



**“People know what they do;
frequently they know why they do what they do;
but what they don’t know is what what they do does.”**

Michel Foucault

March 2014

Community Issues Committee on Drilling West Lethbridge

SAGE meeting Thursday, March 6th, 7:00 p.m. at Public Library, downtown.

1st Annual Conference for the [Alberta Invasive Species Council](#). March 12th, Lacombe.

Xeriscape Your Yard. Workshop on March 8th, 9:00 to 4:30. Register through [OWC](#), Leta Pezderic

Helen Schuler Nature Centre [Grand Reopening](#). Thursday, Feb 27 - Saturday, March 1

On Monday, February 24th, the City of Lethbridge held a Community Issues Committee on Drilling in West Lethbridge. The Yates was filled to capacity, with overflow filling the council chambers, and the overflow of the overflow finding space in the atrium. Some estimate 800 people attended with as many as a thousand more watching online. The CIC is designed to expand discussion on important issues in Lethbridge.

Six speakers shared their expertise on topics ranging from land rights, to the geology of drilling/completion, to health and emergency response. The Alberta Energy Regulator (AER) spoke on the application and decision-making process, and a City spokesperson shared thoughts on

the impact of drilling on community development.

The presentations supported some of the concerns of citizens, though there seemed to be an emphasis that the systems in place (AER directives, health monitoring, and emergency response plans) were adequate to the risk.

From an environmental perspective, there was a suggestion that groundwater and surface-water baseline data be gathered, with appropriate long-term monitoring. Seismic activity should be monitored, as should noise and air emissions. The choice and operation of incinerator technology (to flare gas) was identified as important to minimize byproducts

of combustion and non-combusted chemicals that may affect downwind health.

It remains clear that the decision-making process is out of the hands of the municipal government, however, the AER representative encouraged ongoing discussions with Goldenkey in an effort to minimize the risk and impact on Lethbridge. It was recognized, however, that the process will likely proceed to the AER hearings. One positive result of the meeting was that the AER representative could not doubt the resistance of citizens in Lethbridge to the project.

And interesting brochure given away at the meeting is included in this newsletter.

Leaky Oil and Gas Wells

A recent report from Andrew Nikiforuk (The Tye) addresses gas leaking from oil and gas wells.

Nikiforuk says: “industry studies clearly show that five to seven per cent of all new oil and gas wells leak. As wells age, the percentage of leakers can increase to a startling 30 or 50 per cent. But the worst leakers remain “deviated” or horizontal wells commonly used for hydraulic fracturing.” These numbers are supported by the research of Bachu & Watson using data from the ERCB in Alberta.

The article also quotes a Schlumberger publication: “Since the earliest gas wells, uncontrolled migration of hydrocarbons to the surface has challenged the oil and gas industry.”

Leaks from oil & gas wells are a source of odours, particularly low-concentration sulphur compounds, and a potential health concern. Leaks may also pose a fire/explosion hazard requiring a well-planned emergency response - particularly when wells are located near dense urban populations.

Energy Trumps Everything in Alberta

One might think it obvious that it is inappropriate to drill for oil & gas inside a municipality near dense urban populations. But it is not.

Consider the Municipal Government Act, 619(1), that states: “A licence, permit, approval or other authorization granted by the NRCB, ERCB, AER, AEUB or AUC prevails, in accordance with this section, over any statutory plan, land use bylaw, subdivision decision or development decision by a subdivision authority, development authority, subdivision and development appeal

board, or the Municipal Government Board or any other authorization under this Part.”

In other words, a City must accept and plan around any drilling permit approved by the (autonomous) energy regulator. This leaves Lethbridge very little influence on affecting resource exploration and production inside the City. Mayor Spearman has suggested that the City may not sell electricity or water (for hydraulic fracturing) to Goldenkey, though this does not prevent the company from trucking it in.

Towards a Net-Zero Picnic Facility in Lethbridge

Last spring, SAGE was awarded \$10,000 by Shell as part of its FuellingChange program. As part of the 'Moving Towards Sustainability' initiative, SAGE is partnering with the City of Lethbridge to install a solar (photovoltaic) array on a picnic shelter being planned for Nicholas Sheran park, in west Lethbridge.

The new parks facility will be oriented to maximize solar exposure so the solar array may be optimized to produce electricity. As a general rule, a solar array should point due south and be placed at an angle roughly equal to the latitude of the location. In Lethbridge this is 49 degrees. Obstructions that shade the panels should be avoided.

