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Page 1 of 14

September 17, 2010

Mr. Stephen Smith  
ERCB Applications Group

Dear Mr. Smith,

**EnCana 02-13-27-22 W4M, ERCB Licence # 165755, in breach of ERCB Directives 035 and 056**

**Failure to offer to test water wells prior to filing well licence application**

Directive 035, s. 2.1.1 reads:

*Prior to filing a new well licence application for CBM above the BGWP, an applicant must offer to test any active water wells and observation wells within a 600 metre (m) radius of the proposed CBM well. If no such wells are identified within a 600 m radius, the applicant must offer to test the nearest water well or observation well within a 600 to 800 m radius. In either case, the applicant must document the process in accordance with AENV Standard.*

*When filing a well licence application, an applicant must attach a cover letter that states its intent to drill a CBM well above the BGWP and that the offer to test water wells and observation wells was made, as required by the AENV Standard. (emphasis added)*

Additionally, the applicant must submit a survey plan or map that shows all active water wells and observation wells locations referred to above. GPS coordinates of active water wells and observation wells are required on maps.

EnCana submitted the application on August 31, 2010, and the ERCB granted a licence on September 1, 2010. The letter from EnCana offering testing was not sent until September 2, 2010. As a result, EnCana was in breach of s. 2.1.1 and potentially misinformed the ERCB regarding whether it had made the required offers for testing.

EnCana's survey plan submitted to the ERCB with the application does not show or include the required GPS coordinates of all active water wells, and I am unable to find any cover letter stating the intent to drill a CBM well above the BGWP, and that the offer to test water wells was made.

Directive 035, s. 2.1.1 also reads:

CBM wells above the BGWP licensed on or after May 1, 2006, must meet the AENV Standard

EnCana wrote in their lettering offering to test my well, dated September 2, 2010, that if I do not respond within 10 days EnCana will record this as me not being interested in participating in the Directive 035 water well testing program. Directive 035 and Alberta Environment's Baseline Testing Standard do not limit time for water well owners to respond to company offers to test or allow for companies to use implied refusal. Instead, the Standard states that companies must get refusals in writing. This copied directly from the Standard:

If a landowner/occupant does not want his/her water well tested, the company must obtain written confirmation from the landowner/occupant that testing is not required. If written confirmation is refused, a company representative must diarize landowner/occupant's refusal and the CBM developer must deliver to the landowner/occupant, and retain a copy of, a notice describing this protocol.

EnCana further writes that both Alberta Environment and the ERCB will recognize the company's non-compliance with the Standard. I have serious concerns about that. Is EnCana the energy regulator in Alberta?

With regard to Compliance Assurance, Directive 035 goes on to say:

“the EUB will close any well licence applications that target completions above the BCWP that do not meet the requirements of this directive”.

#### **Failure to provide required information as outlined in s. 2.2.2. of Directive 056**

Under Directive 056, the Applicant is required to provide information to those who live near proposed projects. According to Directive 56 section 2.2.2, EnCana was required to provide an information package that provides “specific details of the proposed energy development”. Further, s. 2.2.2 goes on to say:

- 16) The following details must be included in the applicant's project-specific information package:
  - b) Emergency contact number of the applicant/operator
  - e) Need for the proposed development and explanation of how it fits with existing and future plans
  - f) Type of substance(s) that will be processed, transported or drilled for, . . .
  - h) discussion of the potential restrictions regarding developing lands adjacent to the proposed development, such as setbacks . . .
  - l) proposed project schedule for construction and start-up. . .

EnCana failed to provide appropriate details for the above information in their information package.

#### **Failure to address all questions and concerns prior to filing an application as required by s. 2.3.3. of Directive 056.**

According to s. 2.3.3 of Directive 056:

42) The applicant *must attempt to address all questions and concerns/objections regarding the proposed development prior to filing and during the review of the energy development*

*application*, regardless of whether the party involved is inside or outside the radius of Tables 5.1, 5.4, 6.1, 6.2, and 7.1.

