

Testimony from 350 Colorado regarding SB 19-181:

Hello Senators and thank you for holding this hearing today. I'm Micah Parkin, Executive Director of 350 Colorado, an organization with over 16,000 members statewide who are deeply concerned and working to stop the climate crisis and to transition to a sustainable future.

Senate Bill 19-181, Health and Safety First, is a critically-needed bill to put the health and safety of Colorado families first.

- It is a much needed step in the right direction and should be supported by every legislator who cares about public health and safety.
- For too long people have suffered with serious impacts to their health, peace of mind, property values, and quality of life from an industry that over-reaches in a single-minded effort to boost their bottom line at the expense of public health and safety, ignoring the science about how close and in what density it is safe to have oil and gas operations near where we live, work and play.
- We call on our State Legislators to stand strong for public health and safety, provide full support for this bill as it stands, and not allow it to be weakened in any way.
- Ultimately though, this bill doesn't go far enough. We know much more is needed to fully protect public health, safety, and to address the climate crisis.
- Communities should be given explicit authority to ban fracking if they wish. Given the preponderance of studies showing serious public health and safety dangers, many states and countries around the world have chosen to ban it and our communities deserve that option.
- Forced pooling, whereby mineral rights owners are forced to allow extraction of oil and gas under their properties by another nearby owner, is unethical strong-arming, it's unconstitutional and should not be allowed.
- With the oil and gas industry in financial dire straits, orphaned and abandoned wells are becoming a serious problem, with communities left cleaning up the toxic mess of this floundering industry. Companies should be required to secure bonding of \$250,000 per well to help communities left with cleanup and ongoing recapping of wells and there should be no cap per company. Severance taxes are also effectively the lowest in the nation and should be increased to at least 9% to go into a fund to cover cleanup and maintenance.
- In relation to climate change, to avoid the most dire impacts (like more severe droughts, wildfires, extreme weather and temperatures that are seriously detrimental to food production, our winter sports and tourism industry, public health and safety, and our economy), the IPCC says we must stay below 1.5 degrees C, which for a ~66% chance of staying below 1.5 requires a rapid transition off all fossil fuels by 2035. That means that to preserve a planet capable of sustaining life as we know it, we must soon begin leaving all fossil fuels in the ground and transition rapidly to a 100% renewable energy-based economy. Colorado is well-positioned to be a leader in this transition, and we look to our leaders to do what is responsible and necessary and to be bold climate champions.
- Ultimately, this bill provides bare minimum protections and a much more concerted effort for a just transition off fossil fuels and to 100% renewable energy must be convened as quickly as possible.
- Nevertheless, as we said initially, it is a critical step in the right direction and we encourage full support of all of our Legislators who put the health and safety of Coloradans first.
- Thank you!

WRITTEN TESTIMONY SHEET

DATE: March 5 2019

NAME: LON Goldstein

SB/HB # and Title: SB19-181

PHONE #: _____

PRIME SPONSORS: Becker, Fenberg

WRITTEN TESTIMONY:

I support this bill as a bare minimum step toward a more sane and common sense policy that values health and safety at least as much as corporate profit. I would have preferred a stronger bill that would help Colorado move ahead into renewable energy. We should be funding job re-education to clean energy jobs, we should eliminate forced pooling which is corporate eminent domain and strikes me as blatantly unconstitutional. I am very worried about "forced Fracking" in my neighborhood of Heathwood, Gunbarrel and Niwot. If forced pooling at 51% is based on acreage then one or two large landowners can over-ride our whole neighborhood. As a parent and homeowner I am appalled that toxic industrial activity can take place in our neighborhoods. As a Coloradoan I want us to move toward a clean energy future and one that helps us mitigate climate change. As for the 1% of Coloradoans who are afraid of losing jobs I would say I feel for you but if your job is to pollute my air and water then I am sorry, you need to find new work.

PRINT NAME: LON Goldstein

SIGNATURE: Lon Goldstein

WRITTEN TESTIMONY SHEET

DATE: March 5, 2019

NAME: Geoff Deakin

SB/HB # and Title: SB 19 - 181

PHONE #:

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

I have often commented that the current regulations allow for perfect local control - as long as local governments only hope to control fence color.

The Town of Erie has taken an active role in negotiating with oil & gas operators to try to minimize the impact of O&G development to our residents, but the toolbox afforded to us is woefully inadequate and out of balance with our land use authority for any other type of use.

"Least bad" is a concept we all know well as members of government - not every game can bring a win, and governance requires compromise. But on this one issue, the playing field is far from level. SB181 helps to restore that balance so that we - and you - can fulfill our collective promise to protect our constituents, our people.

Please consider this bill our best opportunity to restore true local control. Thank you.

PRINT NAME: Geoff Deakin

SIGNATURE: _____

MAYOR PRO TEM, TOWN OF ERIE

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Megan Wilder

SB/HB # and Title: SB 19-181 (In Support)

PHONE #: _____

PRIME SPONSORS: Fenborg/Becker

WRITTEN TESTIMONY:

Many of us Coloradans have worked for 10+ years to pass meaningful Oil + Gas ballot measures and we have protested, attended hearings, rallied, sent countless emails, made hundreds of calls to our elected officials, sat through innumerable town halls etc.

I am overjoyed to see that the legislature has finally taken our concerns seriously and has introduced a bill designed to protect Coloradans from the dangers of fracking. Although I wish this bill went much further and had more ironclad protections, I applaud it as an incremental step that will begin to improve our O+G laws.

- Please do not allow the bill to be watered down
- Please do not allow falsehoods to be spoken in testimony
- Please do not delay the bill - (destruction is accelerating)
- Please ensure that the community rights provisions do not allow industry to sue communities for protecting us
- Please strengthen the provisions against forced pooling

Please do the right thing - protect your constituents, don't be ~~scared~~ fooled by the false claims of the O+G industry.

PRINT NAME: Megan Wilder

SIGNATURE: _____

Please advocate for us, the people, we can't afford to squander this chance for real reform of this corrupt, destructive industry.

WRITTEN TESTIMONY SHEET

DATE: 3/5/2019

NAME: Neshama Abraham

SB/HB # and Title: SB-181

PHONE #:

PRIME SPONSORS: Sen Feinberg, Rep-KC Becker

WRITTEN TESTIMONY:

I fully support this bill. As policy makers, it's appropriate to think of the present and impacts on the future. Think big. Generations - our children's grandchildren - are counting on ^{us} you. It is time to think of an energy economy not based on extracting, rather on harvesting respectfully the resources we've been given. We have abundant solar, wind & geothermal energy. These resources are the ^{energy sources} ones to emphasize. This bill

will enable O.G development to continue but more responsibly. Please support SB-181. And keep it strong - think of the generations to come and the current people & species near well now. Thank you! And thank you for your service

PRINT NAME: Neshama Abraham

SIGNATURE: Neshama Abraham

2ⁿ

271

WRITTEN TESTIMONY SHEET

DATE: 5/5/19

NAME: Miguel Ceballos-Ruiz

SB/HB # and Title: SB-19-181

PHONE #:

PRIME SPONSORS: KC Becker Fehner Fenberg

WRITTEN TESTIMONY:

As a former oilfield worker in west Texas, I was exposed to many dangerous work conditions, contaminants, and unknown substances. I worked first on an oil rig as a casing string operator, where the longest I spent on a rig floor was 63 hours straight. That was in 2011. My second job in the oilfield was laying poly pipe and then this led to my job unloading trash trailers in the ~~Midland~~ Ector county landfill. I unloaded sack after sack ~~of~~ that had been filled with materials used to make drilling fluid/mud. I was not given proper protection for this job. I asked over and over for a proper mask, something more substantial than the paper/painter's mask I was sometimes provided with. I appreciate there being unions in Colorado's oilfield. However I truly believe that the culture within the oilfield ~~and~~ here is similar to that in west Texas where the industry does not care about their employees' health, much less the general public's health. Please vote Yes!

PRINT NAME: Miguel Ceballos-Ruiz

SIGNATURE: Miguel Ceballos-Ruiz

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Bridget Law

SB/HB # and Title: 181

PHONE #:

PRIME SPONSORS: Becker + Fenberg

WRITTEN TESTIMONY:

Please hear this testimony as a resident of Longmont. Less than 2 miles away from my home is a proposed well pad for Fracking. It is disturbing how close to our homes as schools the oil and gas industry is willing to drill given the concerning evidence of how this threatens health and safety. Regulating this industry is absolutely necessary — time and time again the oil + gas industry has put profit before the health and safety of the residents — THIS MUST STOP! Boulder County is my home as well as the home of beautiful bald eagles and precious and majestic open space. It is imperative that we act in efforts to protect these lands and its people so it may be enjoyed by future generations. Thank You!

