From:	Dan Frazier
To:	#LandUsePlanner
Subject:	Oil and Gas Regulations.
Date:	Tuesday, September 25, 2012 1:16:27 PM

Dear Planning Board,
When listening to the representatives of the Oil and Gas industry, they seem to want us to believe that what they are doing is safe.
Before you take them at their word, please do a bit of investigation.

Jefferson Dodge and Joel Dyer, writing for the Boulder Weekly, have looked into the practice of injection wells. Please read their article. Afterwords, you might even want to even contact them.

Dan Frazier
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Found in the Thursday, September 20, 2012 issue of the Boulder Weekly.

Waste injection wells: The Earth's invisible dump

Waste injection wells: The Earth's invisible dump

With more than 30 trillion gallons of toxic waste having been injected into the inner earth, what happens if our belief that what goes down can't come up is wrong?

By Jefferson Dodge and Joel Dyer

April 10, 1967, was no ordinary day in Boulder County.

What started out like any other spring morning quickly became anything but, as buildings began to shake and the sound of broken glass filled the air. Firsthand accounts describe how people poured from buildings onto the streets looking bewildered by what they had just felt. Children were sent home from area schools because brick walls had cracked and were feared unstable. Many suspected there had been some type of explosion, but in reality, Boulder and the rest of the Denver metro area had been hit by an even rarer event, an earthquake measuring 5.0 on the Richter scale.

Earthquakes are an oddity in Boulder, but the tremor would turn out to be the least bizarre part of the story. The real kicker, which would not come to light until years later, was that the whole affair was self-inflicted. The shaking of the Front Range had been the result of a man-made, or at least man-caused, earthquake with implications that are profound for all of us today and future generations as well.

Like previous decades, the 1960s were a nightmare for the environment. Toxic waste from chemical, pharmaceutical and other dirty manufacturing processes were still, for the most part, being dumped directly onto the land or into our waterways with both impunity and disastrous consequences. Fortunately, the ’60s also marked the awakening of the modern environmental movement, thanks to the likes of Ladybird Johnson with her focus on anti-littering and *Silent Spring* author Rachel Carson’s dire warnings, not to mention a few million hippies determined to reconnect with nature in one way or another. The bottom line from the decade of free love is that Americans woke up and got fed up with the toxic dumping that was taking place in full sight of anyone willing to look, and as a result of the backlash of this new movement, industry after industry started to get the message that “the times they were a-changin’.”

But what were polluters to do with all of that toxic waste? One part of the answer was obvious; it had to be gotten out of sight and thereby out of mind. The rest of the equation proved to be a little trickier to solve.

But in 1961, the federal government, by way of the U.S. Army, found a way to make its toxic waste seemingly vanish from the landscape and the public's scrutiny. Many industries would subsequently follow the government's lead. The Army decided to borrow a technique that the oil industry had been using since the 1930s to get rid of the excess water it produced as a byproduct of oil and gas extraction. It decided to inject the worst of its toxic chemical waste being stored at the Rocky Mountain Arsenal in Commerce City deep into the Earth as a means of permanent storage.

The Army drilled a 12,045-footdeep well and started pumping its waste liquids into the permeable rock layer at that depth. The toxic brew, which consisted of everything from pesticides to nerve gas to rocket fuel, was being injected into the new disposal well under great pressure.

Most folks think of rock as solid and impenetrable, but sandstones, shales and limestones are actually porous and contain fractures that allow for the entrapment and even the flow of liquids. With enough pressure behind it, that flow can be increased so that millions of gallons of liquid waste can be forced into such formations. In March of 1962 the Army started injecting toxic waste into the well. What happened next was unexpected.

On April 24, 1962, at the Cecil H. Green Geophysical Observatory at Bergen Park, an earthquake measuring 1.5 on the Richter scale was recorded with an epicenter in the area of the arsenal, where such events were unheard of previously, and it wouldn't be the last such mysterious shaking in that area. By the end of that year, 190 earthquakes centered under or around the arsenal had been recorded. All of the quakes were very small until Dec. 4, 1962, when a moderate quake hit, causing structural damage to homes in Irondale, a small enclave located on the northwest edge of the arsenal.

By the time it was all said and done, more than 1,300 quakes would rock the area between 1963 and 1967, three large enough to cause damage to buildings. The 5.0 earthquake that rocked Boulder in 1967 was followed a few weeks later by what is still the largest quake to ever hit the Front Range since at least the late 1800s, a 5.3 shaker that was felt from Goodland, Kan., all the way to Laramie, Wyo.

