ERCB Energy Resources Conservation Board
Calgary Office 640 – 5 Avenue SW Calgary, Alberta, Canada T2P 3G4 Tel 403-297-8311 Fax 403-297-7336 www.ercb.ca

News Release

FOR IMMEDIATE RELEASE

ERCB ANNOUNCES CHANGES IN RESPONSE TO COURT OF APPEAL RULING

Board fixes error and implements changes; lifts suspension on sour oil and gas licensing

Calgary, Alberta (*November 13, 2009)* The Energy Resources Conservation Board (ERCB) has announced that it has corrected its own error regarding emergency response modelling parameters, following its review of a recent Alberta Court of Appeal ruling. As a result of this correction, the ERCB is immediately lifting the temporary suspension on issuing licences for sour oil and gas wells, pipelines, and facilities that it announced on November 3, 2009.

On October 28, 2009, in its decision in the matter of *Kelly et al v. ERCB and Grizzly Resources Ltd.*, the Court determined that residents within a Protective Action Zone (PAZ) could be directly and adversely affected by applications to which a PAZ relates. The Court also stated that applicants must include these residents in their participant involvement programs.

"The ERCB thanks the Court for its direction on this matter, and apologizes for any confusion or concern our error may have caused," said ERCB Chairman Dan McFadyen. "We also want to assure all parties that despite this error – and its subsequent correction – public safety has been in no way lessened or compromised at any time. The ERCB still has the most stringent sour oil and gas regulations in the world."

To correct the error, the ERCB changed the endpoints used to calculate PAZs. Previously, PAZs were erroneously calculated to be larger than Emergency Planning Zones (EPZs). The ERCB model used to calculate EPZs is the most scientifically advanced emergency planning model available. It was never intended, nor was it necessary, for any PAZ to exceed the size of a corresponding EPZ.

The ERCB will issue errata to *Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry* and *Directive 056: Energy Development Applications and Schedules* to reflect this correction. The ERCB has also released *Bulletin 2009-41*, which outlines revisions to its requirements and process regarding applications for sour oil and gas development.

- 30 -

This news release, backgrounder, *Bulletin 2009-41, Directive 056,* and *Directive 071* are online at www.ercb.ca.

For more information, please contact:
Bob Curran
ERCB Communications
Ph: 403-297-3392
Email: bob.curran@ercb.ca

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Backgrounder

Alberta Court of Appeal decision

In the matter of *Kelly v. Alberta (Energy Resources Conservation Board)*, the Alberta Court of Appeal found that parties residing in the protective action zone (PAZ) for a facility could be directly and adversely affected by an application for approval of a project to which the PAZ relates. The Court also found that applicants must include residents within the PAZ in their participant involvement programs under ERCB *Directive 056 Energy Development Applications and Schedules*.

In light of the Court of Appeal decision, the ERCB temporarily suspended issuing licences for sour oil and gas well, pipeline, and facility applications until it determined how it would respond to the ruling.

ERCB Emergency Response Planning and Protective Action Zones

Development of sour oil and gas resources (products containing hydrogen sulphide, also known as H_2S) is significant in Alberta and has been occurring safely for over 50 years. The ERCB has a comprehensive public safety regulatory system that includes requirements for industry emergency response plans (ERPs) to respond to incidents that have the potential to impact the public and the environment.

A key component of an ERP is the concept of an emergency planning zone (EPZ). The EPZ is a geographical area surrounding a well, pipeline, or facility containing hazardous product (e.g., sour gas) that requires specific emergency response planning by the licensee. If there is surface development within the EPZ, a site-specific ERP is required to be submitted to the ERCB for review and approval. Examples are dwellings, public facilities (including campgrounds and places of business), and any other surface development where the public may gather on a regular basis. Site-specific ERPs are not required for every drilling, production, or pipeline operation in the province. When a site-specific ERP is not required, a corporate-level ERP is used by the licensee to handle emergency events.

The ERCB also defines a PAZ as an area downwind of a hazardous release where outdoor pollutant concentrations may result in life-threatening or serious and possibly irreversible health effects on the public. This PAZ concept is not unique to the ERCB and is applied throughout North America by first responders as a way of prioritizing emergency response actions. This backgrounder clarifies the ERCB's requirements pertaining to this emergency response concept contained in ERCB *Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry* (November 2008). *Directive 071* is available on the ERCB Web site www.ercb.ca.

The ERCB has developed a sophisticated computer program (ERCBH2S) that licensees must use to calculate the EPZ and estimate the PAZ. The computer model performs complex calculations that include many safety factors to ensure that the EPZ and PAZ distances are highly protective.