Similarly, under s. 2.3 of Directive 056:

19) *the development and implementation of the participant involvement program must occur prior to the filing of an application with ERCB Facilities Applications. This includes: distribution of a project specific information package and the ERCB public information documents, responding to questions and concerns discussing options, alternatives and mitigating measures.*

On August 17, 2010, I wrote a letter that raised a number of concerns and questions regarding proposed development at well sites in 15-12, 2-13, 8-13 and 9-13 all in 27-22-W4M. EnCana did not respond to this letter until September 2, 2010, three days after EnCana had applied for licence for well 100/02-13-027-22W4/00 – a well that will be directionally drilled under my land.

EnCana's response did not address many of my key questions and concerns.

#### **Unaddressed questions:**

1. Will EnCana adhere to Wheatland County's Land-Use Bylaws for these developments?
2. The July 2010 update by Wheatland County and Dillon Consulting of the *Rosebud Area Structure Plan* states: "The County recognizes that managing Rosebud's environment means looking beyond the Hamlet's boundaries. The County will protect Rosebud's environment by discouraging industries in the area that could cause noise pollution and reduce air quality...."
  - a) Will EnCana adhere to these environmental protection plans?
  - b) Will EnCana consult with the people of Rosebud Hamlet? EnCana wrote that it consulted with Wheatland County. This is not consulting with the affected citizens in the Hamlet. In the past on similar such gas developments, the County did not forward the information they received from a petroleum company to any Hamlet residents. In 2004 and 2005, when the community voiced concerns about EnCana's many unmitigated impacts (one of which was lack of community consultation and honesty, and failure to adhere to ERCB Directives), EnCana promised repeatedly in public meetings that the company would consult directly and in person with the hamlet about new gas development plans around the hamlet.

EnCana also promised to address negative cumulative impacts and update the community with a regular newsletter. VP Mr. Stacy Knull wrote in EnCana's October 2004 Newsletter that EnCana is:

"looking at new ways of communicating and have developed this newsletter as a way to keep you informed about the issues that matter to you."

To the best of my knowledge, EnCana provided two newsletters and then stopped fulfilling this promise. This is important because all the new developments EnCana notified me about are within 1.5 km of Rosebud Hamlet.

3. I understand that well 2-13-27-22 W4 will be directionally drilled to a bottom hole that is located near my residence and under my land.
  - a) What standards of practice does EnCana apply when directionally drilling and fracturing under private property? In my view, EnCana responded generically stating that the company complies with all laws, rules and regulations put out by both the ERCB and Alberta Environment related to directional drilling and completions, yet, EnCana is already in breach of ERCB Directives before a rig is even in place. In order to understand EnCana's impacts to my property, I need the actual practices to be specified to me in detail, not in deflection with promises that might be broken. My property might be damaged or someone might be killed if there is an explosion, frac out, or blow out, especially given how dangerously contaminated Rosebud's aquifers already are after EnCana fractured them and the many serious petroleum industry caused explosions, leaks and blowouts that occur, including home explosions, fatalities and injuries from gas migration.
  - b) Does EnCana have any information on the relative risk to groundwater and gas leakage to surface from directional drilling and fracturing as compared to vertical drilling and fracturing? EnCana responded to me that they do not, even though the ERCB publicly lists deviated drilling as a major factor in causing gas well leakage.<sup>1</sup>

The cumulative risk of deviated drilling in a river valley (the ERCB lists topography as an other factor in gas well leakage) with already dangerous levels of gas migration in Hamlet and private citizen water wells greatly concerns me.

After EnCana industrially fractured Rosebud fresh water aquifers (in secret), dramatic changes were observed in area water wells, including mine. The amazing thing is that EnCana proclaimed in public meetings that the company would never do such a dreadful thing as fracture into the aquifers we get our water from or even near them.

Alberta Environment found dangerous levels of methane contamination in the hamlet water supply and private water wells. In 2006, two different labs matched fingerprints of gases sampled by the regulator in three area water wells with those from EnCana's shallow gas wells at Rosebud. (Alberta Environment did not give copies of this damning data to Dr. A. Blyth for him to include in his reviews; they also did not give him copies of the damning fingerprint data obtained on the hamlet water).