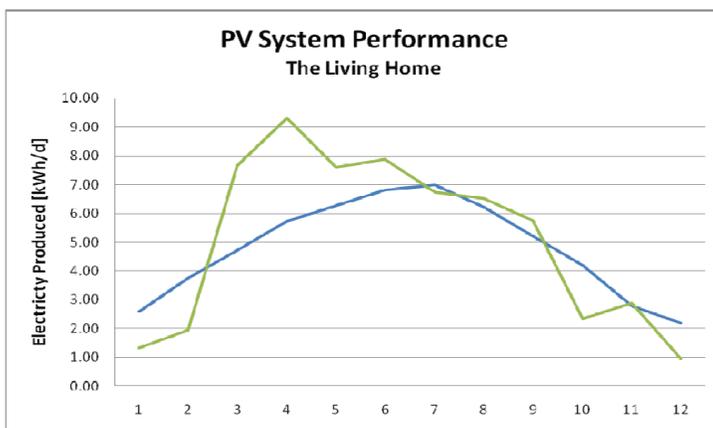
Solar photovoltaic (PV) technology captures the sun's radiation and converts it to an electric current. This current is then inverted and conditioned to be able to feed the electricity onto the main grid. It is possible to store electricity using batteries, but this increases the environmental impact and reduces the overall performance of the system (due to losses in storage and conversion). It is better to feed into the grid when the photovoltaic array is producing electricity and draw from the grid when there is electricity demand in the facility.

Commercial photovoltaic technology currently has efficiencies ranging from 10% to 14% for converting solar energy into electricity. Lethbridge is one of the sunniest regions in the country, so electricity production can be as high as 1650 kWh annually for each kW installed. A kW of PV covers approximately 10 square meters (or 100 square feet), depending on the efficiency of the technology. The expected lifespan is between 20 and 30 years, with a slight reduction in efficiency each year due to degradation of the PV cells.

The performance of a PV system installed on The Living Home (a partnership between the City of Lethbridge,

Cedar Ridge Quality Homes, and Lethbridge College) is shown on the diagram below.

The 'Moving Towards Sustainability' initiative involves the installation of 4 kW (40 square meters) of PV panels on a picnic shelter being built this summer. To put this in perspective, this installation would produce about 6600 kWh each year - roughly the amount an average home would use over the same period. We have applied for other grants in the hope that we will be able to expand the capacity on the same infrastructure. Using current prices of electricity, this will save almost \$700 in utilities each year and reduce greenhouse gas emissions by 5 tonnes CO_{2eq} annually.



Interesting Links:

Shale Gas: How often do fracked wells leak? (Nikiforuk) <http://thetyee.ca/News/2013/01/09/Leaky-Fracked-Wells/>

Brief Review of Threats to Canada's Groundwater from the Oil and Gas Industry's Methane Migration and Hydraulic Fracturing <http://www.ernstversusencana.ca/>

Factors Affecting or Indicating Potential Wellbore Leakage (Bachu & Watson) <http://www.albertasurfacerights.com/upload/files/SBachuTWatson%20%20Potential%20Wellbore%20Leakage.pdf>

Exxon CEO Sues Profits Huge as America's Largest Natural Gas Producer - But Frack in his Own Backyard and he Sues. <http://www.forbes.com/>



Southern Alberta Group for the Environment (SAGE)

A Leading Voice for a Healthy and Environmentally Sustainable Community.

Visit us at: <http://sage-environment.org/>

If you are interesting in getting involved, contact us at:

sage-communications@sage-environment.org

The John A. Livingston Reader (2007)

John Livingston may be the greatest Canadian environmentalist you've never heard of. This *Reader*, released after his death in 2006, includes two formative books published in the early 1970s: *The Fallacy of Wildlife Conservation* & *One Cosmic Instant: A Natural History of Human Arrogance*. Both books could have been written yesterday, as they remain fundamental to current environmental struggles.

Livingston defines 'wildlife conservation' as the "preservation of wildlife forms and groups of forms in perpetuity, for their own sakes, irrespective of any connotation of present or future human use" (p.16). The problem, as Livingston outlines, is that our arguments for the conservation of wildlife generally fall into the 'self-interest' group (human-oriented) which contradicts the goal of conservation, as defined.