While most people, even those at the U.S. Geological Survey, were puzzled by these earthquake phenomena, the Army was not. They had been tracking and studying the earthquakes in association with their waste disposal well, particularly the pressure and volumes being injected. The Army wasn't sure how exactly it was causing the quakes, but it did understand that its disposal well was the source of the tremors. As a result, it stopped using the well for disposal to bring an end to the quakes. But while the earthquake activity slowed, it didn't completely subside until the Army actually reduced the pressure in the well by pumping out some of its waste.

The Rocky Mountain Arsenal disposal well experiment laid the groundwork for how polluting corporations could get rid of their toxic waste going forward, and uncovered one of the problems that could eventually spell disaster for U.S. drinking water supplies. And it's not the potential for earthquakes that poses the biggest risk for future water contamination. The tremors are only a symptom of a much larger problem: The rock formations that we are counting on to hold our most dangerous toxic waste forever are actually full of faults and fractures that have never been mapped and that could allow some of that waste to escape upward into our underground aquifers.

Like the arsenal well, other deep disposal wells, including one on Colorado's Western Slope, located 110 miles southwest of Grand Junction and known as the Paradox Valley Unit (PVU), have now been studied by the federal government for more than 25 years for their ability to trigger earthquakes. The PVU has triggered more than 4,000 quakes since 1990 and scientists can, to at least some degree, control the quakes' size and frequency, or eliminate them altogether by adjusting the liquid injection rate and pressure of the well. But the real breakthrough is in understanding how the injection wells cause earthquakes.

Scientists believe that injection wells cause earthquakes by forcing apart and lubricating already existing faults in the underground rock formation being injected. It has been described as something similar to an air hockey table, where the puck doesn't slide until the air creates a space between the table's surface and the puck.

It has been assumed for decades that all of the deadly toxic waste that has been and continues to be injected into deep formations will never be able to migrate back up to the shallower groundwater aquifers that provide us with most of our drinking water. It has been assumed by everyone from polluting-industry representatives to the Environmental Protection Agency (EPA) that the layer of rock being injected with waste and those layers above the injection zone form a perfect barrier that will always prevent upward migration into groundwater aquifers.

But as is often the case when humans do things with the expectation of "always and forever," new information has a nasty habit of changing the equation. And using the inner earth as a giant toxic dump is starting to look like no exception to the rule, as new research is beginning to cast doubt on our long-held assumption that what goes down can't come back up. This is bad news, considering the tens of trillions of gallons of deadly toxins that are already swimming around beneath our feet.

Out of sight, out of our minds

According to an investigative report released in June by Abrahm Lustgarten of ProPublica, "Over the past several decades, U.S. industries have injected more than 30 trillion gallons of toxic liquid deep into the earth, using broad expanses of the nation's geology as an invisible dumping ground."

So just how big of an operation is this inner earth toxic dump? There are now more than 680,000 disposal wells nationwide that are supposed to be regulated by the EPA. It is a daunting task to be sure, and one that the EPA has neither the manpower nor the funds to do properly.

During its investigation of the EPA's oversight of the nation's injection wells, ProPublica found that the agency was unable to provide basic information to its journalists, such as how many disposal wells fail and how often such failures occur. The investigative news organization also reported that the EPA "has not counted the number of cases of waste migration or contamination in more than 20 years," and that "the agency often accepts reports from state injection regulators that are partly blank, contain conflicting figures or are missing key details."

It also found that the new data gathering system the EPA launched in 2007 to create a central database for information on injection wells was being used by "less than half of the state and local regulatory agencies overseeing injection." It's shocking but not surprising to those who report on the often inefficient oversight of the EPA that few regulators were contributing to the database, and that as of last year, it still contained complete information on a very small number of the nation's deep, toxic-waste injection wells.

The agency classifies disposal wells in five categories, I to V. Category V wells deal with non-hazardous waste and include common disposal systems like storm-water drainage wells, cesspools and septic system leach fields.

At the other end of the spectrum are class I disposal wells, which are deep wells used to inject many of the nastiest toxins known to man thousands of feet underground for the purposes of perpetual storage. Colorado has only six class I wells, with the nearest one to Boulder County located just a few miles east of Longmont on Weld County Road 19.

