

Northern Plains Resource Council Testimony on SB 86
January 21, 2011

Madame Chairwoman and members of the Committee, thank you for this opportunity to speak. My name is Cindy Webber and I live in Sweet Grass County. I am on the Board of Northern Plains Resource Council, a non-profit that organizes Montana citizens to protect our water quality, family farms and ranches, and unique quality of life.

I am also here today as a landowner that will be impacted by the gas development slated for Sweet Grass County. I live 12 miles south of Big Timber on the Main Boulder River. At this time approximately 26% of the county has been leased as illustrated by this map. The purple squares represent the private lands leased. The dark blue squares represent state lands leased, which includes the Boulder River bed in front of my home. 3 exploratory wells have been drilled in the county. In neighboring Park County, a similar acreage has been leased for gas development.

To give a little background, the type of gas development in my area is deep gas, which uses hydraulic fracturing to release the gas. Fracking is a process in oil and gas development that involves fracturing rock and pumping harmful chemicals and synthetic sand under high pressure into the ground. These chemicals, many of which can cause health problems to humans, can get into drinking water through a variety of ways including faulty well casing and spills. A number of cases of contamination from drilling have occurred.

In order to understand why I believe this bill is important, let's think about it in terms of insurance. I'm sure most of you have some sort of insurance, whether it be car insurance, life insurance, or health insurance. I think of SB 86 as insurance for our water quality in Sweet Grass County. We can debate all day whether or not this or that state has been contaminated by hydraulic fracturing. Most likely our debate won't get us very far. All I'm asking for today, is insurance for my clean water. Our ranch is a cow-calf operation with irrigated pasture land. Clean water is essential to the continuance of our and our neighbors' way of life.

SB 86 is not only about clean water, it is also about a Right to Know what is going on under the land. That's why the bill includes a number of well thought out provisions. Specifically, SB 86 **protects private property rights** by requiring a 20 day advance notification of fracking procedures for the landowners adjacent to the gas well. Additionally the bill **protects public health** by requiring industry disclose fracking fluid contents used in each well by posting that information on the Board of Oil and Gas' website.

The Right to Know bill **does not** publicly disclose the *specific chemical formulas (ratios)* of fracking fluids that are used, thereby protecting companies' trade secrets. It does **protect emergency medical personnel** in responding to emergencies related to fracking incidences

by allowing them to request chemical formulas (ratios) in the event of an emergency.

Public disclosure is not a controversial issue. One of the major companies that has leased much of Sweet Grass County, Devon Energy, recently said in a Bozeman Chronicle article that "the industry is not opposed to disclosing chemicals but "the process needs to be timely so it doesn't impede the progress of completing the well and bringing on production." In addition, our neighbor to the south, Wyoming has voluntarily required disclosure of the Wyoming gas industry.

Please support SB 86, a proactive choice which gives citizens of Montana a little insurance in protecting private property rights and clean water. Thank you for your time and consideration.

Respectfully submitted,

Cindy Webber

From: Charles French <cfrench@itstriangle.com>
Subject: **Re: oil & gas leasing map**
Date: January 9, 2011 5:53:32 PM MST
To: Cindy Webber <cindy@mtintouch.net>, Beth Kaeding <kaedingl@aol.com>, Becca Fischer <rebecca@northernplains.org>
6 Attachments, 5.0 MB

Cindy and Beth,

Here are the Maps in .pdf format. They all show the private lands leases 2008 to 2010 and the National Forest (Green) BLM(yellow) (not much in SwG) and state land (light blue) Gas _Project _lease_p_only.pdf For the Gas Project_lease _P_S.pdf I added the State Lands that are leased in dark blue. State land that is not leased is still light blue. For Gas_project_water.pdf I added rivers and steams for reference. (Yellowstone, Sweet Grass etc.) For Gas Project _Roads.pdf I added roads for reference (I-90, US191 and lots of county roads) For Gas Project _Easements I added land with Conservation Easements (TNC MLR etc.) Light Green. Mix Green with Purple - both GAS and Conservation. For Gas _Project_all.pdf has all of the above in one ugly map. (on 8x11) I am still working on the Maps as I make time. Ideas for edits welcome.

Hope thins go ok in Helena.

See Ya,
Charlie
cell: 406 930 1765

On 01/09/2011 01:05 PM, Cindy Webber wrote:

Hi Charlie,

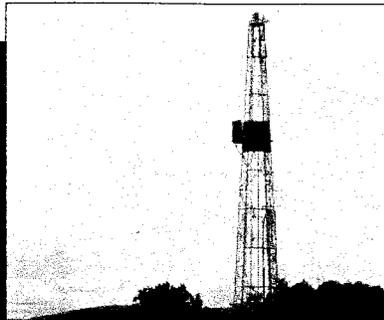
Beth Kaeding is going to Helena to testify on Renewable energy on Wed. and Clayton wants her to lobby some folks on the fracking bill. She has the bill and the NP fact sheet, but she and I were wondering if you could possibly pdf the map to her Mon? Her email address is: kaedingl@aol.com. Thanks if you can do this.

On another note, I was able to get into the gov link for the lease sales and pull off the information I wanted about the Boulder River. So far I haven't been successful finding a township map to print out off the web, but may be very close. From what I see, it looks like the

HYDRAULIC FRACTURING

THE RIGHT TO KNOW ACT

An exploratory gas well is drilled in Sweet Grass County 800 feet from a landowner's home. About 20% of Sweet Grass County has been leased for gas development.



Northern Plains Resource Council's campaign to ensure that oil and gas companies are good neighbors by publicly revealing toxic drilling chemicals that endanger human health and the rights of landowners.

We deserve to know what's in our water

Fracking facts

- State and federal laws allow drillers to list fracking fluid ingredients as "proprietary" or "no hazardous ingredients" even if it is not the case. Wyoming is the only state where this is not allowed.
- 83% of chemicals used in fracking fluids in Montana have adverse effects on people, including damage to skin, eyes, ears and mouth;
- 1 to 8 million gallons of water are used for every hydraulic fracturing. A well can be fracked as many as 30 times;
- Nearly 30% of fracking fluids remain underground after fracking is completed;
- Many fluids are stored and evaporated in unlined pits near the gas or oil wells. The solid materials left over are buried on-site.

Hydraulic fracturing, or "fracking," is a process in oil and gas development that involves fracturing rock and pumping toxic chemicals and synthetic sand under high pressure into the ground. These chemicals, many of which can cause severe health problems to humans, can get into the drinking water through a variety of ways. Unfortunately, these chemicals compositions are kept secret from the public.

