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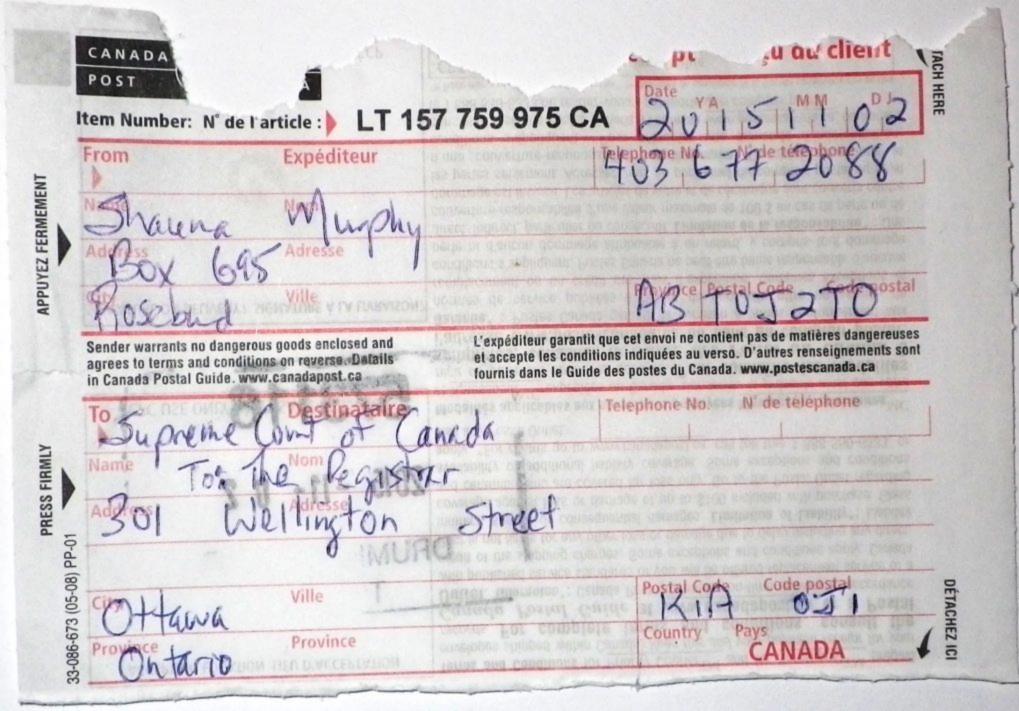
17:04

CALGARY, AB

CALGARY, AB

DRUMHELLER,

AB



**ORIGINAL TO:** 

THE REGISTRAR

Supreme Court of Canada

301 Wellington Street

Ottawa, ON K1A 0J1

November 1, 2015

Dear Supreme Court of Canada,

Please accept this petition in support of the Ernst vs AER appeal Docket 36167.

I am attaching documents supporting statements made in the petition and DISTRIBUTED DIGITAL copies for all parties excluding the signatures and personal information of those who signed to protect their privacy. If there are any questions or concerns I can be contacted by phone at **403-677-2088**.

Shauna Murphy

Box 695, Rosebud, Alberta TOJ 2TO

# **PETITION** to the Supreme Court of Canada

Re: Jessica Ernst vs Alberta Energy Regulator (AER) Supreme Court of Canada Docket #36167

We, the undersigned residents of the Hamlet of Rosebud, wish to add our voices to an urgent call to allow the AER to be held accountable for any damages incurred to our water source and reservoir as a result of fracking operations by Encana. Beforehand, the AER and Encana failed to consult with us about fracking planned in our drinking water zones. Since then, they have never confessed that Encana fracked our water source, the exact chemicals injected or what dangers residents are living with and the AER continues to let Encana frack in the fresh water zones here.

The only reason we know anything about the illegal fracking here is through Jessica Ernst's legal case and investigative journalist Andrew Nikiforuk who recently released a book called Slick Water.

For the AER, mandated to protect the public, to be legally immune from violating our charter rights in such an important drinking water contamination case is wrong and must be overturned.

We are not asking to file a factum or for time at the hearing.

Thank you for your consideration.

Name(print and signature)	P.O Box #, Rosebud, TOJ 2TO	Phone Number

# Hamlet of Rosebud Petition to the Supreme Court of Canada Docket #36167 SUPPORTING DOCUMENTS\*

- **2001 06 25:** Encana gas well 02-06-04-27-22-W4M perforated into six zones of Rosebud's fresh water aquifers, most shallow perf at 100.5 metres below ground level. Data filed at the **water** well database, "TGWC" (The Groundwater Centre), <a href="https://www.tgwc.com/m\_data.asp">https://www.tgwc.com/m\_data.asp</a>. This well was hydraulically fractured two months later. No chemicals used listed.
- **2003 10 13:** Encana gas well 05-14-27-22-W4M also perforated into six zones of Rosebud's fresh water aquifers, most shallow perf at 121.5 metres below ground level. Filed at the **water** well database, "TGWC" (The Groundwater Centre), <a href="https://www.tgwc.com/m\_data.asp">https://www.tgwc.com/m\_data.asp</a>. No chemicals used listed. On March 2, 2004, Encana hydraulically fractured Rosebud's drinking water aquifers (refer to AER summary data below) with 18 million litres of fluids to "obtain coal bed methane gas production."
- **2004 03 02:** Encana gas well 05-14-27-22-W4M hydraulically fractured into Rosebud's drinking water aquifers, filed at AER's energy well database. None of the chemicals used in drilling, cementing, perforating, fracturing, or servicing are listed.
- **2004 11 10:** Email from Brenda Austin, AER (then EUB) to Nga de la Cruz, Alberta Environment: "The base of groundwater protection for T 27 R 22W4M is 300 m below ground level."
- **2005 01 27:** Strathmore Standard archived article reporting that an "accumulation of gases" appears to have caused the explosion that destroyed Rosebud's water reservoir on January 11, 2005.
- **2005 01:** Hydrogeological investigation report cover and diagram by HCL for Encana, showing the company's hydraulically fractured completions into Rosebud's drinking water aquifers, the Upper and Middle Horseshoe Canyon, on the 05-14-27-22-W4M gas well.
- **2001 to 2006 04:** Map showing about 200 Encana gas wells fractured into fresh water zones around Rosebud before April 2006, that the company and AER never consulted with the community on before or confessed to afterwards. Map created for the Ernst lawsuit using data filed by Encana at the AER. The black circles are energy wells completed below the base of groundwater protection.