The EPA specifically created the class II category of disposal wells for the oil and gas industry, which the agency estimates uses the wells to inject 2 billion gallons of drilling waste per day back into the ground. Class II wells are designed to pump produced water — usually a salty brine that includes low levels of radioactivity and hydrocarbon contaminants — back into the producing oil or gas formations to enhance secondary recovery or, in the case of produced

water that contains toxic fracking fluids, to inject it deep underground where it is intended to be stored forever in the same fashion as class I toxic wastes. On average, eight barrels of produced water are generated for every barrel of oil because most oil-bearing zones hold more salt water than they do oil.

The only reason that the produced water containing toxic fracking fluid isn't required to be disposed of in the more closely regulated Class I wells instead of class II is that then-Vice President Dick Cheney led the push to exempt fracking fluids from the Clean Water Act during the oil-friendly Bush years. He did this despite the fact that fracking fluid has more than 500 different chemicals, including known carcinogens like benzene. It was a wink and a nod to his friends in the industry that may come back to haunt all of us, including our children and grandchildren, if our decision to perpetually store trillions of gallons of deadly waste underground turns out to have been based on flawed geologic assumptions.

Different pathways to our water

There are currently more than 150,000 class I and II disposal wells in the U.S., most of which are injecting industrial wastes into underground formations for the purpose of perpetual storage. But increasingly, some of that waste is finding its way back up and out into the

groundwater and surface environment.

The best-documented escape route for toxic waste is by way of faulty disposal wells. Because many of the liquids being injected into the earth are highly corrosive, they wreak havoc on the metal pipes used to transport them downward. And then, of course, there are human errors as well as sloppy drilling practices that fail to seal off the escape routes for the highly pressurized waste stream.

The multi-year investigation by ProPublica found a shocking number of documented releases of toxic waste from in and around injection wells. The investigation examined the case histories of more than 220,000 well inspections and found that structural failures within the injection wells were common. “From late 2007 to late 2010, one well integrity violation was issued for every six deep injection wells examined — more than 17,000 violations nationally. More than 7,000 wells showed signs that their walls were leaking. Records also show wells are frequently operated in violation of safety regulations and under conditions that greatly increase the risk of fluid leakage and the threat of water contamination.”

The EPA, often by way of state regulators authorized to assume the federal agency’s inspection and enforcement responsibilities, requires class I wells to be inspected annually, while class II wells only get inspected once every five years. This means that when a leak is found, it may well have been allowing the escape of waste for several years prior to its discovery. That’s bad news, considering how many leaks are being identified.

ProPublica found that in just the year 2010, for example, the EPA’s testing of disposal wells “led to more than 7,500 violations nationally, with more than 2,300 wells failing. In Texas, one violation was issued for every three Class II wells examined in 2010 … Regulators say redundant layers of protection usually prevent waste from getting that far [into groundwater], but EPA data shows that in the three years analyzed by ProPublica, more than 7,500 well test failures involved what federal water protection regulations describe as ‘fluid migration’ and ‘significant leaks.’” But well leaks are only one of the potential pathways that injected toxic waste travels on its way back to the surface and potentially into our water. With our nation’s long history of hydrocarbon exploration and the current explosion in gas drilling, there are now literally tens of thousands of existing holes already drilled into deep rock formations, with thousands more being added every year. The Earth has become a geological pincushion.

All of this drilling, and now hydrofracturing (fracking), which intentionally cracks deep rock formations to make the passage of oil and gas through the rock more rapid, has changed the inner earth landscape in ways that even our best geologists can only guess about. No one knows to what extent new pathways back to our groundwater aquifers may have been created by all this oil and gas exploration, particularly with its new technologies of horizontal drilling and fracking.

Stefan Finsterle, a hydrogeologist at Lawrence Berkeley National Laboratory who studies how fluids move through rock, told Lustgarten, “There is no certainty at all in any of this, and whoever tells you the opposite is not telling you the truth. You have changed the system with pressure and temperature and fracturing, so you don’t know how it will behave.”

Because many class I and II wells are located in oil and gas country, it is becoming increasingly common for toxic waste being injected into deep formations under pressure to migrate and find its way back up towards the surface and underground aquifers by way of old abandoned wells in the area. Such events have occurred from Texas to Pennsylvania, with one abandoned well spilling waste that had been injected into a disposal well more than five miles away.