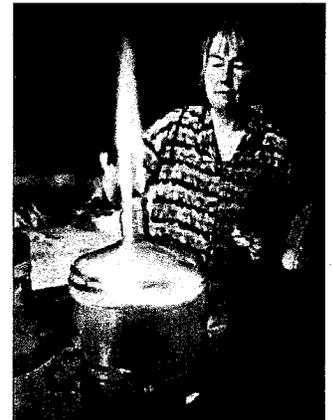
The federal Safe Drinking Water Act (SDWA) was enacted in 1974 to protect drinking water quality in the United States. This law applies to all surface and ground waters actually or potentially used for drinking water. In 2005 the SDWA was amended to exempt oil and gas drilling from disclosure or regulation of fracking. As a result, if chemicals migrate into drinking water sources, no one is held liable.

Fracking fluids found in water

Residents in Alabama, Colorado, New Mexico, Pennsylvania, Virginia, West Virginia, and Wyoming have reported changes in water quality following fracking operations near their homes. Common problems include cloudy water, sediment, iron precipitates, black jelly-like grease, floating particles, diesel fuel or petroleum odors, increased methane in water, rashes from taking showers, gassy taste, and decreased or complete loss of water. In Pavillion, Wyoming, the Environmental Protection Agency found fracking chemicals in 3 residential wells, and 11 wells have trace amounts of oil, gas, and metals. Fracking is done in eastern Montana's Bakken oilfield and in Sweet Grass and Park counties for methane gas.

Fracking disclosure bill (SB 86) the right solution

Northern Plains is supporting a bill in the 2011 legislative session that will require written notice of fracking chemicals within 20 days to landowners, as well as public disclosure and chemical information to emergency workers. Wyoming has recently, through a rule-making process, begun disclosure of fracking fluids with great success and few complaints from the industry. This is a common sense protection for the health of our citizens. And if the fracking fluids are safe, as industry claims, disclosure will show that.



An Alberta homeowner ignites gas trapped in water from her well. A test showed strong similarities between the gas and drilling fluids used at a nearby gas well.

Photo by Will Andruschack

What to do

- Baseline testing is essential for proving your water quality prior to oil and gas development. The secrecy of fracking chemicals places a huge burden of proof on landowners;
- Keep complete logs of the levels of your well water;
- Document your land. Video footage, aerial photos, or on-the-ground photos taken in every season are all extremely important;
- Join Northern Plains and other concerned citizens in the fight to protect your drinking water!
- Call your legislator and ask them to support the Right to Know Act to disclose fracking chemicals. Go to <http://www.leg.mt.gov/css/contact.us.asp>

Fracking fluids remain a mystery

In natural gas fracturing, also known as fracking, 435 chemical products are known to be used. Out of that, only 5% of the specific chemicals have been publicly disclosed.

Fracking fluids have been known to travel 3,000 feet away from a drilling well. While there is an effort to bring fracking fluids back to the surface and properly dispose of it, between 20-70% of the fluids remain underground.

Out of the chemicals known to be used in fracking for which basic information is available, 96% provide warnings about eye and/or skin harm, 94% warn about respiratory

system harm, and 49% warn about brain or neurological harm that can occur either when the chemicals are inhaled or when they come into contact with skin.

For example, methanol and formaldehyde are known fracking chemicals. The side effects of methanol exposure include adverse reproductive and fetal effects, central nervous system depression, digestive tract irritation, respiratory tract irritation, liver, kidney and heart damage, blindness, and death. The effects from formaldehyde exposure include skin disorders, respiratory problems, and cancer.

Fracking incidents occur across the country

Here are a few incidents of well contamination from fracking:

Colorado: The water well of the Amos family, near Silt, blew out during hydraulic fracturing of nearby gas wells. Their drinking water turned gray, had strong smells, and bubbled. The Colorado Oil and Gas Conservation Commission determined that the Amos well was contaminated due to inadequate gas well structure that resulted in higher than normal well pressures and gas migration into groundwater. Water testing found methane had migrated to the Amos water well. Two years later, Laura Amos was diagnosed with primary hyperaldosteronism, a rare condition linked in laboratory testing to 2-butoxyethanol – a

chemical she learned had been used in the hydraulic fracturing near her home.

Wyoming: In the Pinedale Anticline and Jonah natural gas fields, 89 industrial water wells and one livestock well have been contaminated with hydrocarbons; 15 have had levels of carcinogenic benzene above federal health standards, including one that is 1,500 times the level considered safe for human consumption. This well, and at least 12 others, has been plugged by the operators, making it impossible to monitor and track the movement of pollutants underground.

These and other incidences spurred the EPA to initiate a nationwide study.

Keep informed!

Take action!

Join

Northern Plains Resource Council is a grassroots conservation and family agriculture group that organizes Montana citizens to protect our water quality, family farms and ranches, and our unique quality of life.

220 S. 27th St.
Suite A
Billings, MT 59101
Tel: (406) 248-1154

Visit our website at
www.northernplains.org

NORTHERN PLAINS

RESOURCE COUNCIL

I want to be a monthly donor: (Also for membership; credit/debit card withdrawal available)

\$50/month \$25/month \$20/month \$15/month \$10/month Other _____

A one-time membership donation is better for me right now:

Rider of the Big Sky \$500+ Bottom Line Rider \$200+ Rough Rider \$100+

Range Rider \$50+ General \$40 Living Lightly \$15

I'm paying by: Check (payable to Northern Plains) Credit/Debit Card

Card Type _____ Card # _____ Code _____

Expires _____ Name on Card _____ Signature _____

Withdraw from my Bank Account (please include VOIDED check and sign above)

NAME _____

ADDRESS _____

CITY, STATE, ZIP _____

PHONE _____

EMAIL _____

TEDX

The Endocrine Disruption Exchange
P.O. Box 1407, Paonia, CO 81428
970-527-4082
www.endocrinedisruption.org
tedx@tds.net

CHEMICALS USED IN OIL AND NATURAL GAS OPERATIONS:

MONTANA

April 2009

INTRODUCTION

The following summaries are based on the possible health effects of the products and chemicals used in operations to produce oil and natural gas in Montana. They provide a profile of the possible health hazards for those living and working in regions where oil and natural gas activity is taking place. The names of the products and chemicals and their known or suspected health effects were entered in an EXCEL spreadsheet for easy sorting and searching. The health effects associated with the chemicals were listed under one or more of the 14 categories used in government toxicological literature.

TEDX compiled a list containing the names of 104 products containing 76 chemicals as of March 2009. The names of the products and the chemicals they contain came from State Emergency Planning and Community Right-to-Know Act (EPCRA) Tier II reports. Material Data Safety Sheets (MSDS) were found for some of the products and this information was incorporated into the spreadsheet. The quantity and quality of information varied among these data sources. TEDX makes no claim that the list of products and chemicals in this analysis is complete.

PRODUCT SUMMARY

Material Safety Data Sheets (MSDSs)

MSDSs are designed to inform those who handle, ship, and use the products about their physical and chemical characteristics, and their direct and/or immediate health effects, in order to prevent injury while working with the products. The sheets are also designed to inform emergency response crews in case of accidents or spills. The total reported composition of a product on an MSDS can be less than 0.1% up to 100%. MSDSs are not submitted to the Occupational Safety and Health Administration (OSHA) for review. The product manufacturers determine what is revealed on their MSDSs.