Even after knowing Rosebud's drinking water aquifers were contaminated with methane, ethane (2006 fingerprints match Encana's), other hydrocarbons and chemicals, the AER continues to let Encana perf and frac the fresh water zones around Rosebud.

- **2013 01 18:** One example of many, Encana's 00-15-12-27-22-W4M, a few hundred metres from the Ernst water well and our underground sewage field, most shallow perf at 201 metres below ground level.
- \*At the time of the law violations in Ernst vs AER, the AER was the EUB (Energy Utilities Board). In 2007, after it was caught breaking the law¹ and spying² on Albertans (both extensively reported in the media), the provincial government changed the regulator's name to the ERCB (Energy Resources Conservation Board). After the Ernst lawsuit went public, the Alberta government changed the ERCB to a 100% industry-funded corporation, the AER, removed its public interest mandate and appointed Ex-Encana VP Gerard Protti as Chair.

<sup>1</sup> Office of the Information and Privacy Commissioner #F2007-IR-005

<sup>2</sup> Justice D.W. Perras, September 7, 2007 Report on the spying.

Owner: Encana Corporati
[unknown], AB

Contractor: [unknown contractor]

Well Name: PCP ET AL 102 REDLAND 6-4-27-22

#### METRIC REPORT

136250 \*\* Easting (m): 5680226 \*\* Northing (m): 849.0 \*\*\* Elevation (m):

Google Earth

06-04-027-22 W4M



Work Type: Gas Well Drilling Method: Drilled Proposed Use: Industrial Date Started: June 21, 2001 Date Completed: June 25, 2001

Completion Type: Casing/Perforated Liner

Elog Taken: No Gamma Taken: No Stick Up (m): 0.0 Flowing: No

Depth Completed (m): 138.5 Depth Drilled (m): 457.0

Completion Interval (m): 100.5 - 138.5 \*

#### Lithology Details

Elevation Depth (AMSL) (BGL)

392.0 457.0 [unknown]

Lithology Descriptions (1)

#### Completion Details

Surface Casing: [unknown] — 177.8 mm (O.D.) x 2.00 mm (thick) x 78.00 m (bottom)

Liner: [unknown] — 114.3 mm (O.D.) x 2.00 mm (thick)

(Liner Bottom at: 456.0 m

Completion Interval: Slotted: 100.5 to 101.5 m - 2 - Method: Other Completion Interval: Slotted: 109.0 to 111.0 m - 2 - Method: Other Completion Interval: Slotted: 114.8 to 115.8 m - 2 - Method: Other Completion Interval: Slotted: 119.8 to 120.8 m - 2 - Method: Other Completion Interval: Slotted: 126.2 to 128.2 m - 2 - Method: Other Completion Interval: Slotted: 135.5 to 138.5 m - 2 - Method: Other

Chemistry Summary Details (mg/L, except as noted)

(most recent first)

#### General Comments / Observations

HCL well added to be included in a x-sec for 04-510. perforations are representative of coal layers. perforations performed with nitrogen gas. Objective of perforations was to obtain coal bed methane gas production.

Oil Present: No

Gas Present: No

Aquifer Tests

\* TGWC calculated or determined value. \*\* 84 - Surveyed (other) — 10TM NAD83

\*\*\* 83 - Surveyed (other) — {Ground ; AMSL}

Owner: EnCana Corporation

Contractor: [unknown saskatchewan contractor] Well Name: ECA ECOG HUSSAR 5-14-27-22

#### METRIC REPORT

05-14-027-22 W4M 139,003 \*\* 5,683,326 \*\*

868.5 \*\*\* Elevation (m): Google Earth

M38268.500313

Work Type: Gas Well Drilling Method: Drilled Proposed Use: Industrial

Completion Type: Casing/Perforated Liner

Elog Taken: No Gamma Taken: No

Flowing: No

General Details

Depth Completed (m): 219.0 Depth Drilled (m): 463.0

Completion Interval (m): 121.5 - 219.0 \*

Date Started: Oct 13, 2003

Date Completed: Oct 13, 2003

Lithology Details

Easting (m):

Northing (m):

Elevation Depth (AMSL) (BGL)

405.5 463.0 [unknown]

Lithology Descriptions (1)

Completion Details

Surface Casing: [unknown] — 177.8 mm (O.D.) x 2.00 mm (thick) x 81.00 m (bottom)