Many of the old wells are particularly vulnerable to this type of leak because they were never plugged or cased properly when their operators abandoned them, often decades ago. In Boulder County, for instance, there are an estimated 183 abandoned wells, and 68 of them were never plugged at all. If a well — abandoned, plugged, unplugged or currently producing — isn’t cased and cemented properly to a depth at least below the deepest known

groundwater aquifer, then any contamination coming back up the hole on the outside of the pipe due to the high-pressure injection of waste from a nearby disposal well will inadvertently get pumped directly into the aquifer without showing any evidence of such a leak on the surface. Such a pathway via old wells into a groundwater aquifer would likely go undetected until problems in drinking water supplies showed up many years later, and even then it would be impossible to trace the contamination back to its source, a bad reality for health officials but a convenient one for polluters, who more often than not these days see plausible deniability as a centerpiece of their business model.

So how often do oil and gas wells have inadequate cement and casing problems that could interact in this way with nearby disposal wells? No one knows. But as an example of a place where such research has actually been done, we can look at the numbers from Pavillion, Wyo. In Pavillion, the EPA believes that fracking fluid may have made its way into the area's groundwater. As part of its investigation looking for the pathway that would have made this contamination possible, the agency inspected the wells in the area. It found that out of the 169 wells examined, an unbelievable 167 had inadequate casing and cement to protect groundwater. An injection well anywhere near these 167 improperly cased and cemented would be disastrous. Unfortunately, new industry research confirms that bad drilling practices such as improper casing and cementing are all too common and can result in hydrocarbon and fracking fluid spills.

Another potential pathway that has been documented for waste from disposal wells to escape upwards from its rock trap is by over-pressuring the well. A recent report titled "Leakage Pathways from Potential CO2 Storage Sites in the Texas Gulf Coast and Implications for Permitting" found that over-pressuring disposal wells can damage nearby oil and gas wells, causing leaks even if those wells have been plugged to modern standards. The study also found that high pressure can crack rock formations and is a significant factor in how deep formations can become connected to shallower formations such as those that hold groundwater aquifers. This is why the EPA has strict requirements on how much pressure operators can use in their toxic waste disposal wells. So how careful are the companies to not use too much pressure? After all, the more waste they push into a well the more money they make. This financial reality may explain why the EPA has caught operators exceeding their legal pressure limits on their disposal wells more than a thousand times in the last five years alone.

And finally there is the earthquake-evidenced, naturally occurring fault pathway. Disposal wells are now suspected as the source of literally thousands of small earthquakes that are now being recorded all across the country in areas where oil and gas production are prevalent. As a risk in and of itself, the earthquake danger is small, but the tremors could easily further crack and weaken the plugs and cement jobs on nearby oil and gas wells, which could potentially cause leaks of toxic waste into groundwater aquifers.

The main threat exposed by the quakes is that there are unmapped, unknown faults and fissures in the very rock that we are counting on to protect us forever from the 30 trillion gallons of toxic waste we have pumped into the ground. The truth is, we have no idea when we drill a disposal well whether the rock we are pumping full of deadly toxins has faults that could release those toxins upward towards the surface.

Consider this assessment regarding unknown faults from the U.S. Geological Survey. "At well-studied plate boundaries like the San Andreas fault system in California, often scientists can determine the name of the specific fault that is responsible for an earthquake. In contrast, east of the Rocky Mountains this is rarely the case. All parts of this vast region are far from the nearest plate boundaries. … The region is laced with known faults, but numerous smaller or deeply buried faults remain undetected. Even most of the known faults are poorly located at earthquake depths. Accordingly, few earthquakes east of the Rockies can be linked to named faults. … In most areas east of the Rockies, the best guide to earthquake hazards is the earthquakes themselves."

Translation: The best geologists in the world can't know that a fault exists thousands of feet

below the surface until there is an earthquake that tips them off.

This potential for unknown and unmapped faults and fractures in rock formations helps to explain the findings of two new studies that have discovered that salty brine water suspected of originating from the Marcellus shale formation at 15,000 feet is making its way upward and into groundwater aquifers. This is happening even in areas where there has been no gas drilling, which indicates that the liquid is finding naturally occurring pathways from which to make its escape from the deep rock that, theoretically, according to the toxic waste disposal industry and the EPA, should have been inescapable.

The researchers can't say how long this ongoing upward migration of liquid takes, but they guess it could be anywhere from a few years to more than a century to get from down there to up here.

In Pavillion and other parts of the country, there are groundwater aquifers in gas country that contain contaminants such as methane. So how did it get there?

Gas companies claim they are not responsible for this contamination, and that it is instead naturally occurring. But what are the implications if they are correct? You can't have it both ways.