Reuters recently reported<sup>2</sup> that EnCana is to provide safe alternate water to Pavillion Wyoming residents with much less organic hydrocarbon contamination than we have at Rosebud. At Pavillion, the highest level of methane contamination found by the

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<sup>1</sup> <http://www.co2captureandstorage.info/docs/WBI3Presentations/SBachuTWatson.pdf>

<sup>2</sup> <http://www.reuters.com/article/idUSTRE6807KG20100901>

EPA<sup>3</sup> in private water wells is about 800 ug/l. At Rosebud, it's about 80 times more at 66,000 ug/l<sup>4</sup>. And that before a research panel<sup>5</sup> reported that the gas concentrations in Rosebud water are being *under* estimated by a factor of three when total dissolved gas pressure is not measured.

Reuters<sup>6</sup> reported EnCana's Doug Hock saying that the Pavillion methane contamination was naturally occurring because it was at "extremely low" levels. He was further reported saying:

"If this was related to oil and gas production wells, we would be seeing much higher levels of methane."

What does that say about Rosebud's very high methane levels? And what would the EPA make EnCana do if they found the very high levels of methane and isotopic fingerprint match that we have in our water at Rosebud?

The ERCB and others have reported that as well density increases, so does gas migration. I am concerned with cumulative gas migration and other impacts from EnCana drilling, perforating and fracturing more gas wells in my community after having already perforated and or fractured so many gas wells more shallow than 200 m (one as shallow as about 100 m), many with limited surface casing and no groundwater protection assessments. I am also concerned with the gas migration and cumulative risks from EnCana's three existing, multiple perforated and fractured deviated wells in Section 13.

EnCana wrote me that the company repaired their extremely shallow perforations of the 5-14 gas well by cementing them. This would not repair our fractured aquifers. I am concerned about cumulative gas migration impacts in an area with industrially fractured aquifers, and unresolved community wide water contamination, and the Alberta Government breaking its Legislature made promise (February 28 2006) to provide safe alternate water to adversely affected families "now and into the future". Please refer to the March 19, 2008 Media Alert and my March 19, 2008 letter to Alberta Environment, attached in my supporting documents for more details.

- c) In what way does the existence of a directionally drilled well under private property affect future uses of that private property? For example, would a landowner be restricted from drilling deep water wells or geothermal wells over a directionally drilled well bore? EnCana responded that there would be no affect to future use of my property but then wrote that I would need to include locating any directional wellbores before I drill on my land. If I must do this, it means that my surface use *is* affected by EnCana's 02-13 deviated well bore under my land. I need details and careful consultation to understand the loss of use of my land and associated impacts.

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<sup>3</sup> [http://www.epa.gov/region8/superfund/wy/pavillion/Pavillion\\_GWInvestigationARRTextAndMaps.pdf](http://www.epa.gov/region8/superfund/wy/pavillion/Pavillion_GWInvestigationARRTextAndMaps.pdf)

<sup>4</sup> Lauridsen Water Well Complaint Review by Dr. Alexander Blyth, Alberta Research Council, 2007

<sup>5</sup> <http://environment.alberta.ca/documents/Coalbed-Methane-Science-Panel-Review-Report.pdf>

<sup>6</sup> <http://www.foxbusiness.com/markets/2010/09/09/encana-says-drilling-did-taint-wyoming-water/>

