consulting

Intervenors

J. Lowery
B. Crandall
D. Brown
B. Wilson
J. Wilson
L. Holthe
R. Secord
D. Bishop

A. Bessel, P.Eng.
S. Du, Ph.D.,
of California Air Resources Board
D. McCutcheon, P.Eng.,
of the University of Alberta

Energy Resources Conservation Board staff

K. Stilwell, Board Counsel
R. Reid
J. Petersen
C. Ravensdale
K. Williams
J. McIntosh, P.Eng.
K. Ostermann
S. Lee, P.Eng.

APPENDIX 2 SUMMARY OF CONDITIONS

This section is provided for the convenience of the readers. In the event of any difference between the conditions in this section and the material in the main body of the decision, the wording in the main body of the decision shall prevail.

Conditions generally are requirements in addition to or otherwise expanding upon existing regulations and guidelines. An applicant must comply with conditions or it is in breach of its approval and subject to enforcement action by the ERCB. Enforcement of an approval includes enforcement of the conditions attached to that licence. Sanctions imposed for the breach of such conditions may include the suspension of the approval, resulting in the shut-in of a facility. The conditions imposed on the licence are summarized below.

Conditions relating to the acid gas disposal well:

- 1) AltaGas is to conduct a packer isolation test yearly to confirm the integrity of the annular system.
- 2) AltaGas is to conduct a bottomhole pressure test in the Belloy Formation at the injection well once every four years during plant shutdowns.
- 3) AltaGas is to run cement bond logs at Signalta's 10-11 and 11-12 wells before injection commences and prove acid gas will be contained to the disposal zone if it reaches there.

Condition relating to the gas processing plant:

- 4) AltaGas is to advise the ERCB of any flaring events that are greater than 2 hours in duration. AltaGas is also required to provide the ERCB with a report every 6 months, until a lesser frequency is stipulated, that demonstrates that the measures AltaGas is undertaking are effective in reducing flare volumes and frequency.

Conditions relating to the ERP:

- 5) The Board directs AltaGas to undertake a full and complete consultation and notification program as set out in Section 4 of *Directive 071*. Detailed public involvement documentation for each resident is to be updated with the issues and concerns expressed by the interveners, and is to be included in the confidential copy of the updated ERP that AltaGas is required to submit to the ERCB.
- 6) A new public information package is to be developed and delivered to the residents as required by *Directive 071* during AltaGas's reconciliation efforts.
- 7) Pertinent aspects of the municipal development approval agreement specifically regarding the mitigative measures taken to ensure the viability of the road during winter months are to be included in the updated ERP that AltaGas is required to submit prior to ERP approval.
- 8) Should livestock health and safety concerns be expressed by the residents when AltaGas reconducts its consultation program, these concerns are to be discussed with them and

included in the public involvement documentation provided to the ERCB in the confidential copy of AltaGas's ERP.

- 9) AltaGas must hold an ERP exercise prior to commencement of the applied-for operations:
- AltaGas must design its exercise in such a way as to test the effectiveness of the egress routes for area residents and emergency response resources response times and availability. It must incorporate key concerns identified by the interveners. In addition to notification of the ERCB through the Digital Data Submission notification process required for major ERP exercises, AltaGas is to notify the Emergency Planning and Assessment Section of the ERCB directly of the scheduled date of the exercise, giving sufficient time to allow ERCB staff to attend the exercise.
 - AltaGas is required to submit a post-exercise results report within 60 days of holding the ERP exercise. This report is to be submitted to the ERCB Grande Prairie Field Centre, where it will be available for public viewing.

APPENDIX 3 SUMMARY OF COMMITMENTS

The Board notes that AltaGas has made certain undertakings, promises, and commitments (collectively referred to as commitments) to parties involving activities or operations that are not strictly required under ERCB requirements. These commitments are separate arrangements between the parties and do not constitute conditions to the ERCB's approval of the applications. The commitments that have been given some weight by the Board in making its decision are summarized below.

The Board expects the applicant to comply with commitments made to all parties. However, while the Board has considered these commitments when arriving at its decision, the Board cannot enforce them. If the applicant does not comply with commitments made, affected parties may request a review of the original approval. At that time, the ERCB will assess whether the circumstances regarding any failed commitment warrant a review of the original approval.