Liner: [unknown] — 114.3 mm (O.D.) x 2.00 mm (thick)

Intervals

(Liner Bottom at: 463.0 m

-- Completion Interval(s) --

Slotted: 121.5 to 122.5 m - 2 - Method: Other Slotted: 127.7 to 130.0 m - 2 - Method: Other Slotted: 137.4 to 138.4 m - 2 - Method: Other Slotted: 173.1 to 174.1 m - 2 - Method: Other Slotted: 182.1 to 183.1 m - 2 - Method: Other Slotted: 216.1 to 219.0 m - 2 - Method: Other

Chemistry Summary Details (mg/L)

(most recent first)

General Comments / Observations

HC well added to be included in a x-sec for 04-510. Perforations are representative of coal layers. Perforations performed with nitrogen gas. Objective of perforations was to obtain coal bed methane gas production.

Oil Present: No Observations (water): Colour: ; Odor: ; Quality:

Gas Present: No

Aquifer Tests

Alias IDs

\* TGWC calculated or determined value. \*\* 84 - Surveyed (other) — 10TM NAD83

\*\*\* 83 - Surveyed (other) — {Ground ; AMSL}

#### WELL ID: 00 / 05-14-027-22 W4 / 0

ERCB COMPANY INFORMATION
<b>CURRENT TO November 30, 2009</b>

COMPANY NAME:   ENCANA CO
---------------------------

ADDRESS: Box 2850, 150 - 9 Avenue SW Calgary, AB T2P 2S5

 PHONE #:
 403-645-2000
 BUSINESS ASSOCIATE CODE:
 0026

# ERCB WELL PRODUCTION DATA CURRENT TO OCTOBER 6, 2009

#### **AVERAGE DAILY PRODUCTION RATE**

WATER												
YEAR	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
2004	0	0	0	0	0	0	0	96	0	0	0	0

ERCB WELL LICENSING DATA							
UNIQUE WELL ID:	0274221405000	WELL LICENCE NUMBER:	0293679				
REGULATION SECTION:	Section 2.020	WELL LICENCE DATE:	SEPTEMBER 24, 2003				
SURFACE LOCATION:	05-14-027-22 W4	SURFACE OFFSETS:	N 570 E 40				
ACTUAL SURFACE LATITUDE:	51.304912	LONGITUDE:	113.004771				
THEORETICAL SURFACE LATITUDE:	0	LONGITUDE:	0				
LICENCEE:	ENCANA CORPORA	ATION	,				
ERCB AREA OFFICE:	MIDNAPORE	TERMINATING FORMATION:	BELLY RIVER GRP				
LAHEE CLASSIFICATION:	DEVELOPMENT	CONFIDENTIAL STATUS:	NON CONFIDENTIAL				
SURFACE OWNER:	FREEHOLD	MINERAL RIGHTS OWNER:	FREEHOLD				
AGREEMENT NUMBER:		AGREEMENT TYPE:					
AGREEMENT EXPIRY DATE:		DRILL COST AREA:					
SCHEME APPROVAL NUMBER:		SCHEME EXPIRY DATE:					
INCENTIVE CERTIFICATE NUMBER:	00000	INCENTIVE CERTIFICATE DATE:					
SURFACE ABANDONED TYPE:	PLATE	SURFACE ABANDONED DATE:	AUGUST 31, 2009				

ERCB WELL DRILLING OCCURRENCE DATA							
WELL NAME:	ECA ECOG HUSSAR 5-14-27-22	FIELD:	HUSSAR				
POOL:	BR UND	OIL SANDS AREA:					
OIL SANDS DEPOSIT:		DOWNHOLE OFFSETS:	N 570 E 40				
ACTUAL DOWNHOLE LATITUDE:	51.304912	LONGITUDE:	113.004771				
THEORETICAL DOWNHOLE LATITUDE:	0	LONGITUDE:	0				
GROUND ELEVATION:	868.5	KB ELEVATION:	872.5				
CF ELEVATION:	0	WELL TOTAL DEPTH:	467				
TRUE VERTICAL DEPTH:	0	PB DEPTH:	0				
SPUD DATE:	OCTOBER 13, 2003	FINAL DRILL DATE:	OCTOBER 13, 2003				
RIG RELEASE DATE:	OCTOBER 13, 2003	ON PRODUCTION DATE:					
DRILLING CONTRACTOR:		RIG NUMBER:	34				

ERCB WELL TOPS & MARKERS DATA							
GEO REVISED DATE TYPE FORMATION DEPTH QUALITY DESCRIPTION							
	LOG	BELLY RIVER GRP	415.4	GOOD PICK FROM LOGS	TOP OF UNIT		

ERCB WELL LOG DATA								
LOG RUN NUMBER	LOG RUN DATE	LOG TYPE	TOP INTERVAL	BASE INTERVAL	DESCRIPTION			
1	Jun 27 2004	GAMMA RAY CEMENT BOND	5	120				
1	Jun 29 2004	COLLAR LOG	105	180				
1	Nov 7 2003	COMP NEUTRON SONIC	50	450				

There is no DST data for this well.

There is no Tour - Occurrence data for this well.

There is no Tour - Direction Drilling data for this well.