The health information on MSDSs most often warns of possible harm to the skin and eyes, gastrointestinal and respiratory tracts, followed by the nervous system and brain. Many MSDSs do not address the outcome of long term, intermittent or chronic exposures, or adverse health effects that may not be expressed until years after the exposure.

TEDX has obtained full or partial MSDSs for 30 of the 104 products known to be in use in Montana. Four of the MSDSs list "proprietary" as the composition of the product. Nine of the MSDSs list at least one ingredient with a CAS number¹, but they also contain ingredients labeled only "proprietary" or "confidential." The

¹ CAS =Chemical Abstracts Service, provided by the American Chemical Society. This unique number is used to identify a specific substance. A single substance can have many different names, but only one CAS number. A substance may be a single chemical, an isomer of a chemical, a mixture of isomers, polymer, biological sequences, or a mixture of related chemicals.

remaining 17 MSDSs provide CAS numbers for all the ingredients disclosed, but only one includes the full composition with specific chemical information.

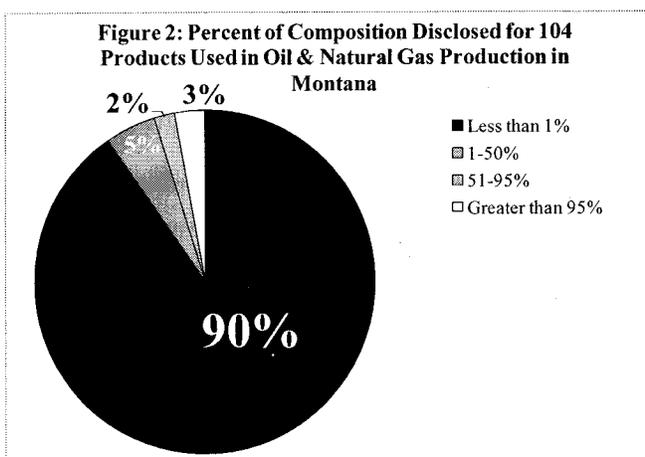
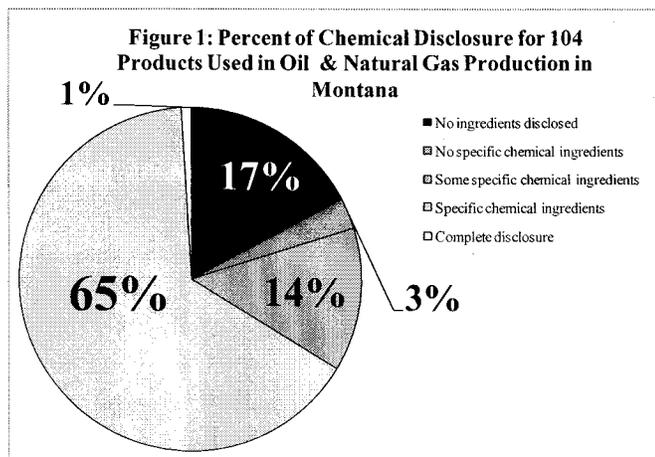
State Tier II Reports

Tier II reports must be filed by storage facilities under EPCRA. The Act sets a minimum amount above which a product containing a hazardous substance has to be reported in a storage facility. Reporting requirements vary from state to state, and the amount of information included on the form also varies from county to county and company to company.

Information for 74 of the 104 products on the TEDX spreadsheet came only from state Tier II report data. The descriptors on the forms received by TEDX ranged from a functional category name (e.g. weight materials, surfactant, etc.) with no product name, to the name of the product with specific chemical ingredients and CAS numbers. The percent of the total composition of the products is rarely included on these forms. Seventeen of the products listed on Tier II forms did not provide any ingredients, 52 listed one chemical with a CAS number and five listed more than one ingredient but supplied CAS numbers for only some of these. Those ingredients that did not have a CAS number were labeled "proprietary."

Evaluation of the information available about the 104 products

Sixty-eight products (65%) list specific chemical ingredients (Figure 1). Fourteen of the products (13%) contain a combination of chemicals with and without CAS numbers and three (3%) contain chemicals with only general or non-specific names. No information for 18 (17%) of the products was provided. The one (1%) remaining product discloses all of the ingredients.



Less than 1% of the total composition is known for 94 (90%) of the 104 products in our spreadsheet (Figure 2). Less than 50% of the composition is known for 5 (5%) of the products, and between 51% and 95% of the composition is known for 2 (2%) of the products. Three (3%) of the products had information about more than 95% of their full composition.

Evaluation of the health effects associated with the 104 products

The health effects of those products with an MSDS that did not list specific ingredients (4 products) were determined by the information contained in the Hazards Identification (Section 6), Toxicological Information (Section 11) and Ecological Information (Section 12) portions of the MSDS. Because of the limitations inherent in some of the data sources, the health effects of the products and chemicals in the following summary will not be comprehensive.

For 19% of the products, no health effects were reported, while 81% reported at least one adverse health effect (Figure 3).

Figure 3: Percent of Products Used in Oil & Natural Gas Production in Montana Associated with Health Effects

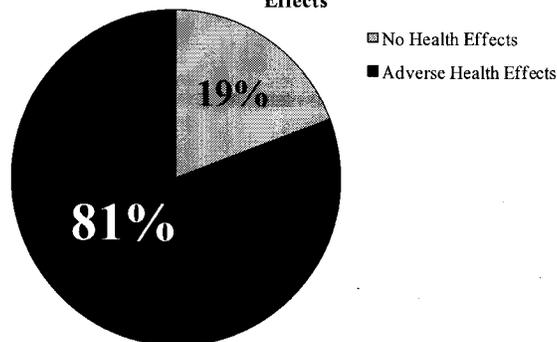
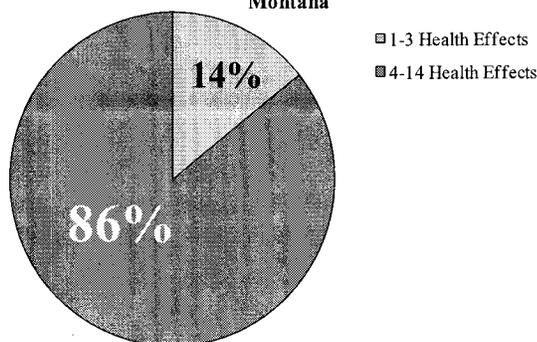
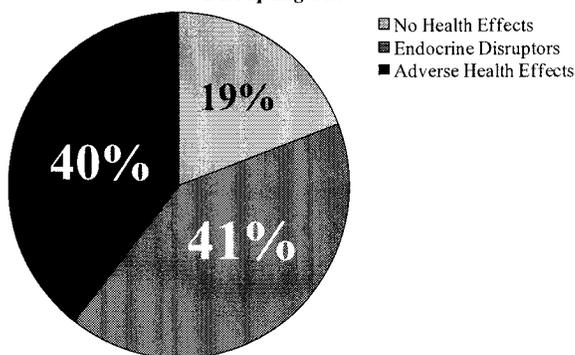


Figure 4: Number of Health Effects Associated with Products Used in Oil & Natural Gas Production in Montana



Of those 84 products that were associated with adverse health effects, 14% had one to three health effects, and 86% had between four and 14 health effects (Figure 4). Forty-one percent of the products contained one or more chemicals considered to be endocrine disruptors (Figure 5), chemicals that interfere with development and function.