- 1) Conduct quarterly meetings with the community as part of a synergy initiative.
- 2) Undertake to engage the community to participate in the ERP exercise.
- 3) Provide notification of all flaring events.
- 4) Work with county on road maintenance; approach the county and participate in upgrading the road as required under their municipal development approval.
- 5) Have two operators at the plant for 10-12 hours a day.
- 6) When requested by the landowner, test dugout water before and after construction of the project.
- 7) Speak to landowners about soil testing to assess a reasonable protocol.
- 8) Conduct a comprehensive 24-hour noise survey once the operation is up and running.
- 9) Add a silencer or muffler to the Talisman-owned compressor that is on Talisman's site, immediately adjacent to AltaGas's plant site.
- 10) Implement dust control measures during construction.
- 11) Provide a monthly update to residents during construction.
- 12) Ensure lighting management at the plant after construction is completed.
- 13) Hold annual meetings with the community after the plant is operational and construction is complete.
- 14) Monitor uphole production from the Gething Formation at the 10-23 well annually for acid gas breakthrough by taking a gas analysis.
- 15) Have automated fuel ratio control, including acid gas metering and fuel gas metering with automated set points as well as alarm points; use approximately a 3-to-1 ratio of fuel gas to acid gas.



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File No.:

July 2, 2009

VIA EMAIL

ACKROYD LLP.BURNET DUCKWORTH & PALMER LLP

Barristers & Solicitors
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Attention: Ms. Debbie Bishop Attention: Mr. John Lowe

Dear Madam and Sir:

Re: Altagas Ltd.

- Application No. 1579080 – Sour Gas Plant**
- Application No. 1579141 – Acid Gas Pipeline**
- Application No. 1580400 – Gathering Pipeline**
- Application No. 1567595 – Acid Gas Injection Well**

On June 24, 2009 and July 2, 2009 the Energy Resources Conservation Board (ERCB/Board) Panel (the Panel) hearing the captioned applications considered the Notice of Motion received by the Board on June 19, 2009 from Ackroyd LLP, counsel for Interveners, which sought a few remedies.

The Panel has asked the undersigned to record its decision and reasons.

The Panel had for its consideration:

1. The Notice of Motion;
2. The Response of Burnet Duckworth & Palmer, counsel for Altagas Ltd. (Altagas) dated June 19, 2009;
3. The Reply submission of Ackroyd dated June 22, 2009; and
4. The written objections of the Interveners linked to Applications Nos. 1579080, 1579141 and 1580400.

The Motion

The Motion seeks four forms of relief:

1. An Order from the Panel directing Altagas to provide a risk assessment of the gas plant modifications, the gathering pipeline and the acid gas pipeline from the gas plant to the proposed acid gas injection well;

2. A direction that a hearing into Application No. 1567595 for the acid gas injection well be held in conjunction with the other three applications;
3. An Order directing Altagas to complete an Area Development Plan and a proliferation assessment in accordance with section 8.2 of Directive 56; *Energy Development Applications and Schedules* and Interim Directive 2001-03; and
4. An adjournment of the hearing currently scheduled to commence July 14, 2009 until the requested information has been provided and the Interveners, their expert witnesses and counsel have had time to review the information and make submissions on the information.

The risk assessment sought is one which would identify risk zones in accordance with the land use planning instrument developed by the Major Industrial Accident Council of Canada (MIACC). The Interveners rely on instances in which the Board has directed the preparation of such a study in recent years on other applications involving sour gas and sour oil developments.

The Interveners point out in relation to the acid gas injection well that to not hear that matter at the same time as the other three applications will promote and require two separate hearings and rely upon the jurisdiction of the Board to require an applicant to submit all applications associated with a sour gas development at one time.

In support of the Motion for an Area Development Plan and a proliferation assessment, the Interveners submit that the studies are necessary in order for the Board to determine if the proposed development is in the public interest.

The Response of Altagas

Some of the key points made by Altagas in its response are as follows.

With respect to the provisions of a risk assessment relating to MIACC criteria, Altagas relies primarily upon the fact that such assessments are not part of the Board requirements and that Altagas has prepared and filed an Emergency Response Plan in accordance with the Board's Directive 71: *Emergency Preparedness and Response Requirements for the Petroleum Industry*.

In response to the request that the hearing be expanded to include the application for the acid gas injection well, Altagas argues that the Interveners have had a full opportunity to review this application and have not expressed objection, that prior to June 19 there had been no request to add this application to the public hearing and that, alternatively, Altagas would be prepared to answer questions about the injection well at the hearing or the application could be heard at the presently scheduled hearing provided there was not an adjournment.