Polluters, particularly those from the oil and gas industry, cannot keep pumping billions of gallons of toxic waste into underground rock formations each day, either to frack the formation or to dispose of their fracking fluid permanently, all the while telling us that the practice is perfectly safe. They can't make this argument at the same time they are claiming that gas from these same formations is naturally escaping into groundwater aquifers.

If the gas can escape naturally, so can the toxic fluids the companies are forcing into the formation to fracture the rock under pressure. It is an illogical argument that no state or federal regulators seem willing to take into account when considering the potential risks of using the inner earth as the world's largest toxic waste dump. Even if it takes a century or more for the toxic stew we have been brewing beneath our feet for decades to begin to find its way through naturally occurring pathways and into our groundwater aquifers, that would mean that it could start showing up in the next 50 years or so. When considered along with all the man-made pathways that are already allowing the disposal wells to leak their waste, it is only a matter of time until we are all in real trouble, which is exactly the sentiment expressed by at lest one expert in a position to know.

"In 10 to 100 years we are going to find out that most of our groundwater is polluted," Mario Salazar, an engineer who worked for 25 years as a technical expert with the EPA's underground injection program, told ProPublica. "A lot of people are going to get sick, and a lot of people may die."

In a phone interview, Salazar told *BW* that theoretically, operators who pump fluids into the earth should be able to use pressure testing and other methods to detect whether any liquids are leaking out, but the system is not perfect and there is always room for error.

"People have thought about all of these things, and they have been put into regulations," he says. "Whether in fact the people that are implementing the program have the resources or the energy or the knowledge to be able to analyze or interpret the remote sensing data is another thing."

Salazar notes that the EPA's underground injection program is funded at around $10 million a year, "and that amount hasn't changed much since 1980, so we're talking 30 years, and you can do the numbers and you can see that in fact it's probably not adequate, when you're dealing with a very large universe and probably a miniscule amount of people doing the oversight and enforcement of these wells. The other thing is, the regulated community is extremely powerful and rich."

He says that even if contamination is detected, it's difficult to assign blame and determine

what caused the leak.

“If you look at cause and effect and the physics of this whole thing, there’s a pretty good chance that we’re going to find a significant number of contaminations that may be attributed to many other causes, that may be caused by many other things, but may also be caused by underground injections that were done improperly,” he says. “There are very few people looking, and even if they were looking, it’s almost impossible to, first, find a contamination plume and, second, to attribute that contamination plume to a very specific resource. A company can fight that forever, because there’s no way to determine if that [contamination] came directly from them or it came from somebody else, or it was present in the natural groundwater to start with. … When you’re about to lose maybe a billion dollars because you did something wrong, you’re going to fight it. Especially now that corporations are people.”

Salazar says there are simply too many variables to assume that no groundwater contamination will occur.

“If you add human nature, a lack of resources, no oversight and, in a certain way, a monetary incentive to do it the wrong way, then you have to wonder if things are going OK,” he explains. “Even if it’s done under the best possible conditions, there’s a good possibility that there is a flaw somewhere in this process. … The best we can do is properly fund a program like this and to properly support, politically and monetarily, the people who are trying to make sure our groundwater, which is 60 percent of the potable water in the world, is properly protected.”

And Salazar says that when contamination does occur, it will be the taxpayers who will be left paying the bill.

“Injection wells could be significant in possibly destroying a lot of potable water, or contaminating a lot of potable water,” he says. “Of course, you can always treat water, but it costs a lot of money. And guess who pays for that? Do you think the industry is going to pay for that? No, it’s you and me.

“It could be that injection wells will be found to have contaminated a lot of water, but nobody will ever be able to tell who did it, so what they will do is they will go ahead and develop more efficient ways of treating polluted groundwater so people can drink it.”

Indeed, there are other ways to deal with our nation’s toxic pollution than injecting it into the earth, but those other ways are more expensive. Perhaps it’s time to pay up.

Most people think that they live nowhere near a toxic dump. The truth is, nearly all of us live only a few thousand feet away from the largest, most dangerous toxic dump in the world. We’ve just been looking in the wrong direction.

Respond: letters@boulderweekly.com

From:	bob ross
To:	Boulder County Board of Commissioners
Subject:	Ban Fracking Now
Date:	Tuesday, September 25, 2012 10:14:09 AM

Dear Boulder County Commissioners,

Hydraulic fracturing (fracking) can contaminate our drinking water and harm our communities. Furthermore, the proposals to allow Boulder County Open Space to be fracked are inappropriate on land purchased with tax payer funds to be preserved for public recreation and the environment.