# **ERCB WELL TOUR - CASING DATA**

DATE	CASING	SIZE	SHOE SET DEPTH	LINER TOP DEPTH	DENSITY	STEEL PROCESS	YIELD STRENGTH	COLLAR TYPE	MXD STRING
Oct 10 2003	SURFACE	177.8	85	0	25.3	Н	40		
Oct 13 2003	PRODUCTION	114.3	467	0	14.1	J	55		

ERCB WELL TOUR - CEMENTING DATA								
STAGE NO	UNIT	AMOUNT	TYPE	RECEMENT				
0	TONNEST	4	CLASS G NEAT	0				
0	TONNEST	6	CLASS G NEAT	0				

There is no Tour - Cores Cut data for this well.

		INTERVAL	INTERVAL	
DATE	TYPE	TOP	BASE	SHOTS
Feb 15 2004	JET PERFORATION	418.9	419.9	13
Feb 15 2004	JET PERFORATION	415.5	416.5	13
Feb 15 2004	JET PERFORATION	374.3	375.3	13
Feb 15 2004	JET PERFORATION	371.7	372.7	13
Feb 15 2004	JET PERFORATION	358.4	359.4	13
Feb 15 2004	JET PERFORATION	354.5	355.5	13
Feb 15 2004	JET PERFORATION	347.8	348.8	13
Feb 15 2004	JET PERFORATION	342.6	343.6	13
Feb 15 2004	JET PERFORATION	284.9	286.9	13
Feb 15 2004	JET PERFORATION	283.5	284.5	13
Feb 15 2004	JET PERFORATION	259.3	260.3	13
Feb 15 2004	JET PERFORATION	248	250	13
Feb 15 2004	JET PERFORATION	244.9	245.9	13
Feb 15 2004	JET PERFORATION	238.6	239.6	13
Feb 15 2004	JET PERFORATION	234.6	235.6	13
Feb 15 2004	JET PERFORATION	228.7	230.7	13
Feb 15 2004	JET PERFORATION	222	223	13
Feb 15 2004	JET PERFORATION	220.1	221.1	13
Feb 15 2004	JET PERFORATION	186.1	187.1	13
Feb 15 2004	JET PERFORATION	177.1	178.1	13
Feb 15 2004	JET PERFORATION	141.4	142.4	13
Feb 15 2004	JET PERFORATION	133	134	13
Feb 15 2004	JET PERFORATION	131.7	132.7	13
Feb 15 2004	JET PERFORATION	125.5	126.5	13
Mar 2 2004	FRACTURED	131.7	419.9	0
Jul 12 2004	CEMENT SQUEEZE	141.4	142.4	0

Jul 12 2004	CEMENT SQUEEZE	133	134	0
Jul 12 2004	CEMENT SQUEEZE	131.7	132.7	0
Jul 12 2004	CEMENT SQUEEZE	125.5	126.5	0
Oct 10 2004	CEMENT PLUG	17	425	0

There is no Tour - Initial Production data for this well.

DATE	RUN TYPE	INTERVAL TOP	INTERVAL BASE	CEMENT UNIT	CEMENT AMOUNT	TOP FOUND DEPTH	SURF ABAND DATE
Oct 10 2004	ABANDON A ZONE	17	425	METRESM	408	17	

FRCB	WELL	SILLATS	HISTORY	DATA
ERCD	VVCLL	SIAIUS	потокі	DAIA

	ENOS WELL COMOTON SAM
DATE	STATUS
Sep 24 2003	
Oct 13 2003	DRL&C
Jun 3 2004	GAS TEST
Oct 10 2004	GAS ABZONE
Aug 31 2009	GAS ABD

### **ERCB WELL COMPLETION DATA**

INITIAL	INITIAL
INTERVAL	INTERVAL
ТОР	воттом

# **ERCB WELL PRODUCTION CONTROL DATA**

WELL NAME:	ECA ECOG HUSSAR 5-14-27-22
FIELD NAME:	HUSSAR
POOL NAME:	BR UND
RECOVERY MECHANISM:	Natural Depletion
WELL STATUS FLUID:	Gas
WELL STATUS MODE:	Abandoned

## **Tom Byrnes**

From:

Brenda Austin

Sent:

Wednesday, November 10, 2004 2:58 PM

To: Cc: Nga de-la-Cruz: Curtis Evans Glenn Winner; Tom Byrnes

Subject:

RE: Encana wells in Rosebud area

The base of groundwater protection for T 27 R 22W4 is 300 m below ground level, so Curtis is correct in that all water production would be saline. Companies are required to submit fluid analysis, but as these are taken soon after completion are generally poor for water related to CBM.

00/7-13; surface casing is at 38 metres and production casing is at 744 metres. 02/7-13; surface casing is at 198 metres and production casing at 1482 metres.

Both casings are cemented to surface, therefore the requirement to protect non-saline groundwater with cemented casing has been met in both wells.

Just to add to Curtis's comments. There are two wells in LSD 7, not three. 02/7-13-27-22W4/2 is the second production event in the 02/7-13-27-22W4/0 well, not another well.

Did I get everything?

----Original Message----

From: Nga de-la-Cruz

Sent: Wednesday, November 10, 2004 11:31 AM

To: Curtis Evans

Cc: Glenn Winner; Tom Byrnes; Brenda Austin Subject: RE: Encana wells in Rosebud area

Thanks, Curtis.

Doesn't EUB require the companies to submit water production and water analyses ?

Could you give me the depth of the surface casing and the cemented length of the casing (production casing?)