PRINT NAME:

Bridget Law

SIGNATURE:

Bridget Law

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Makaysha Rain

SB/HB # and Title: 19-181

PHONE #:

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

I support SB 19-181. I am a teacher and a mother. I live in Louisville, CO. I owned a home in Lafayette that we recently sold. I moved out of Lafayette for fear of fracking in my backyard. Currently fracking is being permitted behind Pioneer Elementary ^{in Lafayette} where my daughter attended Kindergarten. I became involved in learning about fracking 4 years ago & discovered that there is nothing that I can do or my local government can do to have a say in where these wells go. SB 19-181 provides local governments a voice for the first time. I am terrified that fracking explosions and toxic pollution is coming to my backyard. I worked on Prop 112 bc there is no way for counties to have a say in fracking. If this bill isn't passed, citizens are prepared to run a constitutional ballot initiative in 2020 for setbacks. And we are prepared to win. The industry has written the laws that govern their industry for too long. SB 19-181 is common sense legislation that protects health & safety. For the last few weeks, every day the air quality in the Colorado front range has air quality that isn't safe to breathe, mostly from oil & gas activities. Please support this bill as it is written with no loopholes or amendments. Thank-you.

PRINT NAME: Makaysha Rain

SIGNATURE: Makaysha Rain

WRITTEN TESTIMONY SHEET

DATE: 03/05/19

NAME: Gayla Martinez

SB/HB # and Title: SB 19-181

PHONE #:

PRIME SPONSORS: Sen. Fennberg

WRITTEN TESTIMONY:

YES! We need these changes (and more!)

- The mission statement of the COGCC needs to give first place to the health of the environment and the people of Colorado vs "fostering" the industry. We need to acknowledge that leaving fossil fuels in the ground is NOT a "waste" rather, using those fuels is wasting our planet.

- We ^{need} more balanced representation on the COGCC.

- We need more air monitoring. Living in Ft. Collins, we are subjected to dangerous levels of ozone, 44% of which is linked to O&G production.

- Force pooling gives all the "property rights" to a tiny minority. Requiring 50% agreement is only fair.

- Current regulations make a mockery of the rightful authority of local governments.

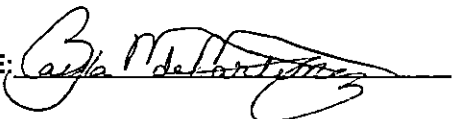
- Bonding fees & insurance should be adequate to cover costs. We know this is a "boom & bust" industry.

The question is, how much clean-up will be left to Colorado tax payers when the wells dry up?

How many health costs will be added to the state?

How much of our natural environment will be tainted, polluted, or forever destroyed?

PRINT NAME: Gayla Martinez

SIGNATURE: 

WRITTEN TESTIMONY SHEET

DATE: 3/5/2019

NAME: Shirley JW

SB/HB # and Title: SB 181

PHONE #:

PRIME SPONSORS: Fenberg, Becker

WRITTEN TESTIMONY:

I support SB 181. It will allow people to protect their air and water from poison and protect their land from destruction. This bill is also important because it is an exercise in democracy.

Historian Nancy MacLean in her book Democracy in Chains, informs us that the wealthiest 1% or less of Americans are very organized and have a plan to use their wealth to harm and ~~de~~ suppress the other 99% of Americans so ^{that} they ^{99%} will be unable to prevent the demise of Democracy and the rule of our Country by the wealthy.

In addition, there is abundant evidence that the use of fossil fuels ^{is} ^{destroying} the world for living beings and must be regulated and phased out quickly to avoid catastrophe in the US and other countries of the world. We are at 11 o'clock and have a short time to preserve our beautiful world.

PRINT NAME: Shirley JW

SIGNATURE: Shirley JW

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Jackie Nelson

SB/HB # and Title: SB 181

PHONE #:

PRIME SPONSORS: Fenberg, Becker

WRITTEN TESTIMONY:

I support Senate Bill 181. I believe the oil + gas industry makes corporate profits their goal and do not sufficiently take into account the health and safety of the people of Colorado and the environment. I especially object to the practice of forced pooling. A friend of mine recently discovered that one owner in her housing subdivision sold her mineral rights to an oil and gas corp. for the purpose of fracking and all of her neighbors are contesting that decision. This is a blatant abuse of power by an oil and gas corporation. Local control of oil and gas industrial activities is a necessity.

PRINT NAME: Jackie Nelson

SIGNATURE: Jackie Nelson

WRITTEN TESTIMONY SHEET

DATE: 3-5-19

NAME: Matt Bulger

SB/HB # and Title: 181

PHONE #: _____

PRIME SPONSORS: Farmers, Conservationists, citizens, open space advocates

WRITTEN TESTIMONY:

Every home already has a gas line running to it to provide heat. These lines are also prone to similar hazards as flow lines. Where is the line drawn? Without being willing to assume any oil & gas risk, does that entitle one to use of these resources and at the same price that those who are willing to assume those risks by allowing oil & gas land use? If "Not In My Backyard," then whose back yard is acceptable to put "at risk?" Accidents are unfortunate part of human error. There are ways to mitigate these risks and the industry is already following more regulation than it could ever deal with as it is. And these methods are working, in fact, oil & gas is now one of the most heavily regulated industries. A bird a 1/2 mile away cannot be disturbed. So that means no strip malls or new housing can disturb those birds either. Strip malls & housing will ALL require gas utility service which will include more pipeline miles than most oil & gas projects will ever have. Oil & gas following current regulations will actually ~~cause~~ ^{cause} less pipeline miles, less connections prone to failure, and it should slow urban sprawl & habitat loss. Oil is preserving farmland & habitat from subdivision which may present an infinite list of new environmental & health issues. Holding other industry to current oil & gas standards may go further in the long run than regulate more in oil & gas.

PRINT NAME: Matt Bulger

SIGNATURE: 

WRITTEN TESTIMONY SHEET

DATE: _____

NAME: _____

SB/HB # and Title: _____

PHONE #: _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

I don't know the exact figures but I am sure that most of that money comes from oil & Gas Leases and royalties from school ~~sectors~~ Lands controlled by the Colorado state Land Board.

~~If you, our state senators ~~and~~ finding money for ~~schools~~ is~~

If you our state legislators are having a tough time finding money for schools now. Just shut down the oil & gas industry. ~~Ask~~ Please Ask ~~your~~ yourselves ^{This.} where will we find a replacement revenue stream.

Big oil & Gas is a big easy target to attack. In reality Big oil is thousands of good every day people trying to make a living. ~~at~~ operators hire thousands of independent men and women.

~~For~~ For example - a kid out of welding school, High school shop class, Junior College has a GED etc. First Thing you know he or she is working as a welders helper. Then ~~the~~ the individual is a welder, works hard does a good job gets a

PRINT NAME: _____

SIGNATURE: _____

WRITTEN TESTIMONY SHEET

DATE: 3/5/2019

SB/HB # and Title: SB-181 Protect Public ^{Oil & Gas} Welfare

NAME: Janice Brown

PHONE #:

PRIME SPONSORS: Fanberg / Becker

WRITTEN TESTIMONY:

I am in support of this bill. It would be a good first step to take this state back from the oil & gas industry. The industry causes such health issues as asthma, cancer (AML), birth defects, infant mortalities, the VOC's are causing our air pollution (ozone) to increase. We have a limited time to change the climate crisis we are currently in. Fossil fuels are a source to the climate disruption, we need to leave them in the ground. We need to stop subsidizing the fossil fuel industries and convert to renewable energies ASAP. Oil & gas is the only industry not regulated by the State of Colorado. They say "jump" and the State says "how high." The state allows drilling near homes, schools, playgrounds and water sources. This practice is unsafe! There have been 4 explosions or fires since the November elections. The industry is not safe! It takes 5 to 13 million gallons of fresh water per frack. That is water that is taken out and never put back. It is water the industry doesn't pay for. Now do they pay for the roads they use or the medical bills for the people they make sick. (over)

PRINT NAME: JANICE BROWN

SIGNATURE: Janice O. Brown

As a tax payer, I would like the industry to pass the costs of plugging and capping the wells. I would also like municipalities to be able to ban drilling in their city/towns/country limits.

Even Extraction Oil & Gas has documentations that says set back of 2 kilometers (1.2 miles) should be minimum for safety.

Climate disruption is increasing as evidenced by severe weather, even the jet stream has been disrupted. We have severe droughts, flooding and wildfires. There are essentially 19 wildfires burning in North Carolina, Australia.

We are in the 6th mass extinction. The Great

Barrier Reef is dying as evidenced by coral bleaching.

If we do not have a viable planet nothing else

matters: not the economy or jobs, not education

or transportation, not health care, housing, agriculture -
Nothing else matters if the planet cannot support

life as we know it.

There are more important issues than money?

WRITTEN TESTIMONY SHEET

Friend

DATE: 3-4-2019

NAME: Rachel Friend

SB/HB # and Title: SB 181 -

PHONE #:

PRIME SPONSORS: Fenberg + Becker

WRITTEN TESTIMONY:

I'm Rachel Friend from Boulder. Thank you for Ms. Marilyn M. Brown's testimony. I was teaching at Frederick High the day after the Firestone tragedy. These neighboring towns are intertwined and my students were shell-shocked. I could look out the windows from Frederick High, and see well machinery moving up and down, right next to the school, as we prayed the tragedy.