- d) I understand that using Reverse Circulation Centre Discharge Drilling, available in Alberta, reduces the damage done to formation, thus reducing the need for acidizing and fracturing. This in turn, may reduce the risk of gas migration. Has EnCana considered Reverse Circulation Centre Discharge Drilling for these new wells? EnCana wrote back that it has considered it, but chose not to use it. I request more consultation on this important mitigative drilling technique. I need to know why EnCana would not want to use a method that prevents formation damage and gas migration and reduces many risks and damages in an area that has known serious and community wide gas migration.
8. I understand that EnCana plans to drill wells at 15-12, 2-13, 8-13 and 9-13 all in 27-22-W4M, which are close to my home. Accordingly, I would appreciate the following please:
- a) The intended drilling programs for these wells, including amount of water used, source of that water and disposal of drilling muds, produced water and frac flow back.
  - b) Information regarding any intended hydraulic fracturing activities, including the acidizing and fracturing fluids that will be used, types of perforations used and the depths of all perforations and fractures, including in relation to the base of groundwater protection.
  - c) Information on the chemicals that will be used at the above wells in all processes associated with the wells, including pesticides for weed control. Please include Material Data Safety Sheets (MSDS's) and Transportation of Dangerous Goods details for these chemicals. EnCana's website<sup>7</sup> states that the company supports chemical disclosure, and that MSDS's are available. Why tell the world that EnCana will be upfront and accountable about toxic chemicals, when the company is not upfront and accountable with directly and adversely affected Alberta landowners?
  - d) Are these wells targeting shales?

I need direct answers from EnCana to these questions, especially because the Fish Scale Shales (silts) are reportedly highly radioactive. I am very concerned about radioactive drilling and fracture waste disposal and impacts to the subsurface formations that Alberta Land Titles claims I own "to Hell"<sup>8</sup>.

The ERCB reported in Shallow Fracturing Directive 027 that industry does not know what shallow fractures do; the B.C. Oil and Gas Commission recently sent out a safety advisory reporting that industry does not know what deep fractures do and that there have been serious deep fracture incidents in the Horn River Shale gas play. This raises many concerns for me. EnCana will not tell me what depths they plan to perforate and fracture or deviate their well at in the subsurface of my property. Their 02-13 application states that surface casing will be set to 172 m, meaning that EnCana might be planning to fracture at less than 200 m requiring assessment prior to fracturing.

9. Please send me a copy of EnCana's and its subcontractor insurance policies. EnCana responded claiming this is confidential information, but I need copies of this insurance or at the very least the policy number(s) and insurance company name in case of a fracture accident

<sup>7</sup> <http://www.encana.com/>

<sup>8</sup> <http://www.servicealberta.ca/589.cfm>

or rig explosion causing death, pollution and or damage to my property and subsurface formations that I own. Numerous ERCB staff have told Albertans, myself included, in public meetings that it is our responsibility to ask questions, get educated, and persist in getting our questions answered and information that we need to protect ourselves, our families and community, businesses, and property. The insurance company names and copies of the policies are required so that I may write the insurance companies to verify and get more information. There have been many water contamination cases in EnCana's areas of operation, promises broken by EnCana, and record fines to EnCana. There have been many terrible accidents recently, including the BP offshore explosion in the Gulf that killed 11 workers, three serious recent EnBridge incidents and many past ones, spills and endless other spills, leaks and ruptures, including the deadly San Bono natural gas pipeline rupture. There have been gas well explosions and blowouts that resulted in worker deaths and serious pollution and damages during drilling and or fracturing. There have been home explosions and deaths, and many cases of methane migrating into water and soils in the US that the energy regulator investigated and concluded were caused by gas drilling and or fracturing<sup>9</sup>. They summarized the dangers:

Over the last decade these stray gas migrations have caused or contributed to at least 6 explosions that have killed 4 people and injured 3 others. In addition the threat of explosions has forced 20 Pennsylvania families from their homes, sometimes for months. At least 25 other families have had to deal with the shut-off of utility service or the installation of venting systems in their homes and at least 60 water wells (including 3 municipal supplies) have been contaminated.

10. I understand that the Congress of the United States, like me, is concerned about the potential impacts of hydraulic fracturing and related activities on human health and the environment. Accordingly, the Congressional Subcommittee on Energy and Environment recently asked EnCana to provide it (by August 6, 2010) with detailed information regarding past hydraulic fracturing and associated activities in the United States and any allegations of harm to human health or the environment, and contamination of drinking water<sup>10</sup>. Given the concerns that have been raised in Alberta, including concerns that I continue to deal with, I ask please that EnCana voluntarily release to me the information Congress is requesting and similar information regarding EnCana's fracturing, completing and stimulating, and associated activities in Alberta, notably when and where EnCana injected diesel or other petroleum distillates. I attached a copy of the letter from the Congress of the United States for your reference. EnCana responded saying the company intends not to inject diesel or petroleum distillates and thus what I asked for does not relate. In my view, this is a deflative response.