Figure 5: Percent of Products Used in Oil & Natural Gas Production in Montana Containing Endocrine Disrupting Chemicals



CHEMICAL SUMMARY

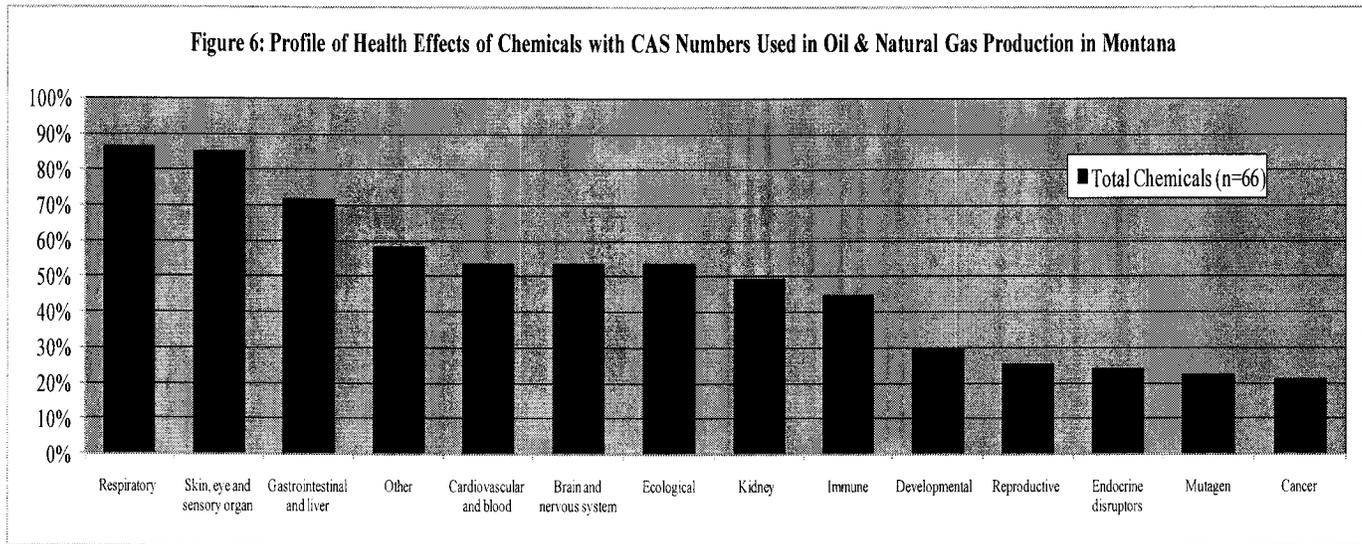
Evaluation of the information available about the 76 chemicals

Products may contain more than one chemical, and a given chemical may occur in more than one product. In the 104 products identified above, there were a total of 76 chemicals. Specific chemical names and CAS numbers could not be determined for 10 (13%) of the 76 chemicals on TEDX's list. The names provided for the chemicals were too general (e.g. unsaponifiables, polymer, etc.), or they were listed as "confidential," "proprietary," or "various."

It was impossible to link four of the chemicals without CAS numbers to any health category aside from the health data reported on an MSDS. The limitations of MSDS data for possible health effects are noted above. Some health data was provided for two chemicals, but for the remaining four, no information could be found.

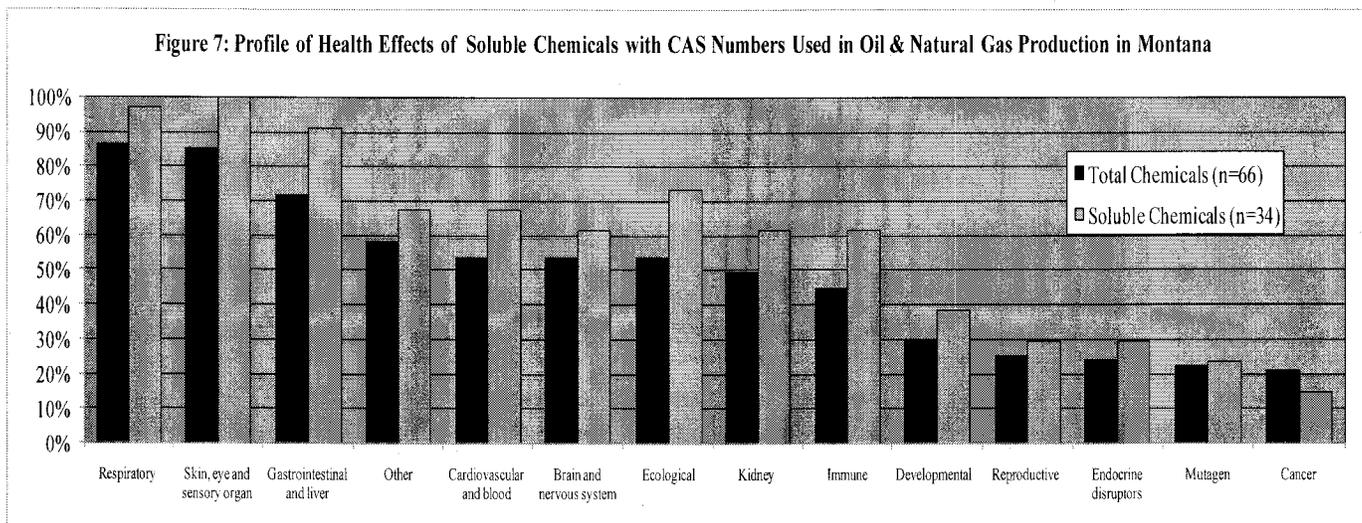
Summary of the health effects associated with the 66 chemicals with CAS numbers

Figure 6 shows the percentages of the 66 chemicals with CAS numbers associated with the general health categories used in government reports. Chemicals are often included in more than one category.



When all of the chemicals with CAS numbers are combined, 87% are associated with respiratory effects, 85% can harm skin, eye or sensory organs and 72% can cause gastrointestinal or liver effects. Fifty-four percent can harm the brain and nervous system, have ecological effects (harm to aquatic species, birds, amphibians or invertebrates), or harm the cardiovascular system and blood. Fifty-eight percent of the chemicals have health effects in the ‘Other’ category. The ‘Other’ category includes such effects as changes in weight or effects on teeth or bones, for example, but the most often cited effect in this category is the ability of the chemical to cause death.