When, as ~~an~~ adults, we cannot provide rational defenses to our children for preventable tragedies, we have to course correct. There is no defense for Oil + Gas going essentially unchecked in this state, without even the ability for local govt to impose limits. Thank you for moving us forward ^{you} ~~we~~ need to protect lives and ^{the environment and} govern in a way that ^{to protect lives.} you ~~could~~ ^{could allow} go into a classroom the day after a tragedy like in Firestone and hold your heads high and say you did your best to protect my students' ~~ambitions~~ neighbors, ^{and} friends, ~~and~~ ^{as well as} the very air they breathe.

PRINT NAME: Rachel Friend

SIGNATURE:

[Handwritten Signature]

WRITTEN TESTIMONY SHEET

DATE: March 5, 2019

Public Welfare

NAME: Karen Conduff

SB/HB # and Title: SB 181

Protection re:

PHONE #:

PRIME SPONSORS: Fenberg and Becker

Oil & Gas

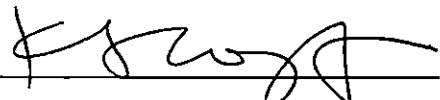
WRITTEN TESTIMONY:

As oil and gas operations have increased in Colorado and encroached more and more on residential neighborhoods, more and more people are impacted by the industry. And yet, residents' ability to have ANY input on what happens in their backyards, has been sorely lacking.

The Physicians for Social Responsibility Compendium proves that fracking harms our air, water, and health and safety. It is passed time ~~time~~ to reign in a heavy industrial activity and give health & safety the priority it deserves.

The truth is, this bill does not go far enough. Climate change is real and fossil fuel extraction and burning is a major contributor to GHG, we really ought to be BANNING the industry ASAP

PRINT NAME: Karen Conduff

SIGNATURE: 

WRITTEN TESTIMONY SHEET

DATE: March 5, 2019

NAME: Kathy Partridge

SB/HB # and Title: SB 181

PHONE #:

PRIME SPONSORS: ~~(Sen. Beck)~~ Sen. Becker, Sen. Fenberg
~~Sen. ...~~

WRITTEN TESTIMONY:

I am a resident of Longmont, Colorado. In 2012, I was among the majority of our town who voted to ban fracking within our city limits for 5 years.

Since that time, instead of my community secure in our decision to oversee zoning and land use in our borders, my elected government has had to decide whether to use our public funds to protect our decision, funds that might have benefitted our recovery for the flood.

It was a shock to me that the State sued us, and that current Colorado law did not protect us.

I support SB 181 which will give my local government more authority over oil and gas development. My community, Longmont could at last focus on public health issues of fracking as well as inspecting sites within our boundaries and enforce our noise pollution ordinances.

PRINT NAME: Kathryn Partridge

SIGNATURE: 

WRITTEN TESTIMONY SHEET

DATE: 3.5.19

NAME: Sequoyah Healy-Louer

SB/HB # and Title: SB 19-181 Protect Public Welfare Oil & Gas

Operations
PHONE #:

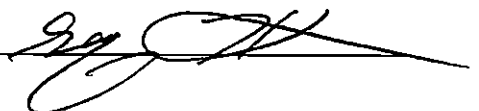
PRIME SPONSORS: Sen. Stephen Fenberg, Rep. KC Becker

WRITTEN TESTIMONY:

I am writing to support SB 19-181 and urge the State Legislature to ensure its passage. Every study done by an unbiased entity and done thoroughly has demonstrated that Oil and gas fracking activities pose serious health threats to communities when conducted in and around communities. Communities need to be allowed to take necessary steps to protect the public welfare from adverse effects of oil and gas activities in Colorado. As CEO of Exxon Mobile, Rex Tillerson sued to block the construction of a water tower in his neighborhood in 2012. The lawsuit Mr. Tillerson was party to stated that the water tower "will sell water to oil and gas explorers for fracking shale formations leading to traffic with heavy trucks... creating a noise nuisance and traffic hazards." The suit went on to argue that "a water tower will have lights on at all hours of the night, traffic to and from the tower... noise from mechanical equipment... and creates unsafe and unattractive nuisance to the children of the area." These conditions are part and parcel of oil and gas fracking. SB 19-181 is necessary to the public welfare.

PRINT NAME: Sequoyah Healy-Louer

SIGNATURE:



WRITTEN TESTIMONY SHEET

DATE: March 5th

NAME: Damon D'Amico

SB/HB # and Title: SB 19-181

PHONE #:

PRIME SPONSORS: Colorado Rising

WRITTEN TESTIMONY:

We all know that back in the 70's & 80's the oil & gas industry has lied & hidden the truth about the risks & dangers involved w/ oil & gas exploration and these lies are still being told today

Approx. 60 years ago when these laws were orchestrated & written these laws allow little to no regulation or oversight. This is why we are in this mess today.

For anyone ~~who~~ ^{who} claims that carbon & methane are good or safe for our environment or human health, while they ignore the real facts that these gasses are actually damaging our environment faster than you can imagine IS JUST PLAIN IGNORANT!

Even though we are here in Colorado, thousands of miles away from the oceans, it's still a fact that 50% of all coral reefs ~~are~~ ^{have died} in just the last 30 years because of bleaching which has already been proven to be attributed to rising sea temperatures. Just because Miami FL

is thousands of miles away from us, doesn't mean we should ignore the fact that Miami is investing 1/2 a billion \$ into raising their roads right now because of rising ~~sea~~ ocean ^{temperatures} levels/OVER →

PRINT NAME: Damon D'Amico

SIGNATURE: D. D'Amico

I've lived in or around Brighton for the last 38 years. I have 2 12 year old twins boy & girl. We've watched the onslaught of oil & gas wells throughout Brighton & A. Cupton and it's disgusting to see.

We know that the oil & gas industry has been infamous for exploiting opportunities all in the name of the all mighty dollar

He witnessed a recurring theme w/ the majority of employees in the industry and it really seems to me that they would consider their income to be more important to them and their children than their health

that just blows me away!

My parents and many other mentors of mine have always impressed upon me that if you don't have your health, you don't have anything.

Health is number 1!

Stop the leaks & stop the lies,

Pass ~~SB~~ SB 19-181

WRITTEN TESTIMONY SHEET

DATE: 3/5

NAME: Mark Monger

SB/HB # and Title: SB 19-181

PHONE #:

PRIME SPONSORS: Senator - Steve - Fenberg

WRITTEN TESTIMONY:

I would like to voice my ~~opposit~~ support of SB 19-181. I am a 5th generation coloradoan and know the difficulties our state has with retaining identity. I have heard numerous testimonies about the financial impacts this bill will have on industry, it's workforce, and communities accepting severance from extraction. These are superficial to the health and environmental impacts the whole state suffers from the privatized "takings" of a colorado asset. Water use by fracking is growing at a time that colorado water needs are increasing, not to mention the impossibility of reusing produced water generated through the process. Groundwater Quality should be monitored by the COGCC as well as air, ~~and~~ noise and surface water. The forced pooling aspect of the bill is commonsense, it is ludicrous that a minority owner can implicitly involve parties opposed to the practice. I support the change of personnel on the COGCC to get a more balanced opinion on O & G Development. Lastly i worry about the financial integrity of Fracking in a rising interest

PRINT NAME: Mark Monger

SIGNATURE: 

rate environment, Wall Street is losing patience with
this industry if they are unable to remain financially
lucrative what happens to their abandoned infrastructure?

...if you're suffering
through horrible partnership



WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: S Nyholm

SB/HB # and Title: _____

PHONE #: _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

We strongly support SB19-181
The COGCC has been unhelpfully
unresponsive to concerns

We need local control to have our
voices heard.

We are fully confident in advancing
our increasing local control

PRINT NAME: STEVE Nyholm

SIGNATURE: 

WRITTEN TESTIMONY SHEET

DATE: 3/5/19 - Protect Public Water Act NAME: Kelly Wiedemer

SB/HB # and Title: SB 19161 Water Operator PHONE #:

PRIME SPONSORS: Stephen Janberg, K Becker

WRITTEN TESTIMONY:

Please support this legislation!

Industrial activity is not appropriate in our neighborhoods and is now completely out of control.

This industry is toxic to our air & water - and needs to be regulated - not promoted at any & all costs.

forced pricing laws are a crime.

Represent the people.

PRINT NAME: Kelly J. Wiedemer SIGNATURE: Kelly Wiedemer

WRITTEN TESTIMONY SHEET

DATE: 3/5/2019

NAME: John Dulles

SB/HB # and Title: 181

PHONE #:

PRIME SPONSORS: Fenberg / Becker

WRITTEN TESTIMONY:

Prepared testimony but could not stay late
I support SB 181 because it will
change the way Colorado does business.
Most Coloradans will agree that Government
closest to the people is more responsive
to its constituents. Local governments
need the ability to use their zoning
and land use ordinances to determine
development within their community.