Congress investigating EnCana's hydraulic fracturing, and allegations of water contamination and harm to health and environment is very serious and relates directly to many of my outstanding concerns and questions. In my view, this request needs to be appropriately, honestly, completely and respectfully addressed. It is vitally and directly in the public interest of Albertans.

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<sup>9</sup> [http://www.dep.state.pa.us/dep/subject/advoun/oil\\_gas/2009/Stray%20Gas%20Migration%20Cases.pdf](http://www.dep.state.pa.us/dep/subject/advoun/oil_gas/2009/Stray%20Gas%20Migration%20Cases.pdf)

<sup>10</sup> <http://energycommerce.house.gov/documents/20100719/Letters.Hydraulic.Fracturing.07.19.2010.pdf>

11. Will EnCana provide gas samples for composition and isotopic fingerprinting of the gas wells before commingling and core samples of the formations I own in the subsurface that EnCana intend to fracture?
12. Will EnCana release to me the tower reports on their shallow gas and deviated wells in my community, especially on the 5-14-27-22-W4M gas well that fractured my community's drinking water aquifers, and the aquifer that supplies my well?
13. Will EnCana allow me to choose the consultants to test my well? If yes, thank you; if not, why not? I have watched EnCana consultants testing water wells. I am very concerned by the lack of experience and supervision, and inappropriate sampling.
14. Will EnCana send me EnCana's and its third party consultant's gas sampling protocol (including safety requirements) for testing water wells contaminated with natural gas?
15. Will EnCana send me the company's safety protocol for surveying property that might have natural gas migrating to surface, and in the water well to be surveyed?
16. Will EnCana send me a letter from Occupational Health and Safety, approving EnCana's safety protocol for surveying and testing my water well?
17. Will EnCana assume legal responsibility in the event of a fire, explosion, injury or fatality during the surveying and testing of my well? Bruce Jack of Spirit River, Alberta and two water well testers were severely injured and hospitalized when the gas contaminated water well they were testing exploded, causing significant damages. A photo is attached in the supporting documents, for your reference.
18. If EnCana ties in these many new wells to the compressors near my home, how is EnCana going to mitigate the increased compressor noise?
19. How wide spread is the special gas well spacing application? Please provide detailed maps with the boundaries, if applicable, beyond the County of Wheatland.
20. What special gas well spacing will come next and how many wells maximum will EnCana drill in my community?
21. What is the maximum expected density of wells per section in Wheatland County that EnCana expects to drill?
22. What practices above and beyond those at the AEUB and AENV will EnCana employ for this special gas well spacing?
23. Is the "special gas well spacing" going to replace the cancelled applications that citizens objected to in the past, some even with very time consuming Appropriate Dispute Resolutions that were suddenly cancelled by EnCana?



24. Please send a copy of the cumulative impact assessments completed for this special gas well spacing. EnCana's VP Mr. Stacy Knull promised in writing to address cumulative impacts in my community (see my supporting documents). It is not possible to mitigate without assessing them first. The existing adverse cumulative impacts facing the land, water, air, other businesses, and people are already significant. If the company did not complete any such assessments, please detail why not. The Canadian Association of Petroleum Producers (CAPP), of which EnCana is a member, states that cumulative impacts for coalbed methane developments are a concern and to be consulted about, assessed, and mitigated.<sup>11</sup> The ERCB expects the same.
25. Will EnCana provide representative gas samples from all perf and frac depths and gas composition for these new wells?
26. Is shale gas that EnCana targets in Alberta biogenic?
27. EnCana wrote me that it is targeting the silts. Are the silts shales? Is silt gas biogenic?
28. Is coalbed methane that EnCana targets in Alberta biogenic?
29. Will EnCana use treated water for all activities related to this special gas well spacing to prevent contamination of aquifers? If not, why not?
30. Will EnCana provide comprehensive baseline testing for water wells and springs, including dissolved methane, isotopic fingerprinting of gases from representative perf and frac depths as the gas wells are drilled (i.e. *before* commingling), BTEX F1-4, complete metals, *etc*? This is important because it seems EnCana is commingling many formations with coal beds.