As your constituent, I urge you to impose a moratorium on fracking in Boulder County, so that you can investigate all options to place a permanent ban on fracking.

bob ross
904 rex st
louisville, CO 80027
3034646232

From:	Stroud, Sheree
To:	Toor, Will; Domenico, Cindy; Gardner, Deb
Cc:	Haverfield, Carrie; Hackett, Richard; Lanning, Meredith
Subject:	Comments on fracking and new process for extraction
Date:	Wednesday, September 26, 2012 4:17:28 PM

Troy Bachman called. He designs solar power systems for oil and gas industry. He was just in Wyoming and learned about a new alternative to fracking where in CO2 is injected instead of water. They are collecting CO2 and transporting in a pipeline. It's benign and the CO2 can be re-used. So, he wanted you to know about this. If anyone would like to learn more, his number is 303.604.1125.

From: Ollimaleya@aol.com
To: #LandUsePlanner
Subject: NO Fracking Way! ...Carolyn Usher
Date: Thursday, September 27, 2012 7:03:04 PM

Sorry, I forgot to identify myself: Carolyn Usher, 2210 Balsam Dr, Boulder

I was impressed by the depth and breath of the people who spoke against fracking during the Monday meeting, so I won't waste your time belaboring points already made but would like to add a few more. The initial 1 hour presentation preceding public comment was antiseptic, but in practice fracking isn't all it's "cracked" up to be.

1. Frack Tracks. In open land north of Keensburg, CO, there is what appears to be "frack tracks," evidence of illegal dumping of toxic waste from fracking. http://www.boulderweekly.com/article-9227-frack-tracks.html

2. Diminshed/Devalued Property. Setting up a local fracking operation will greatly diminish or completely devalue a home. Just ask the people in Pavilion, WY. http://www.boulderweekly.com/article-8818-fracking-lessons.html And even if the ill effects of fracking continue to be debatable, there will be the "perceived risk," discouraging the public from investing in housing or any other business for that matter.

3. Demand for Water. In years past, water surplus has been auctioned off to competing farmers. This year, for the first time, big oil bid against the farmers and won. And who do you suppose has the resources to out bid every time? Do you want to see our surplus water going to big oil or local farmers? And then there's the consideration of drought conditions in a semi-arid climate struggling against global warming and a burgeoning population.

4. Once You Frack, You Can't Go Back. Don't let this Pandora out of the box. This is going to be one of those, "If only we knew!" 20 years down the road. We do know, now. Don't let this become the next Valmont Butte debacle. http://www.boulderweekly.com/article-8818-fracking-lessons.html And when big oil has taken the last of the gas, what will they have left us with in CO?

5. Poor Return. Unlike drilling for oil, fracking is a dirty source of energy with a poor return for the investment.

6. Royalties vs Health. I heard a couple of people speak to their mineral rights, but since when do the rights of the few supercede the good (and health) of the many?

7. Air Pollution. We already know about below ground and surface pollution, but what about the air? Yes! To the naked eye, the stacks burn clean, but using infrared technology we can see emissions are clearly being pumped into the air.

A fracking proponent spoke to discouraging future fracking operations from coming here if regulations are too strict. GOOD. Let's tighten them up, better yet, join Longmont in banning it. What if every city in CO collectively chose to ban fracking? Could the state successfully bring to court, each and every city...and would they bother?

From:	Doug Grinbergs
To:	#LandUsePlanner
Subject:	County oil/gas extraction regulation updates
Date:	Monday, October 01, 2012 12:23:04 PM

To the Boulder County Planning Department and Planning Commission,

As Boulder County considers major updates to the oil and gas extraction provisions of the Land Use Code, I ask you to please consider the following points:

* When people take the huge step of selling a home and moving to another area because of oil and gas extraction infrastructure health and safety concerns, that's *one heck* of a no-confidence vote about the system we have.

* It behooves the government (at all levels) to provide a community that is truly healthy and safe - air quality, water quality, free from tanker truck spills, well explosions and fires - best practices and standards as deemed by health and safety scientists and regulators - and not the oil and gas industry or their paid consultants (you know, that thing about foxes guarding the henhouse).

* In the reading I've done, I've seen a rather wide range of ratios of site inspectors to wells. As a layperson, I have no clue as to how long it takes to inspect a well site, nor how often it needs to be done or how that changes over time, how easy it is for even a trained inspector to overlook something important, or how easy it is for a site operator to fudge something to sneak by on an inspection, but it seems obvious that a proper inspector workload is paramount for the health, safety and welfare of the community. I don't know to what extent a county can weigh in on this state issue, but I trust it's being considered.