The arguments for 'interest-dividend' include *wise-use* perspectives which involves husbandry, stewardship, science and future resources; and it includes *quality of life* which revolves around present and future options for the use of nature, or aesthetics for oneself or for tourism.

The other mode of arguments for self-interest is of the 'waste-bankrupt' perspective, including *eco-catastrophe* scenario. The argument is, generally, 'act now or pay later'. This approach, Livingston says, is "Heavy handed, perhaps, but refreshingly straightforward and free of rationalization. An apparent weakness is that it assumes that people will listen – and act" (p.49).

Either mode of self-interest argumentation for wildlife conservation is imbued with human-centeredness. The fundamental message is: 'If we can't be good, at least we can be prudent,' the good is rejected for the prudent.

His main concern with this approach is that conservation, "far from confronting the utilitarian imperative, chooses to legitimize it and argue from it. This, for our movement, I perceive as a species of death wish." Livingston argues, "the self-interest argument has not and cannot preserve wildlife. [...] The preservation of wildlife *for its own sake*, with no implication of use, is antithetical to the self-interest position. By its very emphasis on the utilitarian imperative, the latter drives the conceptual wedge between man and nature ever deeper, thus reducing the possibility of the achievement of wildlife preservation in the ideal sense" (p.52).

This is the paradox: As soon as wildlife conservation is argued from the self-interest perspective, conservation is doomed - it is lost to a competition between human uses. In other words, it reinforces the human/nature rift.

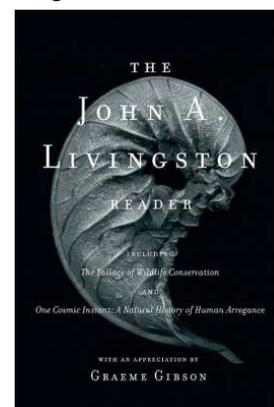
Arguing for wildlife conservation based on its intrinsic value has no connection with human reason: "If wildlife preservation really *is* for its own sake – which means for the experienter's sake – then there can never be any "reason" for it. There is no rational argument for experiencing; it is above and beyond all logical capture" (p.142). Livingston says, the "nearest thing we seem to have is the appreciation of form in music or poetry or dance – form, as opposed to specific content. This, as a kind of process, we understand and appreciate aesthetically. But we have not devel-



oped an aesthetic of *life process*" (p.48).

One Cosmic Instant: A Natural History of Human Arrogance is a perfect companion book, as it traces the human/nature rift back through the evolution of *Homo sapiens*. Livingston suggests: "The cultural transmission from generation to generation of refinements in tool-making techniques, of improved cooperative hunting methods, and of evolving social conventions of all kinds, was the essential underpinning of the conceptual man/nature dichotomy long before there was *Homo sapiens*, and quite probably before there was *Homo*" (p.280). He argues, in fact, that the rift occurred somewhere between adopting the missionary position and commanding fire.

Human domination of nature has since been reinforced by both science and religion—what he calls Judaeo-Christian and Baconian-Cartesian arrogance. Livingston is not optimistic about this nature-destroying ideology being changed in the timeframe necessary for existence. In a passionate fulmination, Livingston says: "All the magnificence and nobility of our creativity cannot begin to compensate me for what my species has cost me. Shakespeare cannot compensate me for toxic pesticides, Bach cannot compensate me for Hiroshima, nor Michelangelo for the blue whale. [...] Yet, the total destruction of blue Earth may well precede any diminishment in human pride" (p.339).



DRILLING NEXT DOOR

We've already shown we are willing to drill near our headwaters; we're willing to drill on remaining native grasslands and habitats for species-at-risk; and now we're preparing to drill within municipal boundaries - near residential subdivisions, playgrounds and schools.

Based on recent comments, the provincial government has no intention of discussing resource exploitation within city limits. The recent Draft South Saskatchewan Regional Plan makes this abundantly clear:

"Municipalities, in collaboration with industry, the Government of Alberta and other stakeholders are encouraged to identify areas of existing and future extraction of energy resources, and determine appropriate land use in the vicinity of these resources" (italics added).

In other words, it is the responsibility of the municipality to plan around free-for-all resource extraction.

Nothing must get in the way.

WANT TO KNOW MORE?