Altagas submits that it has already prepared and filed a proliferation assessment with its applications and that all reasonable efforts have been made to consult with the interveners with respect to the project. It also points out that the Board did not request that an area development plan be submitted in accordance with section 8.3.3 of Directive 56.

The Reply of the Interveners

In their reply, the Interveners point out that the proposed concentration of H₂S (upwards of 80%) is higher than in other applications in which a MIACC risk assessment was ordered by the Board and contend that without such an assessment, the Board cannot assess public interest.

In reply to Altagas' contention that potentially affected parties have had a full opportunity to understand the acid gas injection well application and have not objected to it, the Interveners assert that they had

assumed the well application was part of the hearing and are concerned that their objections have not been linked to the acid gas injection well application. They point out that further correspondence, presumably in opposition to the application, has now been submitted to the Board.

The Interveners point out that the application for the acid gas injection well was not included with materials provided to them and as such they have not been able to send the materials out to the experts retained to review the matters on behalf of the Interveners. They point out the difficulties in addressing the application with one week remaining prior to the deadline for the submission of the Interveners which is June 30, 2009.

The Decision of the Panel

The Panel is satisfied that it is not necessary here to require an affidavit from the Interveners in support of the present Notice of Motion. The Motion and the record of the applications are sufficient for it to understand the facts underlying the Motion.

Risk Assessment in Accordance with MIACC Criteria

The Board understands well the hazards and risk associated with sour gas and has considered the appropriate hazards and risks in its ERCBH2S model and the development of its suite of regulatory requirements. Risks are managed through requirements such as setbacks, emergency response plans developed pursuant to Directive 71, the testing of such plans at public hearings and regulatory requirements for facility or equipment specifications and safety equipment. Whatever the level of hazard and risk, an Applicant to the ERCB must show a capability and planning to take appropriate safeguards and to effectively mitigate the hazard and risk.

The Panel cautions against focusing only upon the concentration of H₂S in a proposed pipeline or a proposed injection well, in this case upwards of 80 per cent. That figure alone is short of real meaning as it is the maximum potential H₂S release volumes or release rates that can have greater significance on the placement of safety equipment such as emergency shut down valves and the development of emergency response plans. The proposed acid gas pipeline is designated as a Level 3 facility and the Board has substantial experience with such facilities.

Risk assessments are not a requirement of the ERCB in conjunction with applications for sour gas development. Counsel for the interveners cited and there exist previous instances³ of the Board having directed applicants for sour gas development projects to file risk assessments in evidence. In addition there exists a recent Board decision in which a Panel declined⁴ to order the production and filing of a risk assessment in connection with a proposed sour gas development in circumstances where the applicant had already retained an expert to perform such risk assessment work. In that instance the Panel left it up to the applicant to decide whether or not it wanted to voluntarily produce such evidence.

The Panel is not satisfied that a risk assessment prepared in accordance with the MIACC criteria, and the land use planning tools and setback distances relied upon by MIACC, is necessary to its understanding of the hazard and risk inherent in a proposed project such as the present one of Altagas. The Board is very familiar with the concepts of hazard and risk related to H₂S applications, and is capable of fully assessing such hazards and risks in the context of an application or hearing. The Board application requirements are designed to ensure that applicants provide all relevant information related to hazards and risks imposed by a project. In reviewing hazards and risks, it is important to understand mitigative measures. By reviewing

³ **Decision 2006-116** West Energy Ltd.; **Decision 2008-18** Highpine Oil and Gas Limited; **Decision 2008-88** Highpine Oil and Gas Limited; **Decision 2008-135** Highpine Oil and Gas Limited.

⁴ Letter Decision dated October 14, 2008 – Petro Canada Oil and Gas re Sullivan Creek

the hazards and risks that exist, together with mitigation measures, the Board can undergo a full assessment of whether a project can proceed while ensuring the safety of local citizens.

It must be noted that risk assessments do not take into account many mitigation measures that are required by the Board for such developments (such as emergency response plans). Because of this fact, as well as the highly technical nature of such reports, a risk assessment can have the effect of not materially adding to the Board's understanding of the hazards & risks imposed by a project, while at the same time alarming local citizens by providing them with an inflated view of the real risks imposed by a proposed facility.

The Panel declines to order the preparation and delivery by Altagas of such a risk assessment.