* I can't help but wonder if there are important lessons we can - and should - learn from oil and gas industry insider whistleblower cases. It's one thing for the (rich and powerful) industry's well-trained spokespeople to try to (condescendingly) dismiss the seemingly legitimate emotions and concerns of the general public as foolish, hysterical overreaction. It's another thing to hear the process and infrastructure concerns of trained, experienced industry professionals.

* I've realized that Erie straddles two counties; for concerned Erie residents, I hope Boulder County can try to provide a healthy balance to "Welled" County's apparent oil/gas industry hyper-friendly pro-development environment.

In summary, to the extent possible, I hope the county will apply its talent, knowledge and experience to identify best practices and policies and help raise the bar on community health and safety protection from the oil and gas extraction industry, and what is sometimes perceived as un(der)-regulated, profit-driven gambling with public safety (if not altogether recklessness).

I thank you in advance for your attention and consideration.

--
Doug Grinbergs
530 W. Sycamore Circle
Louisville, CO 80027-2260
(303) 665-7086

From:	Amanda Papich
To:	Boulder County Board of Commissioners
Subject:	Citizens Concerned about Fracking/Feedback on Amendments to Oil and Gas Regulations (Docket DC-12-003)
Date:	Saturday, September 29, 2012 7:25:22 PM

Dear Boulder County Commissioners and Boulder County Planning Commission,

My name is Mandi Papich and I live in Lafayette, CO. I am a very concerned about hydraulic fracturing. I was at the Sept 24 hearing and want to give additional feedback on the Amendments to Oil and Gas Regulations.

It is apparent from the meeting that many Boulder County citizens want fracking banned. No one wants to deal with the hardships that Erie and Weld County are experiencing regarding water not fit to drink and air not fit to breathe. We all have a right to clean water and air, making this a civil rights issue.

If fracking cannot be banned, we at least need to put in place stricter rules on oil and gas companies to better protect our citizens. Here are some ideas that I will ask you to please consider:

· Tighter restrictions on leasing public lands to oil and gas, land use rules, and industrial activity.

· Restrictions on disruption of wildlife and wildlife migration by limiting the number of wells allowed in certain areas

· A complete ban on drilling in and near watersheds, creeks, rivers, mountain streams, etc.

· Revise setback rules to be at least 1,000 feet from all inhabited structures. Please consider the fact that medical marijuana businesses have to be 1,000 feet from schools. Even liquor stores have to be 500 feet from the boundary of a school. Why would a rule at least as restrictive not apply to ozone producing, water polluting wells?

· Restricted use of existing wells. There are currently no rules for existing wells that are already too close to structures.

· Zoning rules are needed on vertical and horizontal drilling.

· Air, water, and well inspections need to be compulsory and performed by independent third parties, not by operators. Inspections should be paid for by the operators. Inspections need to be frequent. Please consider that currently in Colorado, 1 inspector has the responsibility of inspecting 18,000 wells per year which is not physically possible.

· Require baseline water tests before fracking and require tests after as well so

we can finally prove how fracking is affecting our water and air

· Require closed loop systems banning open pits. Open pits leak carcinogenic chemicals into our ground water and air producing ground level ozone contributing to global warming and causing irreversible lung damage to our citizens.

· Require benign fluids for fracking instead of the toxic chemicals polluting our air and water.

· Create rules restricting where oil and gas companies can dispose of produced water. Please ban injection wells. Please remember that produced water can never be turned back to drinkable water. How will it be prevented from seeping into our ground water?

· Restrictions on purchasing water for fracking in Colorado. We should disallow oil and gas companies from purchasing water in Colorado. Remember, Colorado's oil and gas drilling consumes enough water for 296,100 people/year. Where is Colorado going to get the amount of water needed for fracking? Colorado simply does not have enough. We, the citizens have not given permission to oil and gas companies to use public water streams. Has Boulder County or Boulder City signed any contracts to sell water to oil and gas companies? We should refuse to sign any such contracts.

We need to extend the moratorium to allow more time for study of the effects of fracking on our water and air. The oil and gas companies have not proven that fracking is not harming our citizens.