An important value used to define the EPZ boundary is the *hydrogen sulphide endpoint*. The health effects from exposure to this potentially harmful substance depend on a combination of concentration and exposure time. The endpoint in ERCBH2S accounts for lower exposure concentrations taking *much* longer to reach the *same* effect as higher exposure concentrations. This effect is called a toxic load, and for a gas such as H_2S the short-term exposure to higher concentrations is much more dangerous and needs to be given priority in emergency response planning.

The EPZ endpoint applied in ERCBH2S is 100 parts per million (ppm) H_2S for an exposure time of 60 minutes.

- According to the Alberta Health and Wellness report *Health Effects Associated with Short-Term Exposure to Low Levels of Hydrogen Sulphide (H2S)—A Technical Review (October 2002)*, the weight of evidence suggests that death or other serious adverse outcomes following short-term exposure in the concentration range of interest (i.e., 60 to 100 ppm) is unlikely. This report can be read in its entirety on the Alberta Health and Wellness Web site www.health.alberta.ca.

- In addition to the review by Alberta Health and Wellness, the ERCB conducted its own literature review of the peer-reviewed literature. This report is available on the ERCB Web site www.ercb.ca. The ERCB concluded from its review that an endpoint of 130 ppm for an exposure time of 60 minutes was not likely to result in unconsciousness. However, to ensure that additional caution was applied in determining the size of EPZs, the exposure concentration was lowered to match the Alberta Health and Wellness findings described above. The lower endpoint concentration combined with the other safety factors in ERCBH2S result in a highly protective EPZ.

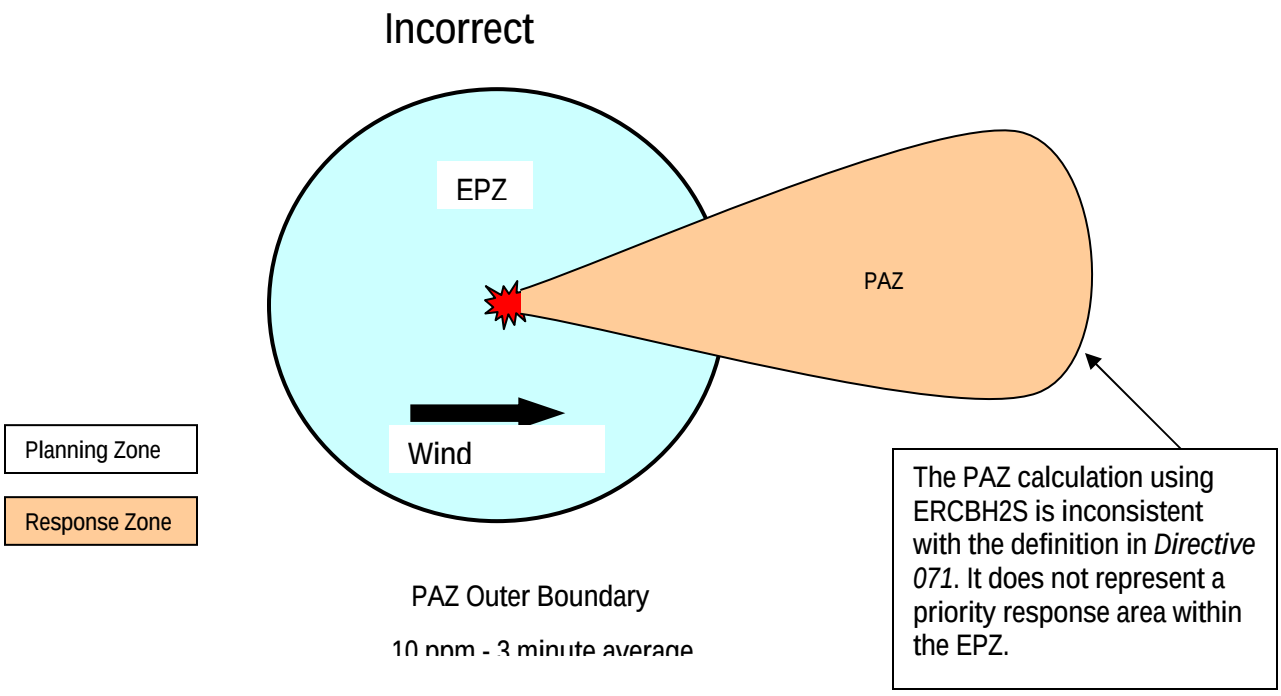
- The ERCB's extensive consultation process to develop ERCBH2S allowed stakeholders the opportunity to present their views. Ultimately, the ERCB followed the direction on this matter from Alberta Health and Wellness, the provincial body that sets health-related policy in this province.