**Outstanding concerns** (with some supporting information and new comments added in response to EnCana's recent failure to respond to my concerns. If the ERCB would like copies of my past correspondence to EnCana, please let me know):

- The unresolved dangerous methane and other toxics contaminated water in my community, including my well, and the dramatic changes to our water after EnCana perforated, fractured and commingled our drinking water aquifers.
- EnCana's many broken promises, including the promises to meet or exceed ERCB regulations and never fracture anywhere near our fresh water aquifers.
- The incomplete investigation by Alberta Environment and the non-peer reviewed, error laden and incomplete reports (e.g. it was written that all gas wells within a certain distance to my water well, and all gas wells of my concern were reviewed, but they were not) by Dr. Blyth of Alberta Innovates (previously the Alberta Research Council). EnCana perforated and fractured many gas wells around Rosebud more shallow than 200 m, one as shallow as about 100 m. Many of these wells were not reviewed. Instead of using local gas well data, unidentified gas wells by an unknown company perforated and fractured deeper than

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<sup>11</sup> <http://www.capp.ca/getdoc.aspx?DocID=103407>

EnCana's gas wells at Rosebud, from over one hundred miles away, were used to dismiss the contamination. See attached March 19, 2008 media alert and letter.

- The ERCB publicly disclosed that deviated wells result in major factor of gas well leakage impact.<sup>12</sup> EnCana intends to deviate the 02-13 gas well under my property that already has very dangerous levels of methane contamination in the groundwater. EnCana already has three deviated wells originating in Section 13 near my property, meaning a three fold *major* factor of gas well leakage impact near and in groundwater flow to my water well. I am very concerned about EnCana cumulatively increasing more stray gas into my already contaminated water well and the wells of my neighbours, and potentially killing surface vegetation on my property from gas migrating to surface via soils.
- Increased risk of gas migration from increased density of wells, and corresponding increased perforations and hydraulic fracturing. The ERCB list the following as factors of gas migration impact:
  - Licensee
  - Depth of surface casing
  - Total depth
  - Well Density
  - Topography.

There are many allegations of water contamination, and harm to health and environment by EnCana in many areas of Canada and the US. In my community, there are numerous EnCana wells with limited surface casing, and many with many extremely shallow perforations and fractures, including directly into our drinking water aquifers. Well density is already high in my community.

- Depth of groundwater protection in this area corresponding to the limited amount of surface casing on numerous shallow EnCana gas wells.
- Drilling, perforating and hydraulic fracturing of formations in the subsurface of my property, with undisclosed, potentially highly toxic chemicals and the risk of damage to those formations with resulting increased cumulative gas migration, radioactivity and fresh water contamination. There is an alarming increase in cases of gas migration into water wells where hydraulic fracturing of unconventional gas wells has taken place, so much so, that Congress asked the EPA to investigate the impacts to water from hydraulic fracturing (results expected in 2012). EnCana's website<sup>13</sup> states that hydraulic fracturing

“breaks up the target formation”.

How will EnCana protect subsurface formations if EnCana breaks them? EnCana's website also states:

“In all EnCana operations, rigorous water management and protection is a vital part of this process”.

EnCana did not send me the company's “rigorous” water management and protection planning. Further, EnCana's website states:

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<sup>12</sup> <http://www.co2captureandstorage.info/docs/WBI3Presentations/SBachuTWatson.pdf>

<sup>13</sup> <http://www.encana.com/news/topics/hydraulicfracturing/>

“Every natural gas well has a steel casing that is cemented externally to prevent fluids migrating from the wellbore and to protect local groundwater”.

But, EnCana’s 05-14-27-22-W4M had the steel and cement protections perforated directly into the fresh water aquifers that my community relies on. EnCana’s website describes hydraulic fracturing as breaking up the target formation:

“much like a stone fracturing a windshield, to create pathways that allow the gas to flow”

I am concerned about the gas flow into and damages EnCana caused to our aquifers.