Thanks. Nga

----Original Message----

From: Curtis Evans [mailto:curtis.evans@gov.ab.ca]

Sent: Wednesday, November 10, 2004 11:05 AM

To: Nga de-la-Cruz

Cc: Glenn Winner; Tom Byrnes; Brenda Austin Subject: RE: Encana wells in Rosebud area

Hello Nga - I only found two wells in that LSD, but one well has two events:

00/07-13-027-22W4/0 - gas flow - Belly River SST - TD=746 perfs=648-654 mkb

02/07-13-027-22W4/0 - Cr-oil abzone - Lwr Mannville - TD=1482 -

perfs=1438-1442.5 mkb

Same well 2nd event - gas flow - Viking - TD=same - perfs=1206-1208 mkb

I don't have ready access to the water quality, but it appears that all production is very deep and water would be a brine of some sort?

С.

----Original Message----

From: Nga de-la-Cruz

Sent: Wednesday, November 10, 2004 10:39 AM

To: Tom Byrnes; Brenda Austin Cc: Curtis Evans; Glenn Winner

Subject: Encana wells in Rosebud area

Importance: High

Hi,

I need some info quickly about 3 wells ( 1 of which was abandoned ) at 7-13-27-22 W4 about their depth, production interval, formations they are in, and the water quality. Greatly appreciate your help.

Nga

Nga de la Cruz, P.Geol.
Team Leader, Groundwater Issues
Science and Standards Branch
Alberta Environment
4th Floor, Oxbridge Place
9820 - 106 Street
Edmonton, AB. T5K 2J6
Tel: (780) 427-9915 Fax: (780) 422-4192
Nga.de-la-Cruz@gov.ab.ca

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# Rosebud has boiled water order

Strathmore Standard http://www.strathmorestandard.com/2005/01/27/rosebud-has-boiled-water-order-following Thursday, January 27, 2005 10:00:00 MST AM

Investigators say an accumulation of gases appears to have caused the Jan. 11 explosion that destroyed the Rosebud water reservoir building and sent a Wheatland County employee to hospital with injuries.

As a result of the damage to the reservoir, Calgary Health Region has issued a boiling water order for the Hamlet.

Tracy Gooler, Wheatland County constable and manager of protective services, said that the county?s water operator, John Garvin, was endeavoring to thaw out an inlet supply line, to the portable water reservoir in Rosebud, with a propane tiger torch at about 2:30 p.m.

?He had done his checks,? Gooler said, adding that when the match was struck to light the torch, an explosion occurred

?The explosion caused the lid of the potable water reservoir to become loose, and in fact, moved it 16 inches, opening the water to the elements.?

Gooler said the operator was unable to detect the gases by smell and did not use a detection device. Garvin sustained non-life threatening, but fairly substantial injuries, including two broken wrists and some burns to the face and hands.

He was assisted by the Rockyford Fire Department and WADEMSA (Wheatland and Adjacent Districts Emergency Medical Services Association) took him to the Foothills hospital. Gooler said.

The reservoir sustained significant damage, including moving the concrete roof 16 inches, and some vertical cracks to the walls.

The county has hired a structural engineer to determine what needs to be done to repair it. Gooler said that report has not come back to the county so ?what is going to happen with the reservoir, we?re not sure.?

In the meantime, because the potable water was exposed to the elements, the boil water advisory was issued and put in place and ?remains in effect until the county can put in a back up system.?

The county is bringing in four 1,500-gallon tanks that will be placed in a secure area.

Gooler said only the Hamlet of Rosebud is effected and the population is around 80 residents.

However, it is home to the Rosebud Theatre of the Arts and their performances attract visitors from across Alberta and elsewhere.

Gooler noted that this is sort of the ?inactive? time for the theatre.

?When you have performances happening fairly often, the water moves quite a bit. When the theatre is not on, obviously 80 people don?t use that much water, so the water doesn?t move, and that?s when our inlet supply line has a tendency to freeze,? Gooler said.

While the health region issued the boiling water advisory, Alberta Environment and Occupational Health and Safety are working with the county to ensure standards are met and continue investigation into the mishap.

# **EnCana Corporation**

Redland Area
NE 10-027-22 W4M
Sean Kenny Site Investigation

Prepared by Hydrogeological Consultants Ltd. 1-800-661-7972

Our File No.: 04-510

January 2005

PERMIT TO PRACTICE

HYDROGEOLOGICAL CONSULTANTS LTD.

Signature

Date

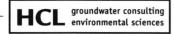
**PERMIT NUMBER P 385** 

18Apr05

The Association of Professional Engineers, Geologists and Geophysicists of Alberta

© 2005 hydrogeological consultants ltd.





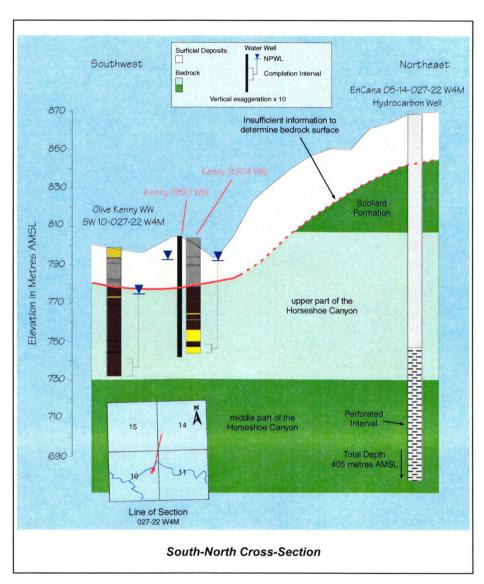


#### 6. INTERPRETATION

# 6.1. Aquifers

The SK 1950 WW and the SK 2004 WW are completed in the same hydraulic unit within the upper part of the Horseshoe Canvon Formation. The elevations of the water levels in both water wells are similar; there is no significant difference in the chemical quality of the groundwater from the two water wells and pumping from the SK 1950 WW causes measured drawdown in the water level in the SK 2004 WW. The vertical relationship between the elevation of the completion depths and the non-pumping water levels in the SK 1950 WW and the SK 2004 WW is shown in the adjacent cross-section.