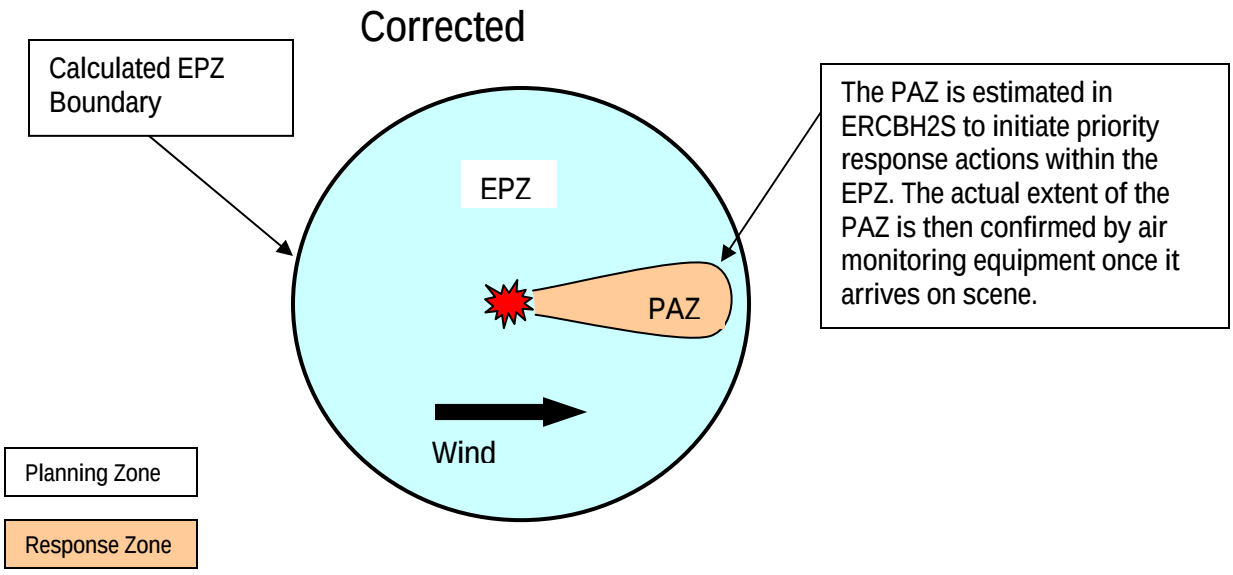
Emergency management is a complex subject, and defining the geographical area that an ERP is to cover is a difficult task. Whereas the EPZ endpoint value (100 ppm for 60 minutes) is part of this sophisticated calculation, in a real life emergency ERCB licensees are required to take public protection measures at any sign of a problem that might expose the public to a harmful substance. For an airborne release involving H_2S, actions such as sheltering indoors or evacuation are taken based on the incident and specific conditions at the time. *Directive 071* provides requirements for taking action at the first indication that a release may occur and when actual measured concentrations of H_2S range from 1 ppm to 10 ppm (and above). These low levels are used even though the scientific peer-reviewed literature indicates that higher exposures may be tolerated without serious health effects. These monitored levels requiring action are again based on advice from Alberta Health and Wellness.

By contrast, the PAZ is for response purposes only. The actual PAZ can only be determined at the time an incident is occurring and is based on current wind conditions, the product released, and other factors. The PAZ is the area *within* the EPZ in which parties may be at most risk of exposure during an incident, and it is intended to assist responders to focus and prioritize their emergency response efforts there. However, it may take time for air monitoring equipment to arrive on scene to determine air quality. To assist in emergency preparedness so that first responders know an approximate distance within the EPZ where initial, prioritized, and immediate public safety actions can be taken, the PAZ is estimated by using ERCBH2S. As stated above, the PAZ value is then confirmed as actual air quality conditions are measured.

In review of the Alberta Court of Appeal's October 28, 2009, decision, the ERCB discovered that it had erred and has now amended the PAZ endpoint (130 ppm for 60 minutes) to match the definition and intent in *Directive 071*. This change means that the PAZ is now contained *within* the EPZ, as was always intended. As stated above, Alberta Health and Wellness supports the methodology to derive the PAZ endpoint, and the ERCB believes that this toxic load is fit for the purpose of a prioritized response within the EPZ. The impact of this change is illustrated in the following figure.

Figure 1: Illustration of Protective Action Zone





PAZ Outer Boundary 130 ppm H_2S for 60 minutes