In Broomfield, state pre-emption
resulted in our city government
essentially capitulating to oil & gas,
despite the expressed concerns of the
majority of residents. We passed
a charter amendment to prioritize
health and safety but it had little
effect.

This bill will help protect our
citizens while not denying or prohibiting
development of natural resources.

PRINT NAME: John F. Dulles

SIGNATURE: John Dulles

WRITTEN TESTIMONY SHEET

DATE: 03/05/2019 ; 6:10 P.M.

NAME: ANDY KRAMER

SB/HB # and Title: SB 181

PHONE #:

PRIME SPONSORS: FENBERG & BECKER

WRITTEN TESTIMONY:

I'M AN ANTHEM RANCH BROOMFIELD RESIDENT. MY HOME IS LOCATED 1/4 MILE FROM THE PROPOSED CRESTONE MEGA 30-WELL PAD. MY WIFE & I FEAR FOR OUR HEALTH & SAFETY WITH A MAJOR, INDUSTRIAL OIL & GAS OPERATION BEING SO CLOSE TO US. SOME OF MY FRIENDS IN ~~ERIE~~ ERIE ARE 500⁺ FEET FROM THE WELL PAD, AND WE SHARE THEIR CONCERN, AS WELL. SB 181 IS A STEP IN THE RIGHT DIRECTION TO PROVIDE LOCAL COMMUNITIES WITH THE TOOLS TO WORK WITH GOVERNMENT SO AS TO PROTECT OUR HEALTH, SAFETY & WELFARE. WE HOPED TO ENJOY OUR RETIREMENT YEARS IN BROOMFIELD, BUT FEEL THREATENED BY UNTRAMMELED OIL & GAS OPERATIONS. EXISTING REGULATIONS DON'T ADEQUATELY PROTECT RESIDENTS IN CLOSE PROXIMITY TO MASSIVE OIL & GAS OPERATIONS.

PASS SB 181.

(I'M A LIFE-LONG RESIDENT OF COLORADO & WISH TO LOOK FORWARD TO MANY MORE YEARS!)

PRINT NAME: ANDY KRAMER

SIGNATURE: Andy Kramer

WRITTEN TESTIMONY SHEET

DATE: Mar 5, 2019

NAME: Dr. Kritee (Kanku)

SB/HB # and Title: 181

PHONE #:

PRIME SPONSORS: Fenberg + Becky

WRITTEN TESTIMONY:

I am a climate scientist and a Zen Buddhist priest. I represent Colorado's inter-faith coalition called Greenfaith, Boulder's Ecochaema Sangha & Buddhist teachers. As a scientist, I represent many climate scientists who are grieving what is happening to our climate.

SB181 is good but does not go far enough in my view. The bill doesn't mention climate disruption or climate chaos. Methane causes one fourth of current climate chaos. 15-20% of Colorado emissions are from oil and gas operations. Methane is not a bridge fuel. It is as bad if not worse than coal (as is the case for super-emitting oil & gas wells/operations). Methane rise is what most likely caused mass extinction (Permian-Triassic).

At a time when our youth are engaging in climate strikes and Extinction Rebellion, we need to act on behalf of all species. We absolutely need to ~~act on behalf~~ worry about current jobs (I have a job transition bill, if needed) BUT we need to think about future lives, other species (whom God directed us to be good stewards of (or brothers/sisters of)) Please give future lives & other species a voice on the table.

PRINT NAME: KRITEE KRITEE

SIGNATURE: _____

Kritee

TURN OVER

Not acting quickly on moving towards renewable energy + stop methane emissions, it will not only cost billions in near future, it will also endanger all life on planet.

Please say YES to this bill, don't dilute it

A then do much more

You will have blessings + ~~the~~ prayers of CO faith leaders.

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Thomas J. DuBors

SB/HB # and Title: SB 181

PHONE #:

PRIME SPONSORS: Stephen Fenberg, Jared Polis, KC Becker

WRITTEN TESTIMONY

I am testifying in favor of Senate Bill 181 introduced by Jared Polis, KC Becker & Stephen Fenberg.

Global demand for oil/gas is expected to increase by 13% by 2030. All reports/studies that are not funded by economically interested parties claim we need to decrease consumption by 20% in order to come anywhere close to meeting recommended goals. Oil Company share prices are partially based off of future profits. With that said, these companies will stop at nothing to fight every piece of necessary regulation. They will talk about jobs and spread propaganda but their interest is not in the health of humanity & the environment.

We must start acting more in the interest of the health of our population & environment. Also, there is an economic incentive to becoming more competitive in the green energy sector and this will not happen as long as big oil stands in the way

PRINT NAME: Thomas J DuBors

SIGNATURE: 

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Janis Howell

SB/HB # and Title: SB-19-181

PHONE #

PRIME SPONSORS: Self - farmer in northern Boulder County.

WRITTEN TESTIMONY:

In 2008 Obama & Hickenlooper stood on the stage at the Democratic convention & said that Colorado would lead the way to clean energy. Hickenlooper sold us out to fracking. Obama got stymied by the republican congress. And heavy trading began. In 2012 my daughter was diagnosed with leukemia. In 2013 our property was flooded due to extreme weather.

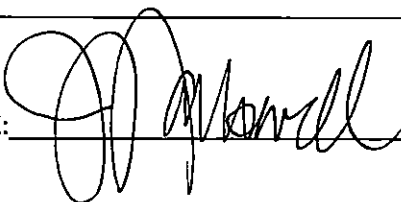
the institute for Arctic Alpine research

Two weeks ago I heard Dr. Helmig's data paid for in part by the Boulder County Commissioners - The data shows that the high VOCs & ozone in Boulder County are directly linked to fracking & oil drilling.

My opinion is that no restrictions are too much - we can not have too many regulations on fracking & oil drilling. Please put the health & safety of people before oil & gas companies. Please pass this bill.

Vote yes!

PRINT NAME: Janis Howell

SIGNATURE: 

TESTIMONY: SB 19-181

Chairperson Winter and distinguished members of the Committee: my name is Stan Gelb, I live in Longmont, CO, ^{no one paid me to be here today,} and I'm a very concerned citizen. So I am testifying in support of SB 19-181.

[I still recall my happiness back in 2012 when I learned that my fellow citizens in Longmont had voted for a complete ban on fracking within our city limits. I was so pleased to be living in a city where a majority of its voters had decided to put their health and well-being ahead of mere money. And] I still recall my disgust in 2016 upon learning that Colorado judges had proclaimed that under existing Colorado law my city had no right and no authority to regulate oil and gas extraction within our city.

[For multiple reasons, we are still stuck for a little while in having to use oil and gas as energy sources, because we're not quite ready for a total transition to renewable energy. We're stuck, even though] it's well-established that oil and gas operations damage our air, water, land, and –worst of all – our planet's climate.

So we now have a choice: Shall we continue to allow maximum damage to our communities, our state and our planet via maximum extraction and use of oil and gas? Or

shall we minimize the environmental and climate damage through reasonable regulation via a bill like SB 181?

The oil and gas industry represents less than 1% of Colorado employment. That's the official statistic from the U.S. Census Bureau. So this committee and this legislature has a choice: you can choose to be dictated to by just one industry that represents less than 1% of Colorado workers. OR you can instead act on behalf of all 5 million people of our state, and therefore vote for SB 181.

The opponents of this bill have made some scary-sounding claims that this bill will cost jobs and ruin our otherwise flourishing state economy. So again all committee members have a choice. You can let yourself become victims of fear-mongering OR you can ~~help~~ help create a better environment, better health, and better lives for all Coloradoans. I implore you to do just that by voting yes on SB 181.

Thank you.

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: TRISH ZORNIO

SB/HB # and Title: SB19-181

PHONE #: _____

PRIME SPONSORS: Fenberg & Beeker

WRITTEN TESTIMONY:

As a resident of Superior, CO I would like to strongly offer my support for SB19-181.

The bill provides several components of relevance including:

- Prioritizing health, safety, + environment as related to development,

- Much needed changes in professional expertise on the regulatory committee, and

- Local input in zoning and development.

As a Coloradan who has had to fight for our rights as a community (Rocky Flats proposed development) I strongly believe this to be a first step in the right direction.

PRINT NAME: Patricia Zornio

SIGNATURE: Pat Zornio

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Brett Houston

SB/HB # and Title: 181

PHONE #:

PRIME SPONSORS: Fenberg and Becker

WRITTEN TESTIMONY:

Hello,

My wife, Allison, is a proud DC grad and counselor at Grandview High School. We have one daughter, Sadie, who turns two April 14, and our second daughter is due June 20.

I coached basketball at North High School (volunteer) ^{2013 -} ₂₀₁₇

I support Minds Matter, Whiz Kidz, Tang Life, North High School, and Project 1.27 financially.

I attend Colorado Community Church, 2220 S. Chambers.

I eat breakfast at La Fuente, 3023 W 40th Ave.