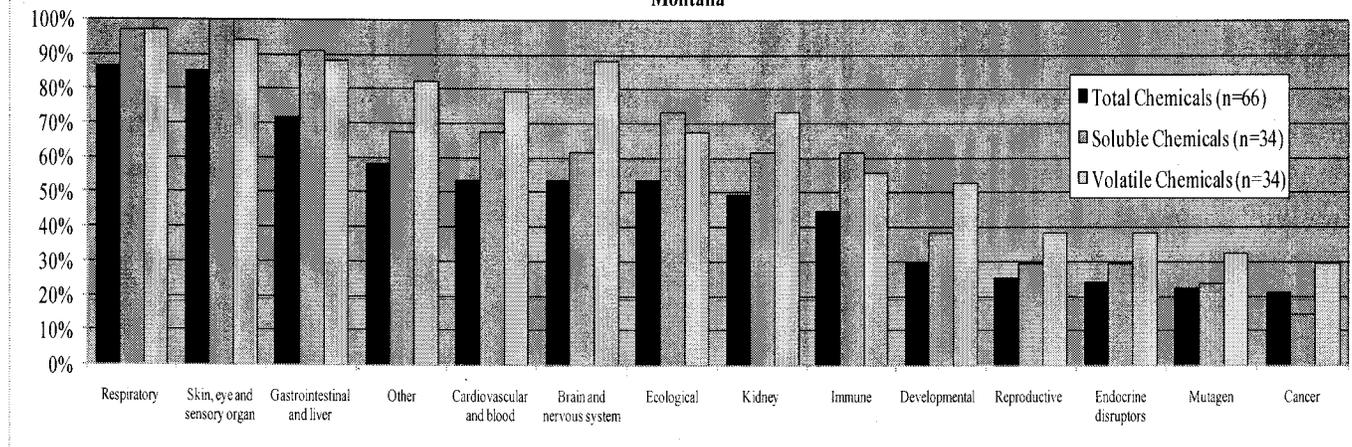
The health effects on the left side of the figure are those effects that are more likely to appear immediately or soon after exposure. These effects include symptoms such as burning eyes, rashes, coughs, nausea, vomiting and diarrhea. The health effects on the right side of the figure are long term and would tend to appear months or years later, such as some cancers, the results of organ damage, harm to the reproductive system, or developmental effects as the result of prenatal exposure, all of which were associated with over 20% of the chemicals in this analysis.



Thirty-four (51%) of the chemicals with CAS numbers are water soluble. When examined alone (Figure 7), they produce a similar profile of health effects as all the chemicals combined, but with higher percentages in every category except cancer. Notably, 100% of these chemicals can harm the skin, eyes or sensory organs.

Approximately 51% of the chemicals with CAS numbers are volatile (Figure 8); in other words, they can become airborne. Over 97% of these chemicals are associated with respiratory effects. Ninety-four percent can harm the eyes, skin, sensory organs, and 88% affect the gastrointestinal tract or liver. Compared with the soluble chemicals, far more of these chemicals (88%) can cause harm to the brain and nervous system. Seventy-nine percent can harm the cardiovascular system and blood and 74% of the chemicals can harm the kidneys. Overall, the volatile chemicals produce a different profile with higher percentages than the water soluble chemicals. Because they can readily become airborne and can be inhaled as well as swallowed, and can reach the skin, the potential for exposure to these chemicals is greater.

Figure 8: Profile of Health Effects of Volatile & Soluble Chemicals with CAS Numbers Used in Oil & Natural Gas Production in Montana



COMMENTS

The health effects summary for the chemicals used in Montana is not a weighted analysis. Each chemical is included only once in the summary whether it is in only one product or in many. Some of the most prevalent chemicals are among those associated with the most health categories. Two of these are methanol and naphthalene.

Methanol is reported in 15 products on this list. Both volatile and soluble, methanol is readily absorbed by inhalation, ingestion and dermal exposure. Methanol is associated with all of the health categories except cancer, and less than an ounce can be fatal. Some of the most prominent consequences of exposure are damage to the eyes (blindness), the nervous system, the liver and kidney. It also causes birth defects.

The Agency for Toxic Substances and Disease Registry (ATSDR)² reports that naphthalene (found in 9 products) can cause hemolytic anemia, lung damage and possibly cancer. It has also been found to cause cataracts. Like methanol, naphthalene can be absorbed by the body through inhalation, ingestion and dermal exposure. It was associated with all 14 health effect categories in this analysis and can adversely affect the developing fetus.

² Agency for Toxic Substances and Disease Registry. U.S. Department of Health and Human Services. 2005. Toxicological profile for Naphthalene.

Two products on the Montana list are biocides. These products are extremely toxic, with good reason. Bacterial activity in well casings, pipes and joints can be highly corrosive, costly and dangerous. Bacteria can also alter the chemical structure of polymers and make them useless. Nonetheless, when these products return to the surface, either through deliberate retrieval processes or accidentally, they pose a significant danger to workers and those living near the pad and evaporation ponds. Biocides can also sterilize the soil and inhibit normal bacterial and plant growth for many years.

FOR FURTHER CONSIDERATION

Prior to use, these products must be shipped and stored before being transported to the well site. They pose a hazard on highways, roads and rail systems, as well as to communities near the storage facilities.

Fracturing, frac'ing, and stimulation are terms used to describe a process commonly used to facilitate the release of the gas and to improve production. In this process up to a million gallons or more of fluid under extremely high pressure are injected underground to open up fractures in the strata being mined. The gas industry claims that 70% of the material it injects underground is retrieved, but have provided no actual studies to confirm their estimate. At some locations, because of regional differences in geology and technology, 100% of the injected fracturing fluids may remain underground.

In addition to fracturing fluids, underground water, produced water that comes off the gas, drilling muds and cuttings of rock and debris from the well bore may be deposited into pits on the well pad. Evaporation allows toxic, volatile chemicals to be released into the air, and it concentrates the non-volatile chemicals in the pits. Technology is available to re-inject the recovered fluids on site, pipe it to a central re-injection well, or to use a closed loop system where the liquids are reused and not allowed to evaporate on site.

After development ceases on a pad and the wells go into production, the residues in the pits are often bulldozed over. It is impossible to predict how long the buried chemicals will remain in place. Highly persistent and mobile chemicals could migrate from these pits into underground water resources, or gradually surface over time. When the fluids evaporate from open pits, their condensed residuals are taken off-site and re-injected in the ground, or "land farmed" where they are incorporated into the soil through disking. Here, toxic metals and silica fines could continually build up in the disked soils and be mobilized on dust particles.