Acid Gas Injection Well Application No. 156795 and Adjournment Request

The Panel is satisfied that Application No. 156795 for the proposed acid gas injection well at LSD 9, Section 10, Township 81, Range 13, West of the 6th Meridian should be heard in conjunction with the applications of Altagas for the associated plant expansion, gathering system and acid gas pipeline. Upon receipt of the Notice of Motion of the Interveners, the Response submission of Altagas and the Reply of the Interveners, the Panel revisited whether the various objections filed in relation to these matters should be considered as objections to the acid gas injection well. These objections should be read and interpreted reasonably broadly so that an unrealistic demand for precision is not placed upon area residents in the crafting of their written objections. While the various objections may not specifically raise issues related solely to the proposed acid gas injection well, the Board concludes that they should be treated as objections to the project as constituted by the four subject applications as a whole.

The Panel holds that a consequent adjournment of the scheduled July 14, 2009 hearing is thereby necessary as it is fundamental that the Interveners be given a reasonable opportunity to acquaint themselves with the relevant application materials, instruct counsel and have experts review the materials. The Panel is satisfied that current scheduling does not provide that fair opportunity.

Furthermore, there should generally not be two hearings in relation to a project when one hearing would be sufficient to deal with all of the applications. The Panel is cognisant that unreasonable regulatory delay is to be avoided but notes that were there to be granted an approval of the gathering line, the plant expansion and the acid gas pipeline, Altagas would not be in a position to process sour gas until the acid gas injection well was approved and equipped in any event. A second and distinct hearing in relation to the proposed injection well would not tend to speed the process.

The submission deadline of June 30, 2009, currently imposed upon the Interveners, is also adjourned.

Proliferation Assessment and Area Development Plan

A proliferation assessment is a necessary part of Altagas' application. This requirement is found in Section 8.3 of Directive 56 and obligates an applicant to explore alternatives that may exist in an area to the development of new and additional sour gas facilities facilities.

Altagas has filed evidence relating to its proliferation assessment. The proliferation assessment evidence has been considered by technical staff at the ERCB and the applications have been determined to be technically complete. However the Panel has its own information requests of Altagas listed below. It is, of course, open to the Interveners to test the sufficiency or adequacy of the proliferation assessment and consultation thereon in cross-examination and provide their own relevant evidence on the issue of proliferation at the hearing. Notwithstanding that the applications have been deemed technically complete, the applications may stand or fall on the sufficiency of the materials submitted.

An Area Development Plan is a plan which is to be considered by an applicant and one which can be ordered produced by the Board. Such plans are not a mandatory requirement. During the consideration of the present applications by staff at the Board it was decided that it was not necessary to require Altagas to develop and submit an Area Development Plan. In the Notice of Motion, no effort is made to support the request for an Area Development Plan based upon the considerations which are to be applied as set forth in the May, 2004 *Recommended Practices for Sour Gas Development Planning and Proliferation Assessment*. Counsel for the Interveners has not satisfied the Board that it is necessary to revisit that decision for the proposed project.

Information Requests of Panel Regarding Proliferation

1. What information can Altagas provide on the incremental pipeline and compression requirements that would be necessary to connect the sour gas sources dedicated to the AltaGas expansion to the Spectra plant? Please describe for the Board what additional facilities and pipelines would be required?
2. What is the net land footprint of the each options? Please describe the relative land disturbance between the AltaGas's project and an alternative that would use the Spectra plant?
3. How many residences are in sour gas gathering pipeline, sour gas plant and acid gas injection scheme ERPs for each option? Please describe the relative effects on residents, particularly the number of residences affected by EPZs, for AltaGas's proposed project relative to an option that would route the sour gas to the Spectra plant?
4. Based upon its communication with Spectra, what information can Altagas provide concerning the likelihood that Spectra might actually expand its facility and what information does it have with respect to whether the facility and acid gas injection scheme could be expanded sufficiently to serve the current Spectra supply area plus gas from the area that the AltaGas Pouce Coupe plant intends to serve? What information has been made available on the Spectra plant expansion option?
5. What capacity, if any, has Spectra stated it would provided for sour gas that the AltaGas Pouce Coupe modification would process? What is the relative timeline to operational start-up of a possible Spectra expansion relative to the proposed AltaGas project?
6. Would there be any emissions from compression and/or dehydration facilities needed to route the gas for processing at the Spectra plant that would need to be considered in determining which option has the least environmental impact?

The Panel requests that Altagas answer the foregoing questions by **4:00 p.m. on Friday, July 17, 2009**.