I eat dinner at Twin Dragon, 3021 S. Broadway.

I take my dry cleaning to Snowflake Cleaners, 2130 S. Colfax.

I take my car to South Denver Automotive, 4075 E. Jeff Ave

Sadie attends Treasureland Preschool, 2950 S. University Blvd

I shovel snow for my neighbor.

I support regulation in my industry, but please do so thoughtfully and consider my family.

We are good neighbors.

PRINT NAME: Brett Houston

SIGNATURE: Brett Houston

WRITTEN TESTIMONY SHEET

DATE: 3/5/2019

NAME: Camia Lowman

SB/HB # and Title: SB-19-181

PHONE #:

PRIME SPONSORS: Becker and Fenberg

WRITTEN TESTIMONY:

I am a resident of Broomfield and a mineral rights owner and I am in full support of SB-19-181. Thank you!

PRINT NAME: Camia Lowman

SIGNATURE: Camia Lowman

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Amy Allen

SB/HB # and Title: SB 19-181

PHONE #:

PRIME SPONSORS: Fenberg, Becker

WRITTEN TESTIMONY:

Oil and gas development poses serious threats to health and safety in Colorado. I moved to Colorado in 2017, expecting a safe and clean environment for outdoor recreation. I was dismayed to learn of the serious ozone air pollution problem in the Front Range, contributed to significantly by oil and gas activity. This concern has been confirmed by an air quality monitoring study at the Boulder Reservoir. I was also dismayed to learn that it will be having within 10 miles of ~~at~~ what will be the largest oil and gas ~~dec~~ ~~state~~ operation in Colorado. Communities across the state demand a much higher bar on regulation and this bill is an important start. Many Colorado's residents are much more seriously impacted. Please support SB19-181 and advance further regulation to protect air quality. If the air quality problem is not abated, I will consider moving away from the state. I am an engineer in the renewable energy industry and I would like to continue to see local support for the state's transition to clean energy.

PRINT NAME: Amy Allen

SIGNATURE: Amy Allen

WRITTEN TESTIMONY SHEET

DATE: 3.5.19

NAME: America Sherwood

SB/HB # and Title: SB181

PHONE #:

PRIME SPONSORS: Sen Fenberg, Rep. Becker

WRITTEN TESTIMONY:

Colorado has a health problem that needs immediate attention. Drone activities are becoming so frequent all summer long. Highway signs warning everyone to have indoor activities sadly labels our state as an unhealthy place to live with no exercise possible outdoors. This bill is a start in addressing a much larger problem, climate change. The gases that create global warming are created by the processing of oil and gas and the burning of fossil fuels. Our families are in danger from poor air quality along with wildfire smoke. They are in danger as well from the effects of climate change. Our state is suffering drought conditions. Our water supply is being depleted. Snow melts begin sooner and our summers are longer. The pine beetles now have two life cycles due to longer summers. This bill begins to address our public health and safety issues related to oil and gas production. Vote Yes for SB181. Thank you

PRINT NAME: America Sherwood

SIGNATURE: America Sherwood

WRITTEN TESTIMONY SHEET

DATE: March 5, 2019

NAME: Jacob Smith

SB/HB # and Title: SB 181

PHONE #: _____

PRIME SPONSORS: Fenberg / Becker

WRITTEN TESTIMONY:

Members of the Committee, My name is Jacob Smith + I'm the ED of Colorado Communities for Climate Action (CCCA). CCCA is a coalition of 24 counties + municipalities across Colorado advocating for effective state climate policy. Nearly 2/3 of our members are rural, Western Slope communities.

CCCA is most interested in the portions of SB 181 that will lead to reduced emissions from the activities involved in fossil fuel extraction. In that light, CCCA supports SB 181 because of three key provisions

- ① Shifting air quality oversight from the COGCC to the AQCC.
- ② Directing the AQCC to promulgate rules addressing the release of methane and other pollutants
- ③ Requiring continuous monitoring of oil + gas facilities for leaks of these dangerous emissions.

Why is this so important to local governments? With every passing year, as greenhouse gas emissions in the atmosphere grow, the disruptions of climate change become more severe. The number of days exceeding 100 degrees is growing and the Denver Metro region will increasingly feel like Tucson and our mountain towns will increasingly feel like Albuquerque. Bark beetle epidemics will take a larger and larger toll on our forests. The escalating frequency + intensity of extreme weather events

PRINT NAME: Eliza Schultz

on behalf of Jacob Smith

SIGNATURE: _____ →



Will cost Colorado's local governments hundreds of millions of dollars as roads buckle from heat, homes, businesses, and roadways are devastated by floods, and water supplies are impaired by the erosion following large forest fires, imposing substantial costs on water treatment plants. And Colorado's economy will struggle, our agricultural industry and the many rural communities tied to it are grappling with less and less water as it is, and our winter recreation industry is already suffering from less snow and a shorter winter season.

Let's members span the Western Slope and Front Range, small rural towns and major suburbs, counties and municipalities, and wealthy, middle income, and low-income neighborhoods. The coalition's members all care about protecting a strong economy and quality of life across the state, and for that reason we encourage a yes vote on SB 181.

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Mary Henry

SB/HB # and Title: SB 181

PHONE #

PRIME SPONSORS:

WRITTEN TESTIMONY:

We are embarking on a breaking point for our climate- it is time to make decisive choices in regards to oil and gas drilling in the state of Colorado. Oil and gas have controlled the state financially and held communities hostage while homes are exploding and our children's health is being compromised. Is it enough our children have to experience lock down drills but now we will require them to practice evacuation drills in case a well leaks or should explode. It is definitely time we say no more. We can make decisive decisions on behalf of Colorado residents ~~and~~ ^{with} their health in mind. Please vote yes on Senate Bill 181.

PRINT NAME:

Mary Henry

SIGNATURE:



350.org
CO Risk
Indus HR
Climate Mobilization

WRITTEN TESTIMONY SHEET

DATE: 3-5-19

NAME: Gary Norton

SB/HB # and Title: SB 19-181

PHONE #:

PRIME SPONSORS: Sens. Becker & Fenberg

WRITTEN TESTIMONY:

I'm a 4th generation Coloradoan & life-long Metro Denver resident. The deterioration of quality of life & environment I've witnessed over my 73 years here is deeply concerning for me.

World population has more than tripled during my life. Our Colorado numbers have grown 5-fold. And, depending on its definition, the Denver-Front Range Urban Corridor growth has exceeded this by several more fold. This semi-arid state has experienced an onslaught of human numbers & appetites one might associate with that of a beleaguered 3rd world country.

These run-away conditions could not have so accelerated were it not for the discovery, privatization, & for-profit exploitation of fossil fuels.

To day you have before you a well-crafted SB 19-181 that gives all Coloradans a voice in how we will deal with our impossible & unsustainable addiction to petroleum products going forward. As elected representatives of a divided public, I understand that you can't all at once reverse everything. But you've provided some spot-on, reasonable tools that will give human health & safety a priority, that will allow whole communities & jurisdictions to protect themselves; that will let us choose longer term quality of life & environment for the many over short term profit & expedience for a taxpayer subsidized industry heedless of the growing danger it creates for life on this planet.

If this bill becomes law, a great deal of work & continued vigilance by citizen advocates will still be necessary. It's unfortunate that the case for human, animal, plant & environmental health will have to be argued incrementally & repeated by when climate scientists virtually unanimously have already made it so clear what dire consequences we all soon face if anthropogenic carbon emissions are not quickly reversed, reduced & eliminated. Still, you've given us a voice - & a prioritized voice - to continue bringing those arguments forward.

I would ~~would~~ like to have some acknowledgment of climate change & global warming in this bill. Is this not the elephant in the room here?!

I would like to see a much higher threshold or ban on forced pooling. But 50% is much better & the majority consensus most often accepted in American politics.

I question the wisdom of not addressing the issue of minimum setbacks. The COGCC now looks to be putting health & safety on a higher priority. But regime change could revive this issue

Those are my reservations & hints at what you might consider tweaking. But, all-in-all, I applaud this important bill for moving Colorado in the right direction. I urge you to pass bill SB 19-181 as is & without restricting amendments.

Thank you.

PRINT NAME: Gary G. Norton

SIGNATURE: Gary Norton

Testimony on SB19-181 Protect Public Welfare Oil and Gas Operations

Charles H. Bucknam, Part Time Consultant at Analytical unlimited
12460 North Third Street, Parker, Colorado, Grandview Estates

Please approve SB19-181 for Health and Safety First. I am an analytical chemist and was one of the initial Mine Safety and Health Administration (MSHA) program instructors. Please consider plugging some of the State and Federal loopholes for oil and gas operations, which reduce requirements for the Industry in Colorado and increase risk for health and safety.

Colorado Revised Statutes

The bill links Colorado Oil and Gas Conservation Commission (COGCC) with local government, State Board of Health, Solid and Hazardous Waste Commission for regulation, however there are some oil and gas loopholes in those other sections.