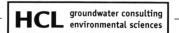
Also shown on the cross-section is the EnCana 05-14 Gas Well and the perforation interval of the gas well when stimulated on 02 Mar 04. The cross-section shows the top of the perforated interval at an elevation of 747.45 metres AMSL, which coincides closely with the top of the completion interval of the SK 2004 WW.



The stimulation of the EnCana 05-14 Gas Well used nitrogen gas and the estimated pressure outside the perforations is nine megaPascals. Based on an aquifer model, the pressure change measured at the SK 1950 and SK 2004 water wells as a result of the stimulation would be in the order of 0.2 kiloPascals. As a result of flowing the 05-14 Gas Well for 76 days after stimulation, very little if any nitrogen gas would be expected to remain in the coal zone in the 125.5- to 126.5-metres below KB interval.

## 6.2. Sean Kenny 2004 Water Well

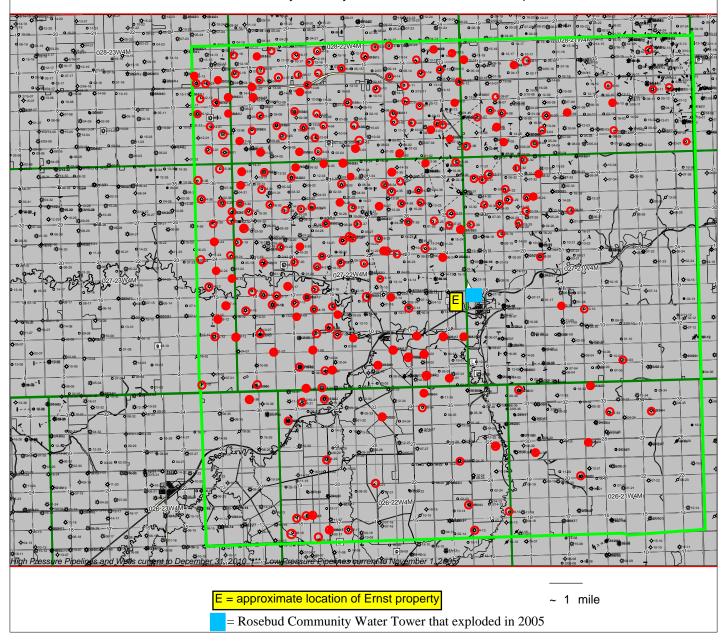
The interpretation of the turbidity data indicates that there are two sources of sediment in the groundwater from the SK 2004 WW. The first source is the groundwater running down the outside of the liner; the second source is the sandstone layers below the coal zone. When the water well is not being pumped, there is a gradual flow of groundwater down the annulus.

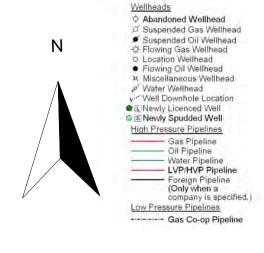




# Shallow Gas Wells Drilled and Frac'd Near Rosebud, Alberta

Circles: EnCana Wells Perforated and or Hydraulically Fractured Above the Base of Groundwater Protection before April 2006 Solid dots: EnCana Wells Perforated and or Hydraulically Fractured Above 200m before April 2006