For the life of a gas well in most regions, water is stripped from the gas before it enters the delivery pipeline by an evaporation unit. These evaporation units are connected to condensate water tanks near the well heads where this contaminated water is stored. In some instances the condensate water is re-injected on site or piped to a central re-injection well. In other instances, water levels are monitored in the condensate tanks and the water trucked to large open-pit, waste facilities where the water and volatile chemicals escape into the air. This activity will continue until the well stops producing gas, which could be as long as 20 to 25 years.

Cumulative exposure impacts are not addressed in this analysis; however, the accompanying EXCEL spreadsheet provides a hint of the combinations and permutations of mixtures possible and the possible aggregate exposure. Each drilling and fracturing event is custom-designed depending on the geology, depth and resources available. The chemicals and products used, and the amounts or volumes used, can differ from well to well. In addition, the fluids or vehicles that make up the balance of the full composition of a product frequently are not provided, and nowhere are there data accounting for the fluids that make up the million gallons of fluid used. Complete records for each well must be kept for a realistic picture of what is being introduced into watersheds, air, and soil. This information should include the exact location of the well (state, county, township, section, latitude, longitude, etc.), the complete formulation of every product used at each stage of development and production, the weight and or volume of each product used, the composition of the fluids comprising the total volume injected underground, the depths at which material/mixtures were injected, the amount and composition of the recovered liquids, and their disposal method and location. The hazard posed by natural gas operations to our health and the environment requires full disclosure of this information.

DEP drops Dimock waterline plans; Cabot agrees to pay \$4.1M to residents

By Laura Legere, Staff Writer), Published: December 16, 2010

The Department of Environmental Protection has dropped its plans to build a 12.5-mile waterline from Montrose to Dimock Twp. in exchange for Cabot Oil and Gas Corp. agreeing to pay \$4.1 million to residents affected by methane contamination attributed to faulty Cabot natural gas wells.

The settlement, announced Wednesday evening, also calls for the Texas-based driller to pay the state's environmental oversight agency \$500,000 to help offset the cost of the department's investigation into the stray gas.

Each of the 19 families affected by the methane contamination in their water supplies will receive an amount equal to twice the value of their home, with a minimum payment of \$50,000. The amounts are typically over \$100,000 and often more than that, DEP Secretary John Hanger said.

"The 19 families in Dimock who have been living under very difficult conditions for far too long will receive a financial settlement that will allow them to address their own circumstances in their own way," he said.

The settlement also calls for Cabot to offer and pay to install whole-house gas mitigation devices in each of the 19 affected homes - devices that were earlier rejected by many of the families as unwieldy and inadequate. Other Dimock families have accepted the devices and said they helped address their water problems.

The agreement is a bitter one for families who were looking forward to the secure supply of clean water. It also opens the door for Cabot to resume operations in a 9-square-mile area of the township around the affected homes that has been off-limits to drilling since April. The company must first comply with the terms of the settlement, including ensuring gas does not migrate from its wells, Mr. Hanger said.

Cabot said it plans to resume hydraulic fracturing in the area in the first quarter of 2011 and begin drilling there again in the second quarter.

"We have been committed to responsible operations within Susquehanna County, and we have redoubled our efforts with the Pennsylvania Department of Environmental Resources to resolve past issues," Cabot CEO Dan O. Dinges said in a statement Wednesday night. "Today's announcement signifies a tremendous effort on all sides to move forward with resolution and closure."

DEP has been investigating methane contamination in Dimock water supplies since January 2009, when a blast blew a concrete cover off a residential well. The agency has

since traced the methane in the aquifer to improper casing and excessive pressures in Cabot's wells.

Cabot has denied that it caused the contamination, which it says is naturally occurring.

In a press release, the secretary attributed the need for a settlement to "the opposition to the planned waterline and the uncertain future the project faces."

The state's infrastructure investment board, Pennvest, last month approved an \$11.8 million package of grants and loans to fund the waterline project, which was to have been constructed and maintained by Pennsylvania American Water Co. DEP planned to sue Cabot to recover the cost of the line.

But opposition to the line was loudly raised by Cabot as well as residents and elected officials both within and outside Susquehanna County, who called the project a misuse of public funds.

Mr. Hanger said it became clear the waterline would not be built after Republicans won control of both the governorship and the General Assembly during the November elections.

"Cabot's opposition was the opposition of elected members of the General Assembly, whom we respect. Two sit on the Pennvest board and voted against the waterline," he said, naming state Sen. Donald White, R-41, Indiana, and state Rep. Dick Hess, R-78, Bedford.

"It is quite likely that their views will in fact be in the majority come January at Pennvest," he said.

He called the settlement the strongest financial remedy DEP had ever obtained for families impacted by environmental damage. The settlement, which is between only DEP and Cabot, does not preclude Dimock residents from continuing with a lawsuit many families filed against Cabot alleging damage to their health and property because of the company's operations.

"I'm hoping now that everybody can turn the page and move towards a new day," Mr. Hanger said. "I hope, I believe that Cabot is going to operate differently. I hope that this is a part of making the damages that these 19 families have suffered better."

But Craig Sautner, one of the affected residents who is also part of the suit against Cabot, said he feels betrayed by the secretary's decision, especially after the families were given Mr. Hanger's public support and positive signs about the waterline project moving forward. He is also not certain how he will get clean water once Cabot stops delivering the temporary replacement supplies it has provided for over a year.

"A lot of hard work, a lot of fighting, to get sold down the river," he said. "How does the wrong win?"

A Toxic Spew?

Officials worry about impact of 'fracking' of oil and gas.

NEWSWEEK

by Jim Moscou, August 20, 2008

Cathy Behr says she won't forget the smell that nearly killed her. An emergency-room nurse in Durango, Colo.'s Mercy Regional Medical Center, Behr was working the April 17 day shift when Clinton Marshall arrived complaining of nausea and headaches. An employee at an energy-services company, Weatherford International, Marshall, according to Behr, said that he was caught in a "fracturing-fluid" spill.

[Fracturing chemicals are routinely used on oil and gas wells where they are pumped deep into the ground to crack rock seams and increase production.] The chemical stench coming off Marshall's boots was buckling, says Behr. Mercy officials took no chances. They evacuated and locked down the ER, and its staff was instructed to don protective masks and gowns. But by the time those precautions were enacted, Behr had been nursing Marshall for 10 minutes--unprotected. "I honestly thought the response was a little overkill, but good practice," says Behr, 54, a 20-year veteran at Mercy.

A few days later, Behr's skin turned yellow. She began vomiting and retaining fluid. Her husband rushed her to Mercy where Behr was admitted to the ICU with a swollen liver, erratic blood counts and lungs filling with fluid. "I couldn't breath," she recalls. "I was drowning from the inside out." The diagnosis: chemical poisoning. The makers of the suspected chemical, Weatherford, tell NEWSWEEK that they aren't sure if their brand of fracking fluid can be blamed for her illness.