The fracking influenced waters containing natural radioactive material, rulemaking on disposal of natural radioactive material, including liquids, is deferred by the State Board of Health until 2020, should be reconsidered to be included in the rulemaking sooner rather than later (CRS 25-8-506).

In definitions of wastes from oil and gas operations, including produced water are excluded from the definition of Hazardous Waste (CRS 25-11-201). Likewise in the COGCC section Exploration and production waste are exempted from being regulated as hazardous waste (CRS 34-60-106).

In the reporting of soil analysis (Form 24), a short list of inorganic toxicity characteristic leaching procedure (TCLP) elements are used (As, Ba, Cd, Cr, Pb and Ag) and states to determine total metals only if requested. ASTM has developed baseline sampling and monitoring sample guidance, dissolved gas methods and inductively coupled plasma (ICP) multi-element (29 element) method in the oil and gas fracking influenced water characterization. ASTM methods should be used (CRS 34-60-106) in the event of a dispute.

Occupational Safety and Health Administration (OSHA)

The industry is exempt from standards involving "hearing conservation program", "monitoring", "employee notification", "audiometric testing program", and related standards.

Oil and gas well drilling and servicing is also exempt from OSHA lockout/tagout standard¹

Oil and gas drilling, production, and servicing operations are exempt from the benzene standard². Benzene exposure limits for this industry are included in Limits for Air Contaminants³. The 8-hour time weighted average (TWA) is 10 parts per million (ppm), acceptable ceiling concentration of 25 ppm, and the acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift is 50 ppm for a maximum duration of 10 minutes. Exempt from the 1 ppm 8-hour TWA and 5 ppm STEL of the benzene standard⁴

Oil and gas well drilling or servicing operations are exempt from the process safety management of highly hazardous chemicals⁵

Establishments in the following industries with 20 to 249 employees must submit injury and illness summary (Form 300A) data to OSHA electronically. Oil and gas not listed.

My name is Maria Orms and I live in Denver. I am here representing Be The Change -USA - an organization that has been educating Colorado on the negative impacts ~~of the most recent form that the oil and gas industry has taken~~ of fracking. I am here to speak in favor of SB19-181.

We note with approval that flow-lines like the one that caused the tragedy in Firestone are to be better regulated. To protect public health and safety, this inspection regimen must be expanded to include the larger gathering lines and the storage reservoirs used to store gas. We think there are about 3300 miles of gathering lines in the state. There are 11 storage reservoirs. Though each is smaller than the Aliso Canyon Reservoir in California, they serve the same purpose for the industry. Over 400 wells are used in these 11 reservoirs to inject natural gas back into these old, played out oil fields. Presently these facilities are outside the inspection and regulatory prevue of the COGCC.

Time magazine compared the 1.6 million lbs of methane released each day at Aliso Canyon to the emissions of 6 coal fired power plants, 2.2 million cows per day, or 4.5 million cars. The releases went on for several months and constitute the largest man made release of natural gas in this country's history. Nearby residents were evacuated for months. Many suffered respiratory problems, nose bleeds, itching, ~~etc.~~ The long-term health consequences are unknown. IN 2018. SoCalGas agreed to pay affected cities 120 million dollars for the incident.

We asked repeatedly for gathering lines and storage reservoirs to be included in the COGCC's flow-line rule making after the Firestone tragedy. We were ignored. It is past time to correct that ~~high handedness~~. Public health, safety, and the environment depend on it. Realistic bonding requirements and emergancy response plans should be developed for each of the 11 storage reservoirs. ~~at this time~~

Maria Orms
maria.orms@gmail.com

... ..
... ..
... ..

If a homeowner

Hi! My name is Rosemarie Anderson.

I am here in support of Senate Bill 181 as a voice for the youth and this future generation of Coloradans. We are too young to vote, but the choices that are being made today by our elected officials will greatly impact our future – for better or for worse.

I am a resident of Broomfield where we are facing 84 newly permitted horizontally fractured wells in our community.

At the rate we are currently using our natural resources, we will not be able to rely on this resource. We will need to rely on alternatives like solar and wind. We need to start preparing for this now because when my generation gets older, we will have no more oil and gas.

There are currently over 54,000 active oil and gas wells, with thousands more wells being proposed - especially along the Front Range. All of these wells will be obsolete one day and will need to be properly abandoned.

Statewide there are over 400 newly proposed oil and gas sites with over 6 thousand newly proposed wells all together.

Many do not realize that after the wells are plugged and abandoned, all of the underground infrastructure for the wells will remain forever. Just because you cannot see it with your eyes, doesn't mean it is safe. We will rely on the record keeping that has been done in the past and is currently being done... forever...

In the past, leaders promoted conservation of resources so that we would be able to keep these resources for later when we really need them.

I wish that my local government officials could have had the right to say no to the placement of the sites for the 84 wells and have had the power to place them further from our homes, drinking water supply, and schools.

I appreciate the opportunity to have my voice heard and hope that you will also support Senate Bill-181.

Thank You!

WRITTEN TESTIMONY SHEET

DATE: March 5, 2019

NAME: Lacy Gentry

SB/HB # and Title: SB 19-181 Health and Safety 1st PHONE #:

PRIME SPONSORS: _____

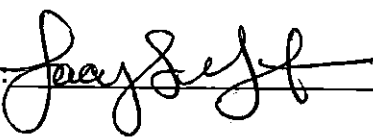
WRITTEN TESTIMONY:

As a proud Colorado resident, I support SB 181 and I ask that this committee does so as well. Along with many of my Denver friends, I am very concerned about climate change and the devastating impacts it will impose on my generations and future generations to come. We must start taking this global emergency seriously! and the first step is regulating and limiting new oil and gas development. I will also ask this committee to learn from our past. Colorado has a ~~rob~~ long history with the mining and extraction industry starting in the 1800's with ~~our~~ ^{our} first settlers who ~~dared~~ ^{dared} to explore this part of the country to find their fortune in mining. Little was known then of the environmental impacts of mining and there were no regulations. Consequently, our precious freshwater resources are still being polluted from these historic mines with heavy metals, and ~~will~~ our headwaters, streams, rivers, and groundwater supplies will continue to face these threats for hundreds of years to come. Now that we have the data, scientific ~~to~~ information, I ask this commission to learn from our past mistakes and protect our natural resources and environment.

Under the current regulations?

Oil & gas development in Colorado not only threatens →

PRINT NAME: LACY GENTRY

SIGNATURE: 

Kind Regards,
Joey S. Jenting

Thank you for your time! I will leave you with the quote "We did not inherit the earth from our ancestors; we borrowed it from our children!"

our water quality - but more so our air quality. When looking out, towards those beautiful and majestic mountains, I am reminded of why Colorado is the greatest state. However, more and more, that view is being obstructed by a thick, brown haze and I wonder what this means for our air quality - what are we breathing into our bodies, our lungs? It can't be good! Just yesterday, my phone's weather app warned me of "unhealthy air quality for sensitive groups" in Colorado. We must do more to protect our air quality, simply because we need clean air to SURVIVE! and supporting SB181 is the step in the right direction to do so.

WRITTEN TESTIMONY SHEET

DATE: Nov 2019 19-

NAME: Jane Cleveger

SB/HB # and Title: # SB 181

PHONE #:

PRIME SPONSORS: Renewables Now Loveland

WRITTEN TESTIMONY:

1. Air quality monitoring is imperative! I live in Loveland and have Asthma. Being consistently rated 'F' on air quality is unacceptable. Venting & flaring is a way of life for dirty O&G.
2. Forced Pooling - Developers can hold back 50% mineral rights - which is not right. Let land owners decide!
3. Local Control - Having control over what citizens, who are tax payers, want in their community ~~is~~ should be ~~an~~ inalienable right. Their taxes make the community run.
4. Changing the leadership within the COGCC must happen because it's lopsided towards the O&G industry. Changing the mission statement to side with human health & safety of our environment.

PRINT NAME: Jane Cleveger

SIGNATURE: Jane Cleveger

Testimony in support of SB 181

Madam Chairwoman and Committee Members, thank you for the opportunity to speak to you today in support of SB 181. My name is Laura Fronckiewicz and I'm here testifying on behalf of Mothers Out Front, a women-led grassroots organization working to protect our children and our communities from climate change and to promote a clean energy economy. I live in Longmont, CO and I'm also testifying on behalf of my family, speaking as mother of two young children.

SB181 is a common sense step to take in order to protect the health, safety and welfare of Colorado's children. When I hear of a new oil and gas operation being sited next to a school, playground, recreation area, or near homes, I am extremely concerned about the effect this will have on the community's children. Studies have overwhelmingly shown that exposure to these air pollutants including cancer-causing benzene, can affect our reproductive, development and neurophysiological systems, and particularly those of infants and the unborn.

In 2013, while pregnant with my second son, I fought for a successful moratorium in Broomfield County, where I lived, which postponed drilling for 5 years. I was so concerned about the effects these chemicals would have on my family, I worked on this right up to my delivery date, and resumed soon thereafter. If we had had local control at that time, we may have been able to avoid the ballot initiative and associated costs, and work through our zoning committee. This would have saved me time that I could have spent with my newborn during those precious early months.