Well Data Page 1 of 2

PRINT REPORT CLOSE F	REPORT																			
			WE	ELL ID: 00	) / 15	-12-02	7-22 W	/4 / 0												
				AER COM																
COMPANY NAME:	ENCANA CORPO																			
ADDRESS: PHONE #:	Box 2850, 500 Ce 403-645-2000	entre St	SE Calgar	ry, AB T2P 2	2S5			IBIIGII	NESS V	SSOCIA	TE CODE				0026	-				
PHONE #.	403-043-2000							BUSII	NESS A	SSUCIA	TE CODE	-			10020	4				
SWITCH TO DAILY RATE ONL	Υ																R WELL P			
Liquids in cubic metres, gases in t	thousands of cubic m	netres																		
CONDENSATE YEAR JANUARY	FEBRUARY			IARCH	_		APRIL			MAY			JUNE		1	JULY	,——	_	AUGUS	
HOURS VOLUME DAIL		DAILY			AILYH			EDAILY	HOURS		IE DAILY	HOURS		EDAILY	HOURS			YHOUR		
2012 4 0 0	192 0	0	743	0	0	720	0	0	744	0	0	720	0.2	0.007	744	0	0	744	0	
GAS YEAR JANUARY	FEBRUARY		М	IARCH	$\neg$		APRIL			MAY			JUNE			JULY		$\overline{}$	AUGUS	T
HOURS VOLUME DAILY				OLUME DA															VOLUM	
2012 4 0.1 0.6 2013 744 7.3 0.235	192 2.8 6 672 9	0.35 0.321	743 743		013 853	720 703	0.8 20.9	0.027	744 732	0.7 16.8	0.023	720 719	0.7 15.8	0.023	744 728	0.4 20.1			0.3 26.7	0.8
2014 738 15.5 0.504		0.616	743		407	711	14.2	0.479	743	17.5	0.565	705	15.7	0.534	738	15.5			13.2	
WATER													·							
YEAR JANUARY HOURS VOLUME DAILY	FEBRUARY HOURS VOLUME	_		IARCH /OLUMEID/	AILYIH		APRIL VOLUMI	ElDAILY	HOURS	MAY VOLUM	/E DAILY	HOURS	JUNE	IEIDAILY	HOURS	JULY		YHOUR	AUGUS	
2012 4 0 0	192 0	0	743		0	720	0	0	744	0	0	720	2.3	0.077		0	0	744	0	
				AER WEI	LL LIC	ENSIN	G DATA													
UNIQUE WELL ID:			0274221	215000				E NUME				04	32788							
REGULATION SECTION: SURFACE LOCATION:		$\longrightarrow$	Section 2 15-12-02					E DATE	:				RIL 7, 20							
ACTUAL SURFACE LATITUDE:	 :	$\dashv$	51.29770				ACE OF	FSEIS:					05.3 W 2.968131	045.1		$\dashv$				
THEORETICAL SURFACE LATI			0			LONG	ITUDE:					0								
LICENCEE:		$\Box$		CORPOR	ATION							Line	K DIVE	2514		_				
AER AREA OFFICE: LAHEE CLASSIFICATION:		$\dashv$	DEVELO					S FORM					K RIVER	IDENTIA		$\dashv$				
SURFACE OWNER:			FREEHO					HTS OW				ВО		10 211110	_					
AGREEMENT NUMBER:							EMENT					$\perp$								
AGREEMENT EXPIRY DATE: SCHEME APPROVAL NUMBER	•	-					ME EXP	AREA: IRY DAT	F.			+				$-\parallel$				
INCENTIVE CERTIFICATE NUM			00000					ERTIFIC		ΓE:										
SURFACE ABANDONED TYPE:	<u> </u>					SURF	ACE AB	ANDONI	ED DAT	:										
								:								4				
WELL NAME:				WELL DRIL			RRENCE	DATA				Lu	LICCAD			_				
POOL:				OMMINGLE					NDS AF	EA:		<del>-  </del> "	USSAR			$\dashv$				
OIL SANDS DEPOSIT:								DOWN	HOLE O	FFSETS	S:	s	205.3 V	/ 645.1						
ACTUAL DOWNHOLE LATITUD THEORETICAL DOWNHOLE LA			51.29770	03				LONGI				11	12.96813	1						
GROUND ELEVATION:	TITODE.		792.4						EVATIOI	<b>1</b> :			96.4			$\dashv$				
CF ELEVATION:			0						TOTAL I	EPTH:		69	97							
TRUE VERTICAL DEPTH:			0	DED 0, 204	4			PB DEI		ATE:		0	OV/ENADE	-D 00 00	14.4	-				
SPUD DATE: RIG RELEASE DATE:				IBER 8, 201 IBER 23, 20					DRILL D		TE:			R 22, 20 Y 22, 20		$\dashv$				
DRILLING CONTRACTOR:				, -0				RIG NU				42		., _0						
There is no Tops & Markers data f	for this well.																			
				AER	WELL	LOG D	ATA									$\dashv$				
LOG RUN NUMBER	LOG RUN DATE	: T		LOG TYP				OP INTE	RVAL		BASE IN	TERVAL		DESCF	RIPTION					
1	Dec 14 2011		COM	IP NEUTRO	N SOI	NIC	<u> </u>	13			69	91								
There is no DST data for this well.																				
			AER	R WELL TO	UR - C	OCCURI	RENCE	DATA								=				
			T	Т	Т			FNL		1		WAT			LOST					
TYPE PROG		DEPTH	MUD DENSIT				CNTRL DEPTH	DENS		FNL SCTY	WATER SEVERT			IRCLN VERTY	CIRCLE					
NO INCIDENT ENCT	Nov 3 2012	0	0	999			0	0		999		0			0					
NO INCIDENT ENCT	Jan 23 2013	0	0	999			0	0		999		0			0	4				
There is no Tour - Direction Drilling	g data for this well															$\dashv$				
	<u> </u>																			
		1 -	HOE	AER WELL	TOUR	R - CAS	ING DAT	ГА		1		Т		Т		_				
DATE :		-   - :	SET	TOP		DENC	_	STE			YIELD	.	COLLA		MXD					
Nov 8 2011 SURF			96	<b>DEPTH</b>	+	DENSI 25.3		PROC	H	ST	FRENGTH 40	<del>'  </del>	TYPE	$\dashv$	STRING	$-\parallel$				
Nov 23 2011 PRODU			697	0	1	14.1					55									
			AE	R WELL TO		CEMEN	NTING D	ATA												
STAGE NO	UNIT			AMOL	INT				TYPE				RF	CEMENT		-111				