Throughout the Rocky Mountain states, Behr's run-in with fracturing fluid is getting a lot of attention and exacerbating already frayed nerves. After nearly eight years of some of the most intense oil and gas development ever recorded in the American West, concerns over the environmental and health impacts are bubbling over. On Tuesday, Colorado's top oil and gas regulatory authority—the Colorado Oil and Gas Conservation Commission (COGCC)—endorsed a sweeping set of rules that environmentalists call long overdue; industry warns of dire economic impacts.

And the stakes are getting higher. Last week, against public protests by much of the state's congressional leadership and governor, the federal Bureau of Land Management sold off drilling leases in a wilderness area called one of the region's most pristine ecosystems and which is home to enough natural gas to power Colorado for 34 years. "It's just huge," says Gwen Lachelt, executive director of the Oil and Gas Accountability Project (OGAP), a nonprofit regional watchdog group, of the recent oil and gas plays in the state. "All eyes are on Colorado right now."

These have been boom years for the West. From New Mexico to Montana, more than 33,000 new oil and gas wells have been approved since 2001. Last year, nearly 90 percent of onshore federal drilling permits were issued in the Rockies. In the heart of the

rush is Colorado. A 2007 survey from the Fraser Institute, an energy think tank, put the state as the No. 1 global spot to explore and develop oil and gas.

Central to that development is the use of fracking fluids. Largely unregulated, they've been employed by the energy industry for decades and, with the exception of diesel, can be made up of nearly any set of chemicals. Also, propriety trade laws don't require energy companies to disclose their ingredients. "It is much like asking Coca-Cola to disclose the formula of Coke," says Ron Heyden, a Halliburton executive, in recent testimony before the COGCC. Despite its widespread use and somewhat mysterious mix, fracturing fluid was deemed in 2004 by the Environmental Protection Agency as safe for the environment and groundwater. Dave Dillon, the COGCC's top engineering manager, says nearly every one of Colorado's 35,600 wells are "fracked" and that a minimum of 100,000 gallons are used per well, resulting in millions of gallons pumped into the ground each year. And since it's typically pumped far below groundwater tables, Congress exempted fracking fluids from the Safe Drinking Water Act in 2005.

The chemical that was allegedly on Marshall when he arrived at the Mercy Regional Medical Center, was ZetaFlow, a chemical made by Weatherford. In a copy of its Material Safety Data Sheet—which details ingredients, health warnings, fire hazards and more—ZetaFlow contains methanol and two undisclosed "proprietary" compounds. The document also warned that ZetaFlow can be an "immediate" and "chronic" health hazard. Prolonged exposure can cause kidney and liver damage, irritate lung tissue, decrease blood pressure, and result in dizziness and vomiting—all symptoms Behr experienced according to her medical records. Her physician wrote that her symptoms were "entirely consistent with exposure [to ZetaFlow] from all the information we were able to gather." As for ZetaFlow's impact on the environment, according to its data sheet, "no product information is available."

Marshall, a 31-year-old Aztec, N.M., resident, spoke with the Durango Herald last month and says he doubts that ZetaFlow sickened Behr. "I'm not saying that nothing did happen to her," he told the newspaper. "I'm just saying ... I didn't have any of it on me. I did not take any chemical into that hospital." The Durango Fire and Rescue Authority did however confirm that they were called to aerate the ER. NEWSWEEK was unable to reach Marshall for comment.

Weatherford spokesperson Christine McGee says the company has had no issues with ZetaFlow in its three years of use. "It's very unfortunate [Cathy Behr] was ill," McGee says. "But I think at this point I can't make a statement about the link to her being ill. I don't think anybody is sure right now."

What is clear is that 130 gallons of concentrated Zetaflow was released, says BP, which operates the well where the spill occurred. The international oil and gas giant has used Zetaflow at other drill sites, but NEWSWEEK has learned that the company is suspending its use. BP spokesman Daren Beaudou says it's trying "better understand this product." He added: "We leave it to [Weatherford] to adhere to the regulatory standards." Also, this month La Plata County commissioners, home to Durango, are considering a

new regulation that would require oil and gas companies to reveal fracking fluid chemicals to emergency-room workers if someone is exposed. "It's a public-health issue for us. We don't know what the chemicals are and what can happen," says Wally White, county commissioner for La Plata County. A similar rule requiring companies to keep an inventory of chemicals at well sites was endorsed by the COGCC this week. A final vote is expected in September.

How often workers and communities are exposed to fracturing fluids, and the chemicals in them, is unknown. One study by Lachelt's OGAP reported Colorado had about 1,500 reported spills of various types, including fracturing fluids, in five years. Nearly 800 spills were identified in New Mexico. But, as the Behr case demonstrates, some fracturing fluid spills and worker contamination may be falling through regulatory cracks. While numerous government guidelines require contaminate spills and worker injuries be reported, NEWSWEEK has learned that not a single incident report was filed with any government agency by Weatherford or BP documenting the April 17 spill, nor may either company have been required to do so. The federal Occupational Safety and Health Administration, the Environmental Protection Agency and the state's COGCC all tell NEWSWEEK that the incident falls outside their regulatory jurisdiction, or was not significant enough to trigger reporting requirements. Moreover, Marshall was contaminated on a well site located on the Southern Ute Indian Reservation, putting federal, state and local oversight further out of reach. (The Southern Ute authorities say they were never notified of the spill either.) The Colorado offices of the EPA and OSHA did launch investigations this month.

For state health officials, the chemical exemptions, regulatory loopholes and missing data are a concerning mix. "We are just working in the dark," says Dr. Martha Rudolph, director of environmental programs for the Colorado Department of Public Health and Environment. "We don't know the impact on the potential health on humans might be. We need to." La Plata Commissioner White is more succinct: "I think this is a travesty," he says. "Somebody has dropped the ball."

Meanwhile, Behr returned to work at Mercy Hospital only last month. State and federal regulators, hospital officials and Behr have yet to learn what chemicals made her so ill. She says she worries about the long-term effects of her exposure, but harbors no ill-feelings toward the industry, noting the jobs and economic benefit it has brought to her area. "I always thought that the industry probably took chances," she says. "But I always thought someone was watching them. I really did think that."

Woman who lived near Rifle gas fields dies

By John Colson

Post Independent Staff

Posted: 11/17/2010 10:56:23 AM MST

Updated: 11/17/2010 10:58:55 AM MST

Elizabeth Chris Mobaldi at her home in Grand Junction a couple of months ago.
(submitted photo | via Post Independent)

A woman who grew gravely ill after living near gas drilling activities in the Rifle area has died in Grand Junction, to where she and her husband moved to get away from the rigs.

Elizabeth "Chris" Mobaldi, 63, died on Nov. 14, at 4:40 a.m., after a lengthy battle with a rare and persistent tumor of the pituitary gland, according to her husband, Steve.

Industry representatives have long argued that there is no conclusive evidence that proximity to gas wells has adverse effects on the environment or on human health.

According to testimony by Mobaldi before the U.S. House Committee on Oversight and Government Reform in Washington, D.C., the couple suffered symptoms such as headaches, burning eyes and skin, which they believed were related to the drilling rigs as close as 300 feet from their home.