I appreciate the work that was put into this bill, and while in some ways I'd like it to go further, particularly with regard to bonding, I ask for a yes vote today. Thank you.

My name is Gabrielle Katz. I am a resident of the Heatherwood neighborhood in unincorporated Boulder County. Last November I received a letter from a landman asking to lease my mineral rights, and since then I have had a crash course in the oil and gas situation here in Colorado.

I am stunned and disgusted by what I have learned over the last few months. I found out that as a Colorado resident, and even as a mineral owner, I have zero say in whether or not drilling happens in my area. I also found out that local communities have almost zero influence on if, when, and where drilling happens. Under current laws, public health, public safety, public welfare and the environment are NOT priorities for the State when it comes to oil and gas. Furthermore, local jurisdictions are not allowed to prioritize these things when it comes to oil and gas development, even if they want to. The end result is that communities are being impacted by oil and gas drilling when they don't want it! To bring this home: This means that under the current system, my personal health, welfare, quality of life, private property rights, and house value are ALL considered to be less important than the profits of a private industry.

Come on Colorado -- we can do better than this!

I am testifying in support of Senate Bill 19-181, but honestly I wish this bill were stronger, a lot stronger. This is not a radical bill. However, this bill does make some positive changes that will help bring Colorado oil and gas laws into the 21st century. We need to recognize the new reality in Colorado in terms of our population size, our diverse and strong economy, our low unemployment, and the absolute importance of protecting public health, safety, and welfare. We need to recognize the risks we face from climate change, and we need to empower local communities to protect the environment, open space, outdoor recreation, and our way of life for future generations. Please pass this bill! And please do not weaken it with any amendments!

150 Lindepine Circle
Bottlement Mesa, CO
February 21, 2019

Dear Sir:

My name is Connie Smoligan, & I live in Battle-
mont Mesa, Colorado.

I am 91 years old, & I have lived all but 6 yrs. of my life
on the Western Slope alongside the Colorado River. I am
Blumentopf Springs, CO. (1928) & Bottlement Mesa at this present time.
The location of WRSAs Well Pad A is very troubling, for many
reasons! The configuration of this pad is very unusual. It was
has located on top of a bluff 500ft above this well pad, & WRSAs
has said they would need to dig into the bank in order
to have a well pad large enough for 24 wells, plus an
injection well!! The well pad will be close to Bottlement
Mesa Colorado River intake, & its water storage pond. The
health & safety of that neighborhood above the well, plus an
community, if a leak, a spill, or a fire, would occur, ~~is~~
Away!

An injection well in this location is inappropriate for
many reasons. It could trigger an earthquake, for one!
No one really knows the long-time effects of injecting
millions of gallons of "produced water" deep underground.
What could possibly go wrong!!!
It is known that the health, safety & well-being of residential
areas are not a concern to the gas well industry, & they
are did prove it by spending millions of dollars to
defeat Prop. 112!! - & the Colorado Supreme Court recent
ruling agrees!! Neighborhoods lose again!!!
Please read the enclosed newspaper article. At the time
this long we have fought to eliminate Pad A, & have been
brought at every turn!

I know that WRSAs & our 3 County Commissioners, none
of them live in Bottlement Mesa, think that is the "best
location" for Pad A. (At the earliest) Please what I think -

... ..
... ..
... ..
... ..
... ..

... ..
... ..
... ..
... ..
... ..

... ..
... ..
... ..
... ..
... ..

... ..
... ..
... ..
... ..
... ..

... ..
... ..
... ..
... ..
... ..

... ..
... ..
... ..
... ..
... ..

... ..
... ..
... ..
... ..
... ..

A thinking committee, neighborhood, individuals &

organization, like B.C.C. - Battlement Cemetery, Western Colorado
G.V.C.A. - Grand Valley Citizens Alliance, Western Colorado
Alliance" etc., raise questions about the health & safety
problems that could occur due to the location of

a gun steel pad, they deserve to have their concerns
investigated, ~~investigated~~ & not ~~not~~ attempted by the
B.C.C. & the Battlement Cemetery, without coming
in person, for for them believe "Our congressional
district legislators also need to pay attention to
our concerns!"

I would be interested in your personal opinion,
not your political opinion.
Thank you for reading my concerns.

Yours truly,
Ernie Smeltzer
100 Lumberjack
Parkway, CO 81635

WRITTEN TESTIMONY SHEET

DATE: March 5, 2019

NAME: Anne Jackson

SB/HB # and Title: SB 181 Concerning additional public PHONE #:

welfare protecting regarding the conduct of oil and gas operations

PRIME SPONSORS: Fenberg Senator

WRITTEN TESTIMONY:

I am here as a mother and citizen. I am not part of the industry. I am not a political activist. We need oil and gas reform to put health and safety first. I'm concerned about the health and safety of Colorado.

I Love Colorado and chose to move my family here for a healthy quality of life.

Lately my weather app is telling me

"Unhealthy Air Quality." We - Colorado has put greed above health and safety. It is up to us to adapt, grow and

make new regulations to protect all of U.S. -

We can be better! Please choose to be better and vote Yes on SB181.

PRINT NAME: Anne Jackson

SIGNATURE: Anne Jackson

WRITTEN TESTIMONY SHEET

DATE: 3/5/2019

CONCERNING ADDITIONAL PUBLIC NAME: Jeffrey DiMaio
WELFARE PROTECTING RESOURCES

SB/HB # and Title: SB19-181 THE CONDUCT OF OIL & GAS OPERATIONS PHONE #:

PRIME SPONSORS: SENATOR FONBOSZG

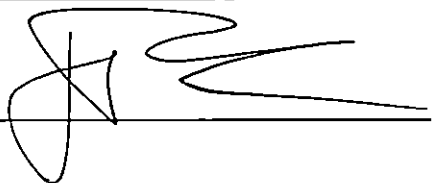
WRITTEN TESTIMONY:

I LIVE IN SUPERIOR, CO. UNTIL NOVEMBER OF 2018,
I WAS COMPLETELY UNAWARE OF THE POWER & REACH OF
THE OIL & GAS INDUSTRY. OUR COMMUNITY WAS FACED
WITH AN EXISTENTIAL THREAT - AN ^{INDUSTRIAL} OIL & GAS
FACILITY WITHIN THE BOUNDS OF OUR COMMUNITY. THE
PROPOSAL WAS TO DRILL 30 WELLS & LOCATE THE FACILITY
ON TOP OF A HILL JUST 1000 FEET FROM THE CLOSET
HOME & 2500 FEET FROM OUR CHILDREN'S ELEMENTARY
SCHOOL. THIS FACILITY WOULD HAVE PRODUCED 80 DB
OF NOISE, LIGHT POLLUTION, AND THE USE OF DANGEROUS
CHEMICALS. ON TOP OF ALL THIS, THE PROPOSAL
WAS TO DRILL BENEATH THE ROCKY FLATS NUCLEAR
FACILITY. ^{WHILE} DURING THIS EXPERIENCE, I WAS
SHOCKED TO SEE HOW LITTLE POWER OUR
TOWN HAS TO PREVENT OR EVEN REGULATE THIS
PROPOSAL FROM OIL & GAS. IN ADDITION TO THIS
PROPOSAL IN SUPERIOR, I WAS FORCE-POOLED AT
MY OTHER PROPERTY IN BROOMFIELD, COLORADO NEEDS
NOW RULES TO PROTECT THE HEALTH & SAFETY OF
OUR COMMUNITY

PRINT NAME:

Jeff DiMaio

SIGNATURE:



WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Beverly Crane

SB/HB # and Title: SB 19-181

PHONE #: _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

I moved to Colorado from the San Francisco Bay Area a little over three years ago. I chose a community in Brownfield that looked to be a wonderful area in which to live and contribute. However, I found out after buying what I thought would be my last home that fracking bans would soon be overturned and two mega industrial fracking sites would be allowed to the north and south within several thousand yards of my community. Across the street another family friendly community and school were continuing to be developed. Allowing production wells in areas where people live is unsafe and unconscionable. Colorado's oil and gas laws are antiquated and largely lacking in regulation. I would not have moved here had I known how much Colorado law currently favors oil and gas development without regard to citizens' health and safety. →

PRINT NAME: _____

SIGNATURE: _____

Now that I do live here (Knoxville),
I am committed to fight for the

health and safety of Coloradans who

live, work and raise families, living
along the front ranges. Now even that

perfect citizens from fishing need

to be developed, alternative energy

sources need to be developed. Oil

and gas workers need to be given

opportunities to return in clear

energy jobs or other types of work

focused on future - ~~energy~~ energy fields

to improve our global community.