AMOUNT

TYPE CLASS G NEAT LIGHT WEIGHT RECEMENT

UNIT TONNEST TONNEST

STAGE NO

Well Data Page 2 of 2

	AER WELL TOUR - P	ERFORATION / TREATMENT DATA		
DATE	TYPE	INTERVAL TOP	INTERVAL BASE	sнотs
Jan 18 2013	JET PERFORATION	430	0	0
Jan 20 2012	JET PERFORATION	434	436	13
Jan 20 2012	JET PERFORATION	523	525	13
Jan 20 2012	JET PERFORATION	549	550	13
Jan 20 2012	JET PERFORATION	599	601	13
Jan 20 2012	JET PERFORATION	619	622	13
Jan 26 2012	FRACTURED	434	436	0
Jan 26 2012	FRACTURED	523	525	0
Jan 26 2012	FRACTURED	549	550	0
Jan 26 2012	FRACTURED	599	601	0
Jan 26 2012	FRACTURED	619	622	0
Jan 18 2013	JET PERFORATION	201	203	13
Jan 18 2013	JET PERFORATION	209.5	214.5	13
Jan 18 2013	JET PERFORATION	263	264	13
Jan 18 2013	JET PERFORATION	290	291	13
Jan 18 2013	JET PERFORATION	329	330	13
Jan 18 2013	JET PERFORATION	333.5	334	13
Jan 23 2013	FRACTURED	333.5	334	0
Jan 23 2013	FRACTURED	329	330	0
Jan 23 2013	FRACTURED	290	291	0
Jan 23 2013	FRACTURED	263	264	0
	FRACTURED	209.5	044.5	
Jan 23 2013  e is no Tour - Initial Production d  e is no Tour - Plug Back / Aband	ata for this well.		214.5	0
e is no Tour - Initial Production d	ata for this well.	T 20000	214.5	0
e is no Tour - Initial Production d	ata for this well.			
e is no Tour - Initial Production d	ata for this well.	STATUS HISTORY DATA		
e is no Tour - Initial Production d e is no Tour - Plug Back / Aband DATE	ata for this well.	STATUS HISTORY DATA	3	
e is no Tour - Initial Production d e is no Tour - Plug Back / Aband  DATE  Apr 7 2011	ata for this well.	STATUS HISTORY DATA STATUS	3	
e is no Tour - Initial Production d e is no Tour - Plug Back / Aband  DATE  Apr 7 2011  Nov 22 2011	ata for this well.	STATUS HISTORY DATA STATUS DRL&C	<b>3</b>	
e is no Tour - Initial Production d e is no Tour - Plug Back / Aband  DATE  Apr 7 2011  Nov 22 2011  Jan 29 2012	ata for this well.	STATUS HISTORY DATA STATUS DRL&G GAS TES	S ST	
e is no Tour - Initial Production d e is no Tour - Plug Back / Aband  DATE Apr 7 2011 Nov 22 2011 Jan 29 2012 Feb 22 2012	ata for this well.	STATUS HISTORY DATA  STATUS  DRI RE  GAS FLC  GAS FLC	S S S S W W	
e is no Tour - Initial Production d e is no Tour - Plug Back / Aband  DATE  Apr 7 2011  Nov 22 2011  Jan 29 2012  Feb 22 2012  Nov 2 2012	ata for this well.  Donment data for this well.  AER WELL	STATUS HISTORY DATA  STATUS  DRL&C  GAS TES  GAS FLC  GAS FLC  FLOW	S S S S W W	
e is no Tour - Initial Production d e is no Tour - Plug Back / Aband  DATE  Apr 7 2011  Nov 22 2011  Jan 29 2012  Feb 22 2012  Nov 2 2012	ata for this well.  Donment data for this well.  AER WELL	STATUS HISTORY DATA  STATUS  DRL&C  GAS TEC  GAS FLC  GAS FLC  GAS FLC	S S S S W W	
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e is no Tour - Initial Production d e is no Tour - Plug Back / Aband  DATE  Apr 7 2011  Nov 22 2011  Jan 29 2012  Feb 22 2012  Nov 2 2012  Feb 4 2013	AER WELL INTERVAL TOP 201  AER WELL AER	STATUS HISTORY DATA  STATUS  DRL&C GAS TEL GAS FLC FLOW  LL COMPLETION DATA  ODUCTION CONTROL DATA	S ST WW INITIAL INTERVAL BOTTOM	
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e is no Tour - Initial Production d  be is no Tour - Plug Back / Aband  DATE  Apr 7 2011  Nov 22 2011  Jan 29 2012  Feb 22 2012  Nov 2 2012  Feb 4 2013  L NAME:  D NAME:  L NAME:	AER WELL INITIAL INTERVAL 201  AER WELL PR ECA HUSS COMM.	STATUS HISTORY DATA  STATUS  DRL&C GAS TEC GAS FLC FLOW  LL COMPLETION DATA  DUUCTION CONTROL DATA  DUUCTION 15-12-27-22  AR  AR  HINGLED MFP9501	S ST WW INITIAL INTERVAL BOTTOM	
e is no Tour - Initial Production d  DATE Apr 7 2011 Nov 22 2011 Jan 29 2012 Feb 2 2012 Feb 4 2013  L NAME: D NAME: L NAME: L NAME: L NAME:	AER WELL INITIAL INTERVAL TOP 201  AER WELL ECA F HUSS COMM Gas - Gas -	STATUS HISTORY DATA  STATUS  DRL&C GAS TELE GAS FLC GAS FLC FLOW  LL COMPLETION DATA  DDUCTION CONTROL DATA  IUSSAR 15-12-27-22  AR AIUSSAR 15-12-27-22  AR BINGLED MFP9501  Proration - Effluent Measurement	S ST WW INITIAL INTERVAL BOTTOM	
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