A physician who treated Chris Mobaldi, Dr. Kendall Gerdes of Colorado Springs, said, "When I first met her ... I thought it must be some kind of Eastern European thing."

Asked if he agrees with Steve Mobaldi's assertion that the symptoms are in some way related to exposure to gas drilling activities, Gerdes said simply, "I do."

State needs to stay on top of oil

Tribune editorial | Posted: Sunday, November 28, 2010 2:00 am

Crude oil production tapping the Bakken Formation has been very successful. More than 159 drilling rigs are working in North Dakota right now, an all time high. Production is at record levels, as are permits and producing wells. The state now ranks fourth among states in oil production. State government has been operating with an open throttle when it comes to oil exploration and production. The oil industry has insulated the state from the national recession. It has created a state budget surplus. Unemployment here is the lowest in the nation.

There has been some concern, given the enthusiasm for oil dollars, that the state would merely roll over for the energy industry when it comes to regulation. Two recent spills at fracking wells suggest otherwise.

With all that activity in the state's oil patch, it's not surprising there have been "incidents." A rupture at a well near New Town occurred on Nov. 20, in which more than 6,000 gallons of chemical-laced water and oil were spilled before it was temporarily capped Tuesday. And there was an earlier blowout at a well near Killdeer in September that spilled about 2,500 gallons of water and oil. The spills were contained in both cases.

Contained or not, the state Department of Mineral Resources' director Lynn Helms says his agency is preparing a complaint against Denbury Resources of Texas, operator of the well near Killdeer where an apparent violation of state regulation led to the spill. And an investigation has just begun involving Whiting Petroleum Corp., the operator of the ruptured well near New Town.

Further, Helms says there will be an in-house review of drilling policies.

It's not a matter of being tough on oil. It's a matter of having well-reasoned policies that protect all of the state's resources, and then enforcing them.

In the case of Denbury Resources, its well has only just been brought back on line. The company lost nearly two months of production while fixing problems with the well. Smooth operation benefits the oil company as much as it does the state and public.

The potential conflicts between oil companies and the state, when it comes to regulations, support Lt. Gov. Jack Dalrymple's plan to create a new office of energy in the Commerce Department, separating promotion of the state's oil resource from its regulatory responsibilities, which will be left with the Industrial Commission.

The Bakken has been great for the state and continued support of oil development in western North Dakota is appropriate. But we can't forget our responsibilities to the oil industry, the public and the environment. The sheer volume of activity makes it a challenge. North Dakota regulators need to be fair and firm in their dealings with industry.

Private_Lands_gas_lease

Sate_Lands_gas_leases_2010

ROADCLASS

Limited access highway

US highway without limited access

State and secondary highway

Local road or city street

Four-wheel drive trail

Streams_Water

Easements

ownerclass

<all other values>

OwnerClass

State Government

Local Government

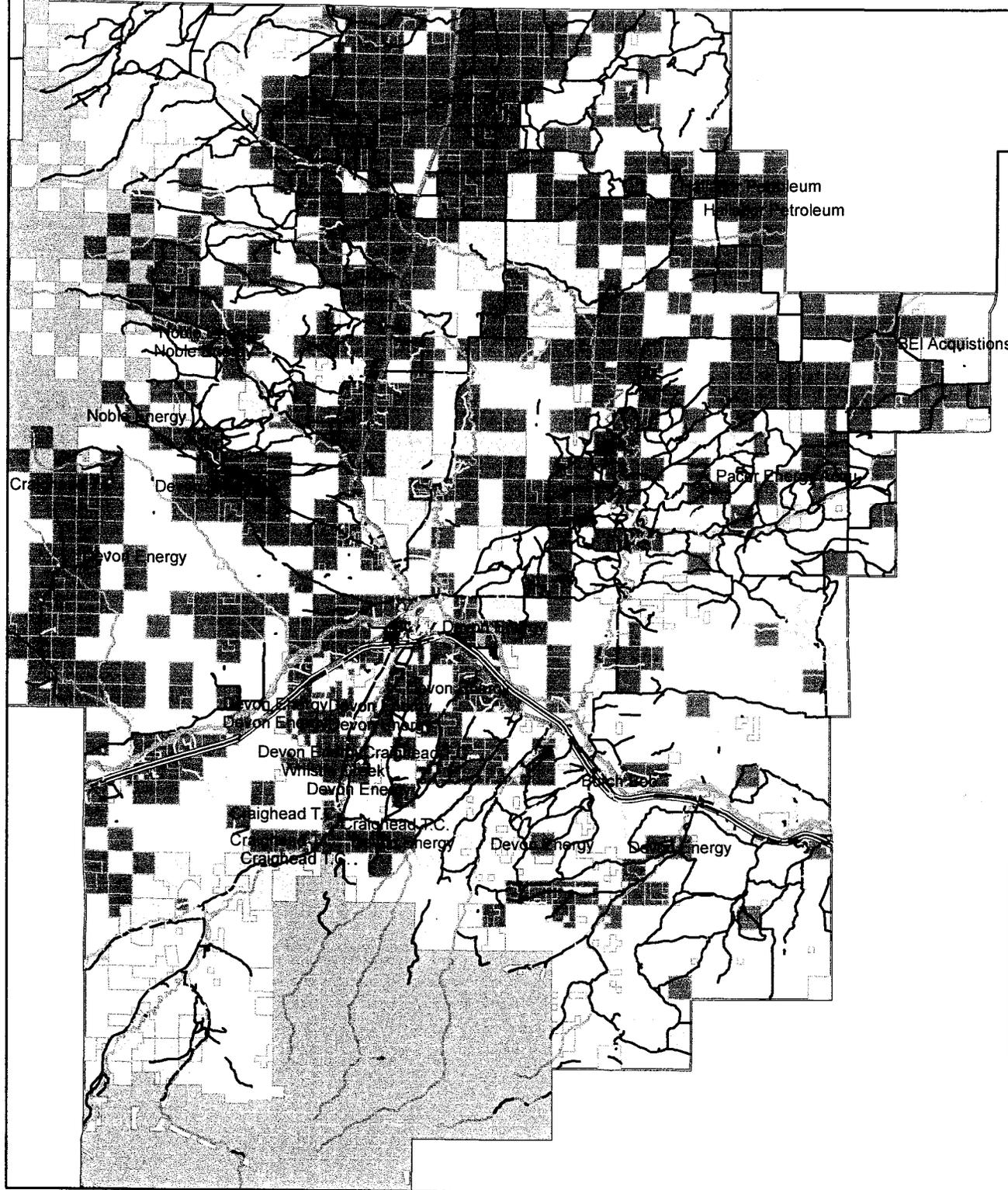
USDA Forest Service

USDI Bureau of Land Management

Counties

ROAD2000

<all other values>



Sweet Grass County