Rescheduling of Hearing

The Panel has decided that the hearing will now be scheduled to commence at **9:00 a.m.** (British Columbia time) in Dawson Creek on **Tuesday, August 11, 2009**. A Notice of Rescheduling of Hearing will issue soon.

The Interveners' Submissions will now be due two weeks in advance of the hearing by **4:00 p.m. on Tuesday, July 28, 2009**.

Yours truly,

KURT W. STILWELL
Board Counsel

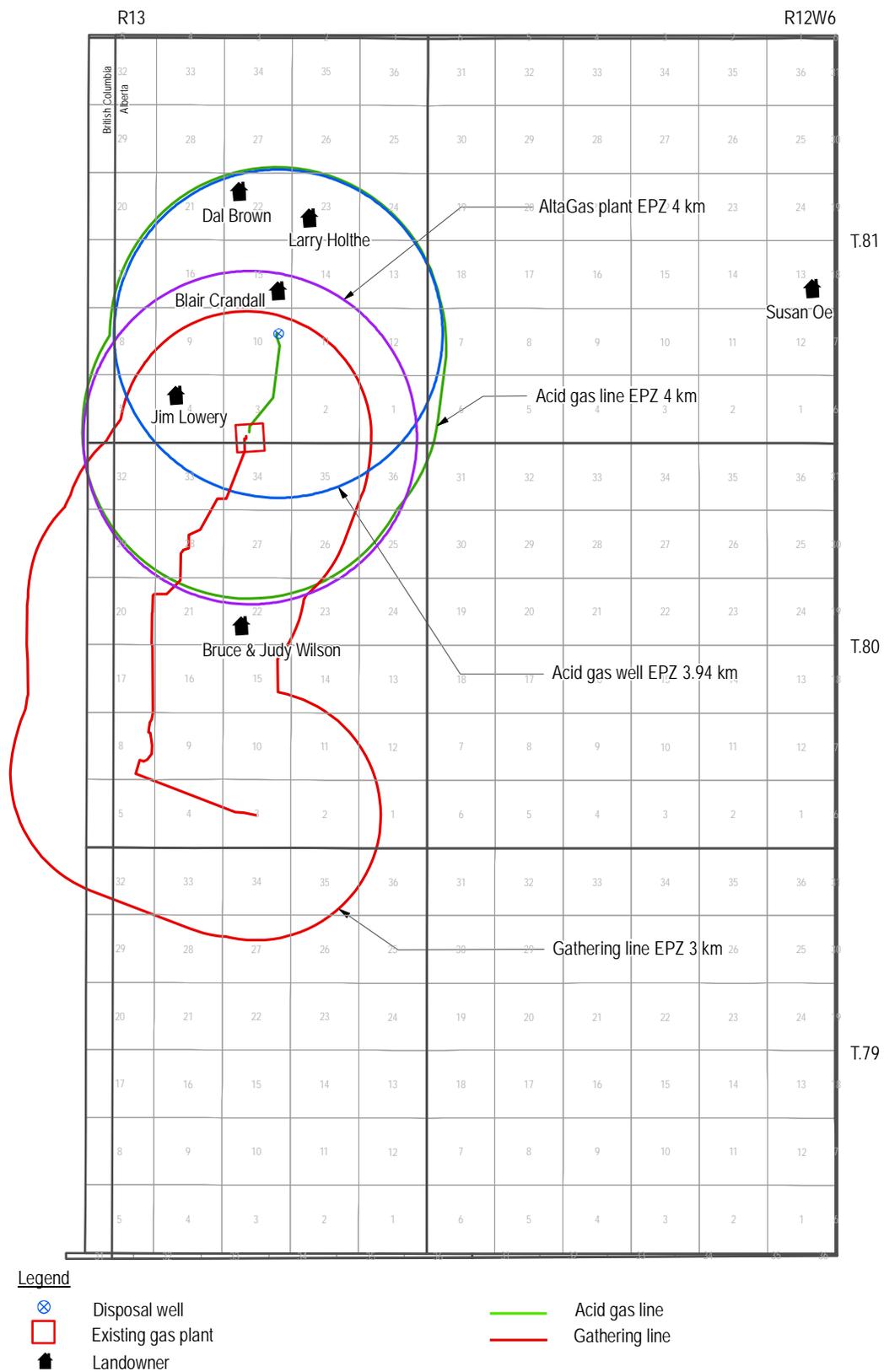
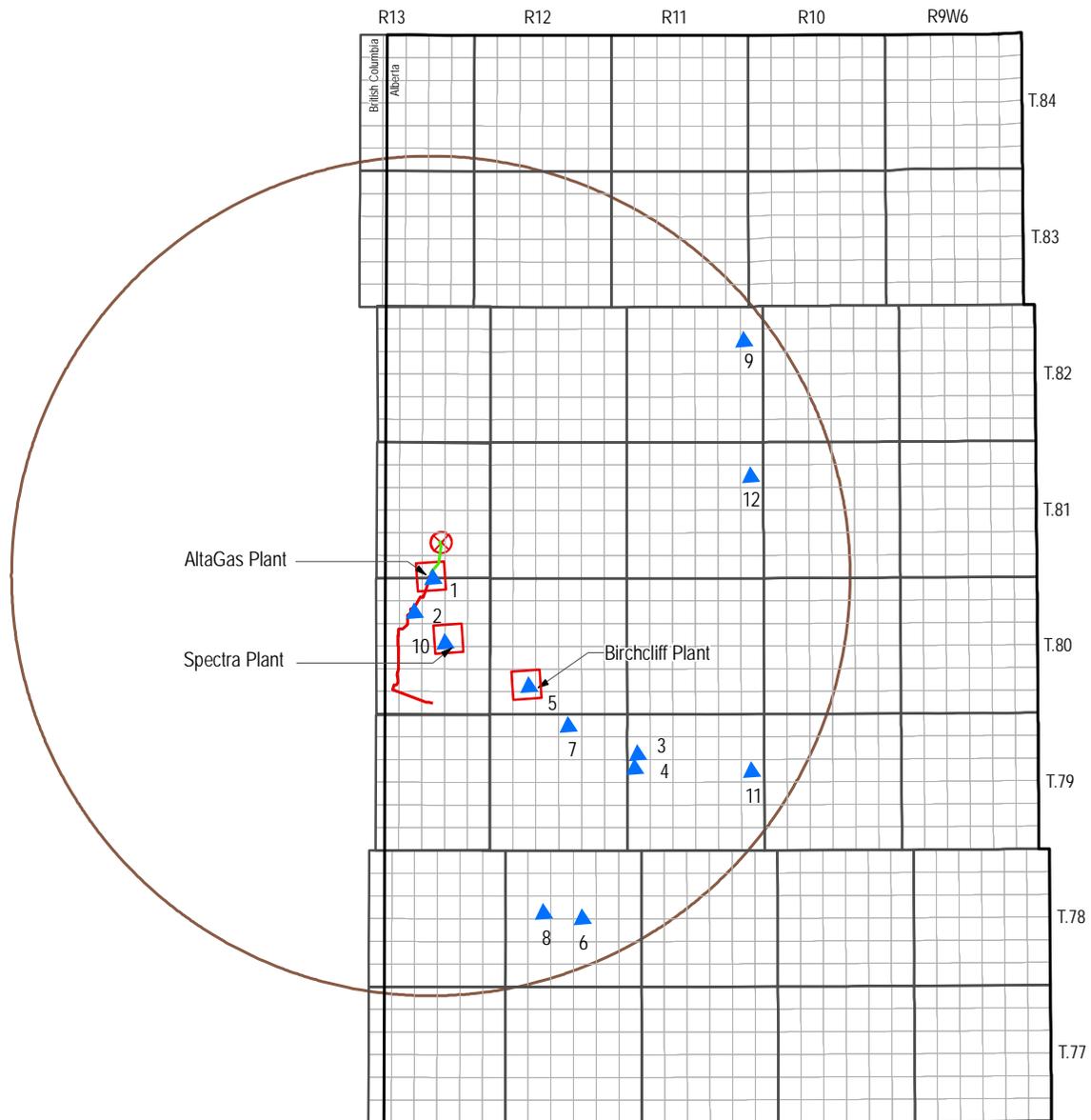


Figure 1. Facility, well, and pipelines applied for by AltaGas and the residences of the interveners



Legend

- ▲ Sour facilities within 30 km
- Gas plant
- ⊗ Disposal well
- 30 km facility buffer
- Acid gas line
- Gathering line

Plant companies:

- 1 Alta Gas Ltd.
- 2,3,4 Arc Resources Ltd.
- 5,6 Birchcliff Energy Ltd.
- 7 Canadian Natural Resources Ltd.
- 8 Enerplus Resources Corp.
- 9 Provident Energy Ltd.
- 10 Spectra Energy Midstream Corp.
- 11,12 Talisman Energy Inc.

Figure 2. Gas processing plants considered by AltaGas