In order for me to understand the damages EnCana is intending to cause to formations I own in the subsurface, please detail how EnCana provided proper wellbore design for the 5-14 well, and the many other gas wells in my community that EnCana perforated and fractured above 200 m, far above the base of groundwater protection.

Was it possible for EnCana to protect our local groundwater and prevent gas from flowing into our water supplies when the company perforated and fractured directly into them? Industry cementing research reports<sup>14</sup> that:

**“Gas migration can occur any time the seal of a gas-bearing zone is disturbed”.**

EnCana’s website further states:

Encana is continuing to improve our understanding of the potential impacts the chemicals we use in our hydraulic fracturing operations may have on the environment and we continue to work to ensure we are using the most environmentally responsible hydraulic fracturing fluid formulations and fluid management practices available. In the interim, Encana has prohibited the use of 2-BE and diesel in fracturing fluids in its operations in response to specific stakeholder concerns.

EnCana’s early CBM in my community might have injected diesel and other toxic chemicals above the base of groundwater protection. The details of this needs to be disclosed. EnCana’s due diligence and protecting the public interest depends on it. EnCana states that the injection of 2-BE and diesel are prohibited “in the interim”, in response to stakeholder concerns. When does EnCana intend to inject these toxic substances again? And did EnCana use any toxic and or diesel or petroleum distillate based drilling muds, lost circulation and fracturing fluids, servicing or acidizing mixtures, etc in my community above the base of groundwater protection?

What is EnCana using to replace 2-BE and diesel with?

What are the company’s past and present fracturing fluid formulations and management practices used in my community?

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<sup>14</sup> <http://www.worldoil.com/June-2008-Improved-cementing-practice-prevents-gas-migration.html>

There are numerous reports that proppant or frac sand is radioactive and silicate sands can be dangerous to breath. This concerns me for the many past wells that EnCana fractured in my community above 200 m, and how EnCana disposed of any radioactive or silicate sand waste, and how many times EnCana injected radioactive materials above the base of groundwater protection in my community without telling us. How does EnCana respond to radioactive frac sand spills or frac outs? The responses to radioactive frac sand spills and frac outs that I have read from companies in Canada are dubious at best.<sup>15</sup> If EnCana's frac sand is or was radioactive, I request a copy of EnCana's licence from the Canadian Nuclear Safety Commission.

- Land Use Planning is of great concern to Albertans - EnCana does not appear to be adhering the Rosebud Area Structure Plan or environmental protection requirements.
- Cumulative increase in toxic Air Emissions – EnCana did not provide details on what toxic chemicals will be vented or flared from these wells, and the compressors and how EnCana will mitigate this pollution. The EPA is currently concerned about the air pollution from natural gas drilling and production, especially nitrous oxides, benzene and ground level ozone. The July 2010 update to the Rosebud Area Structure Plan states that Wheatland County “will protect Rosebud’s environment by discouraging industries in the area that could cause noise pollution and reduce air quality”. What is EnCana doing to mitigate this?
- Disposal and spills of produced water, drilling muds, frac sands, and fracturing waste and toxic chemical additives, *etc.* Waste and produced water injection in coalbed methane fields has been found to cause earth quakes. I am concerned about land spreading drilling and fracturing waste because of the many unknown toxic chemical additives used and the steep contours of my property that may result in rains washing toxics onto the surface of my land, or into the Rosebud River. In heavy rains, water rushes off the neighbouring lands onto my property within minutes and in great quantities. How will EnCana be dealing with its waste?
- Drilling cleaning water waste disposal on the surface, very close to drainage towards my property. EnCana wrote that they may dispose of their drill cleaning waste water on the surface, which may result in it running down onto my land off lease because of the contours. Also, if EnCana is cleaning out the well bore, toxic chemicals and radioactivity may be in the waste water. I am very concerned about this. I think waste-water must be hauled off lease. More information is required, notably how EnCana will prevent water run off onto my property and whether EnCana will disclose to me the chemicals they plan to use, their test results prior to disposal on the surface, and what the radioactivity levels are in the formations EnCana wants to fracture under and around my property.
- EnCana's application states that acid gas injection, enhanced recovery, and CO<sub>2</sub> more than 1% might occur under my property but I was not consulted about this. I am extremely alarmed about this. I need more information about what EnCana intends to do with the subsurface of my property.
- future restrictions to the use of my property from the deviated well bore and possible gas migration to surface killing trees and vegetation, and the many negative impacts that may arise from that, including loss of use. I am already forced to haul safe alternate potable water, at great inconvenience and cost of time.