Desmogblog - *Fracking the Future*
www.pacinst.org/wp-content/uploads/sites/21/2013/02/full_report35.pdf

Pembina Institute - *Natural Gas and Water: What you need to know about hydraulic fracturing in B.C.*
www.pembina.org/pub/2170

Council of Canadians - *Fracking our Future*
www.canadians.org/sites/default/files/publications/CP-fall-13.pdf

Pacific Institute - *Hydraulic Fracturing and Water Resources*
www.pacinst.org/wp-content/uploads/sites/21/2013/02/full_report35.pdf

Environment North Carolina - *The Costs of Fracking*
www.wral.com/asset/news/state/nccapitol/2012/09/20/11571598/The_Costs_of_Fracking_vNC.pdf

Food and Water Watch - *The Social Costs of Fracking*
documents.foodandwaterwatch.org/doc/Social_Costs_of_Fracking.pdf

The Tye - *How Much Does Western Canada Subsidize Fracking?*
theyec.ca/News/2014/02/19/Western-Canada-Subsidizes-Fracking/

GOLDENKEY'S PENNY PROJECT

AN ACT OF DESPERATION?

We consume about 1000 barrels of oil each second on the planet. Today, for every six barrels of oil being consumed, only one is being discovered. Many experts believe that production rates of oil have plateaued and will steadily decline in the future. Our governments and corporations have no Plan B - there is a growing desperation to find and produce oil. We are now going after the dregs of oil reserves in our province - the best oil is already long gone.

Kurt Vonnegut sagely said:

"Here's what I think the truth is: We are all addicts of fossil fuels in a state of denial. And like so many addicts about to face cold turkey, our leaders are now committing violent crimes to get what little is left of what we're hooked on."

How far are we willing to go to feed our addiction?

WHAT ARE YOU WILLING TO RISK?

Contamination of groundwater during drilling.

Contamination of soil or surface water from improper handling and disposal of drilling fluids.

Communication between the oil formation and groundwater due to the pressures of hydraulic fracturing (via natural geologic faults or older wells nearby).

Contamination of groundwater in the long term due to gas migration through aging casing and cement. Surface spills of hazardous chemicals used in hydraulic fracturing (fracking). Cumulative effects of the contamination soil and water from small spills on site (like an old gas station).

Air emissions from gases trapped in the oil and water flowing back after hydraulic fracturing. Air emissions from flaring gas during testing and from process upsets during production. Air emissions from leaking equipment. These emissions are expected to contain H₂S, a very poisonous gas.

Noise from surface infrastructure for oil drilling (pump jacks, pumps and compressors).

Emergency situations like grassfires igniting stored oil.

Traffic congestion and related issues, including noise and dust (traffic is estimated by the New York State Department of Environmental Conservation to be 2000 to 4000 round trips per drilled well).

Spills of contaminated water, oil or chemicals from transportation accidents.

... AND THE SPIN

"We've been fracking in the province for sixty years."
This is at best a half-truth: the technologies (water volumes, pressures and chemicals) have advanced remarkably in the past decade allowing industry to exploit once inaccessible tight sand and shale formations. Comparing modern techniques of well stimulation to those used even a couple of decades ago is like comparing the Wright Flyer I to the Concorde.

"Fracking uses only a small fraction of the water abstracted in the province."

This also has some truthiness: the difference is that fracking water is contaminated and forever removed from the hydraulic cycle. In a basin closed to new water licenses, we should be asking if we want to use this water to grow food or produce margin oil reserves.

"These wells are only exploratory."

The oil' foot-in-the-door technique. And if Goldenkey finds oil that is economic to produce, they'll produce it by drilling more wells (using the most cost-effective techniques of directional or horizontal drilling and hydraulic fracturing).

"There are wells already in the area."

There are indeed a number of gas wells producing in the area. These were drilled before the City planned to develop West Lethbridge. Drilling new wells was voluntarily suspended when the City began plans for residential expansion. Furthermore, these wells are gas wells -- the difference being that there is no extensive surface infrastructure required (pump jacks, produced oil and water tanks, pumps and compressors).

"We need oil."

Yes we do ... as we sit in our pick-up trucks waiting in a drive-thru lineup; as we dump tonnes of plastic waste in the landfill. Perhaps this is a motivation to evaluate our own behaviours and reduce our dependence on oil so that we don't encourage drilling and production inside our city.

"Oil is part of the Alberta economy."

Yes, again ... and when the oil is gone in a generation or two? What should we be doing now to ensure a prosperous future for our children and grandchildren? Can we Albertans not be good at something else in an economy?