Thank you,

Mandi Papich

mandi.papich@gmail.com

From: Erik Molvar
Subject: Elected official survey on hydraulic fracking issues
Date: Friday, September 28, 2012 2:59:48 PM

Dear Commissioners,

The Buechner Institute for Governance at UC-Denver, the National League of Cities, and the National Association of Regional Councils are gathering information on the obstacles that local and regional governing agencies have encountered when addressing hydraulic fracturing and their current methods for addressing those obstacles. The collected information will go into a report for regional and federal agencies and universities to generate further research interest in issues faced by local governing bodies surrounding hydraulic fracturing.

We have created an online survey to understand how concerns vary across the country and aid in the development of local and state policy solutions. Questions pertain to convening stakeholders, communication between the public and local governments, long-term economic impacts, environmental impacts, and managing various community challenges.

Here is the link to the survey, which consists of 47 questions that should take about 15 minutes to complete: https://www.surveymonkey.com/s/hydraulic_fracturing

In addition to the online survey, we are also looking for people to do a phone interview (approx. 30 min.) that will help augment the survey data and pull out some nuances that we can't collect at a large scale.

The survey is intended for local elected officials in the following states: Colorado, New York, North Carolina, Ohio, Pennsylvania, Texas, West Virginia, and Wyoming. This email is being sent to EENR members from those states, as well as those state leagues to distribute.

The survey and interview participation is voluntary and strictly confidential. Survey and interviews must be completed by Oct. 31.

If you have any questions or to volunteer for the phone interview, please contact Sam Gallaher at the Buechner Institute for Governance: Samuel.Gallaher@ucdenver.edu.

Best,

Erik Molvar

Laramie City Council

From:	Peter Ornstein
To:	Boulder County Board of Commissioners
Subject:	Oil and Gas rules
Date:	Sunday, September 30, 2012 4:08:04 PM

Please consider the following comment in your deliberations on the proposed oil and gas development rules for Boulder County.

Comment: Upon cessation of operations, the developer should be responsible for removing all infrastructure, including pipelines and surface structures, and cleaning up any spills associated with the operations. Failure to have such a requirement could result in an unfair burden on future land owners and users, especially if the remaining pipelines/infrastructure result in spills and contamination of the land and/or groundwater. Options that the County may wish to consider include regulations requiring a clean closure, inclusion on the State's list of lands subject to institutional controls, and/or requirement of a financial instrument sufficient to address worst-case conditions. Such regulatory controls might be considered consistent w COGCC rules to the extent Boulder's rules address post-production and to the extent they are not addressed by existing COGCC rules.

Thank you.

- -

Peter Ornstein, M.S., J.D.

pmo@mediationnow.com

From:	Gail Massey
To:	Boulder County Board of Commissioners
Subject:	Ban Fracking Now
Date:	Monday, October 01, 2012 7:33:10 AM

Dear Boulder County Commissioners,

Hydraulic fracturing (fracking) can contaminate our drinking water and harm our communities. Furthermore, the proposals to allow Boulder County Open Space to be fracked are inappropriate on land purchased with tax payer funds to be preserved for public recreation and the environment.

As your constituent, I urge you to impose a moratorium on fracking in Boulder County, so that you can investigate all options to place a permanent ban on fracking.

Gail Massey
1617 Green Place
Longmont, CO 80501
3035441802

From:	Nancy Hall
To:	Boulder County Board of Commissioners
Cc:	Sanchez, Kimberly
Subject:	Comment re: 1st Draft Oil & Gas regulations
Date:	Monday, October 01, 2012 9:44:55 AM

To: Planning Commission members, County Commissioners
Cc: Kim Sanchez
From: Nancy Hall
Subject: comment re: first draft oil and gas regulations

Regarding enforcement ...
I've been ruminating on the way companies (in all areas of commerce) have been using subcontracting as a liability shield.

Please find an enforceable way to hold operators responsible for their subcontractors adhering to the regulations, the MOUs, the SUAs or anything else.

If this is already implicit, might it be a good idea to make it explicit, lest case law change?

If this has already been addressed, please accept my apologies.

As always, thank you for the opportunity to comment, and thank you for your hard work.

Sincerely,
Nancy Hall

From:	Nancy Hall
To:	Boulder County Board of Commissioners
Cc:	Sanchez, Kimberly
Subject:	infrared video of emissions (link)
Date:	Monday, October 01, 2012 10:16:43 AM

Someone on the Planning Commission asked about what an IR camera can see. Here is a link to a video on the EPA web site that demonstrates what IR shows, however
I don't know exactly what kind of IR camera is used here.

http://www.epa.gov/airquality/oilandgas/videos/OGPACSMovie.wmv

Please forward to the Planning Commission - just FYI

Thank you.
Nancy Hall