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<sup>15</sup> <http://www.cbc.ca/canada/new-brunswick/story/2006/10/02/nb-spill.html#ixzz0z5lcTHHH>  
<http://www.cbc.ca/canada/prince-edward-island/story/2008/06/27/corridor-spill.html?ref=rss>

- EnCana’s compressor noise continues to annoy me in my home and outside on my property, and violates my legal right to quiet enjoyment. EnCana did not advise me how much their compressor noise will cumulatively increase from these new developments, especially as the older wells lose productivity.
- ERCB licensing information varies on the different copies of surveys EnCana sent me in their information package. For example, on the survey for well 15-12, it reads that the well is *not* at least 1.5 km from the limits of Rosebud, which is indeed the case. The 02-13 well to be drilled under my land is also *not* at least 1.5 km away from Rosebud but the survey indicates the opposite, and then on the next page it states: “Nearest urban centre is Rosebud 00.76km +/- E. of well centre”. And for 02-13, there seems to be a discrepancy in well depth that is on the application and the copy of the survey I was provided with. I need more information to verify.
- EnCana did not provide me a copy of their application or license, even though these were available at the time they sent me their letter and offer to test my well.
- The information package EnCana sent states that their wells will be flared, but in 2004, EnCana promised myself and the community that they will no longer flare their wells around Rosebud. In line incineration is to be used; testing to be done only into sales lines as per the ERCB’s Directive on flaring and incineration.
- I accept EnCana’s Sept 2, 2010 written offer to test my well, but require that EnCana’s breaches to Directives 035 and 056 and my outstanding concerns and unaddressed questions are dealt with first. My well was disconnected from my home years ago because living with it is life threatening, as evidenced by the deaths and explosions caused by industry’s stray gas migration. Because I am not using the well, and it is disconnected, how will I be able to observe for changes to my water quantity or quality after EnCana drills and fractures around and under my property?
- I am concerned with the limited amount of time EnCana gives Alberta landowners to respond to an offer to test, especially when the company is in breach of regulatory requirements and there are so many water contamination cases in EnCana’s gas fields.

I look forward to getting my questions and concerns completely, directly and honestly addressed by EnCana.

Thank you.

Sincerely,

Jessica Ernst

Cc Ms. Janaya Flower, Legal Counsel EnCana  
 Ms. Heather van Hauff, Alberta Environment  
 And others as listed in my Email.

**Supporting documents attached:**

July 19, 2010 Congress letter to EnCana investigating hydraulic fracturing practices and allegations of harm to health and environment and water contamination.

Photo of the Bruce Jack gas contaminated water well explosion, Spirit River Alberta, 2006

August 31, 2020 EnCana Application #1659755 to the ERCB for 100/02-13-27-22-W4M

September 1, 2010 ERCB Well Licence # 0423126 for 02-13-27-22-W4M

September 2, 2010 EnCana written offer to test Ernst water well

March 19, 2006, Media Alert, by adversely affected water well owners and my accompanying letter to Ms. Bev Yee, Alberta Environment

January 28, 2008 Response to Dr. A Blyth's reviews on the Rosebud water contamination cases by Drs. Barb Tilley and Karlis Muehlenbachs.

September 17, 2009, Pennsylvania Department of Environmental Protection Oil and Gas Technical Advisory Board, Proposal to Address Stray Gas Migration.

October 2004, EnCana Newsletter *In Your Community* for Rosebud.