PRINT NAME:

BENJAMIN ORRAME

SIGNATURE:

Benjamin Orrame

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Wynell Popovich

SB/HB # and Title: _____

PHONE #: wpopovich@dmsn.com

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

SB
I am for HB 19-131

As a resident of encroaching large fracking pads in my area (the size of which has never been attempted) I am very concerned & fearful of the health & safety effects; i.e. continued worsening air quality, impacts to health (cancer, asthma) & likelihood of accidents & explosions. The studies are showing impact already to reservoirs (Boulder).

The O&G regulations are extremely outdated to before there was such population growth in Colorado.

Local communities (municipalities) need to have some empowerment to protect their communities!!

The COGCC needs to change their motto from only promoting O&G development to actually promoting health & safety first. Instead, all they do is rubber stamp every project w/o regard to human beings! IT'S A MYTH THAT CO PROMOTES TOUGH REGULATION.

We need "forward thinking" proponents of safer forms of energy, instead of continued bury your heads in scorched earth extraction. We are all paying for this backward thinking. Retrain the O&G workers to newer, cleaner energy industries.

PRINT NAME: Wynell Popovich

SIGNATURE: Wynell Popovich

WRITTEN TESTIMONY SHEET

DATE: _____

NAME: Dana Miller

SB/HB # and Title: 181 Oil+gas omnibus

PHONE #: _____

PRIME SPONSORS: Fenberg Becker

WRITTEN TESTIMONY:

It's time.

It's time to change the mission of the COGCC to feature the health + safety of the community. It has been known for years that coloradans ~~are~~ ^{have been} suffering from the harmful effects of oil + gas operations across the state.

In order for us to move ahead to address the affects of climate change and ~~set~~ ^{move} toward renewable energy we need to restrict and revise the way oil + gas does business in our state.

It's time.

Let's get work + pass #181.

PRINT NAME: Dana Miller

SIGNATURE: _____



WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: FRANCES SHURE

SB/HB # and Title: _____

PHONE #: _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

I AM A RESIDENT OF COLORADO BUT A MINERAL RIGHTS OWNER IN TEXAS WHO REFUSED TO SIGN OVER MY MINERAL RIGHTS BECAUSE I KNOW THE HEALTH + ENVIRONMENTAL DANGERS OF FRACKING. I REFUSED TO SIGN EVEN THOUGH I KNEW I WOULD PROBABLY GAIN \$200^K-400,000 IN ROYALTIES, WHY? I MAKE THIS PERSONAL, AND I ABIDE BY THE GOLDEN RULE. I WOULD NOT WANT TO LIVE 500' OR EVEN 2500' FROM ANY OIL + GAS RIG. I WOULD NOT WANT TO COMPROMISE THE HEALTH OF MY CHILDREN OR GRANDCHILDREN — NOR THE HEALTH OF ANY CHILD OR PERSON.

PLEASE MAKE THIS PERSONAL + PASS THIS BILL!
THANK YOU

PRINT NAME: FRANCES SHURE

SIGNATURE: Frances Shure

WRITTEN TESTIMONY SHEET

DATE: 3-5-2019

NAME: Lanae Davis

SB/HB # and Title: SB 181

PHONE #:

PRIME SPONSORS: Fenberg

WRITTEN TESTIMONY:

I am a Broomfield resident being forced pooled. This has caused extreme financial, emotional and environmental impacts to my household, community and state. Please support SB 181 and put the health and safety of Colorado's residents over the fossil fuel industry. Large-scale industrial fracking does NOT belong in residential areas. I am facing over 100 wells on multi-acre well pads going in our community less than 1,000 feet from homes, schools and our water supply. Fracking does not belong next to homes, schools and water supplies. Please pass SB 181 and give local government's control over these operations in our communities. It is common sense!

PRINT NAME: Lanae Davis

SIGNATURE: Lanae Davis

WRITTEN TESTIMONY SHEET

DATE: 03/05/2019

NAME: TRACY COPPOLA/NPCA

SB/HB # and Title: 181 Protect Public Welfare

PHONE #:

PRIME SPONSORS:

oil & gas operations
Senators / Beckler
(Senate) (House)

WRITTEN TESTIMONY:

My name is TRACY COPPOLA, and I am the Colorado Program Manager for the National Parks Conservation Association (NPCA), located here in Denver. NPCA also has field offices in Grand Junction and Fort Collins, and a regional southwest and national presence. We Support SB 181!

NPCA has been a leader in national parks advocacy for a century now. We work to protect and preserve our nation's iconic and inspirational places for present and future generations.

While conserving these places is a priority, it cannot be accomplished without listening to, understanding and working with communities in region, and creating authentic partnerships at the local level.

Our nearly 12K members in Colorado care deeply about our natural areas and are concerned about the impacts of oil and gas

PRINT NAME: TRACY COPPOLA

SIGNATURE: 

1 of 2 (2 of 2 on back)

leasing and development on public health and safety.

~~We advocate for a bill~~
We advocate not for a bill end to all leasing - which this bill is also not advocating for - but, instead, a "smart from the start" approach to oil and gas leasing, which means a process of collaborative planning, thoughtful analysis and public involvement and then leasing where appropriate.

We look forward to seeing this bill progress and to a Colorado oil and gas Conservation Commission that helps protect our people and environment, because it will benefit Coloradans statewide, and it will set a model for the rest of the nation.

Please Pass SB 181. Thank you.

Tracy Lewis
WPCF

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Karen Kent

SB/HB # and Title: SB 181

PHONE #:

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

As a retired R.N., I respectfully request that the CO. State Senate support the continued safe production of oil & gas which heats our homes & transportation, both of which are crucial in our cold climate. Efficient, safe energy production also provide millions of dollars to our schools & economy, emergency responders, etc.

Please honor the voters' rejection of Prop. 112 last fall!!

Thank you for your service!

PRINT NAME: _____

SIGNATURE: _____

WRITTEN TESTIMONY SHEET

DATE: 03/05/19

NAME: Mindi Boothe

SB/HB # and Title: _____

PHONE #: _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

I am here today to write about why I am here to support the oil and gas industry. Oil and gas not only supports our economy but it also supports our families and jobs! Jobs Matter! Family matters!! I am passionate about what I do and proud of the work I do. This is my ~~dear~~ ~~dear~~ income and what supports me and my family! Oil and gas supports many non-profit organizations and has given money to tens of schools. This is how I support my daughter, myself my family. please, please, please take family and jobs into consideration while thinking of this bill that is going to impact many Coloradans.

God bless and thank you
for hearing us out!

PRINT NAME: Mindi Boothe

SIGNATURE: Mindi Boothe

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: RICK CASEY

SB/HB # and Title: SB19-181

PHONE #:

PRIME SPONSORS: Fenberg, Becker

WRITTEN TESTIMONY:

The Colorado Legislature should grant local control to oil and gas development through this bill. For too long, the oil and gas industry has been given too much power to self regulate, a trust which they have abused for their own greed and profit. This bill, based on health and safety concerns, should have an abundance of data illustrating how fracking affects the environment. But starting in 2005, the infamous "Halliburton Loophole" specifically exempted the hydraulic fracturing industry from the Clean Water Act in the 2005 Energy Policy Act - for no reason! As a state, Colorado could help close that loophole by giving local governments the power to say no through this bill. Thank you.

PRINT NAME: RICK CASEY

SIGNATURE: Rick Casey

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Vince Miller

SB/HB # and Title: 181

PHONE #: _____

PRIME SPONSORS: Fenberg

WRITTEN TESTIMONY:

See Attached

PRINT NAME: _____

SIGNATURE: _____

My name is Vince Miller, I live in Broomfield.

We have heard a number of people say "this is about jobs." Well, let's talk about jobs.

Many of us in this room obviously have, or have had jobs (retired). We used \$ from our hard work to buy homes in communities where we wanted to live, raise our families, perhaps to retire. Mega-size industrial O&G sites were not part of the picture.

The business plan of a company impacting Broomfield, Erie, parts of Adams County literally says it depends on forced pooling - forcing landowners, school districts, even cities to be part of their business - against their will.

The state allows communities to ban/zone/control businesses which the community does not want -- liquor, marijuana, strip clubs, etc - to protect public health, safety, welfare, quality of life. Former Governor Hicklooper was very concerned about possible problems associated with marijuana (and the state spent several million \$ in warning citizens **Don't be a lab rat campaign**. Dr. Wolk, the former director of the CDPHE, wrote an opinion article in the Denver Post saying communities should be able to ban e-cigarettes - because of possible health effects. But O&G get a free ticket.

The air that we breathe. If we have an easterly wind in the N Front Range, visibility goes down [It get hazy]. Why- some is due to cars and people, but roughly half is due to O&G emissions - 23,000+ wells in Weld County alone - said emissions which often end up being trapped for days under temperature inversions.

Industry spokespeople say - let's sit down and talk, but when they don't get their way, they threaten to sue, or simply turn their backs and walk out on people - as Extraction O&G did to the Broomfield City Council last summer.

The industry has had many opportunities to fruitfully work with citizens - but opportunity lost.

For example, ex-governor Hickenlooper and current governor Polis agreed to set up a "blue-ribbon" O&G task force panel several years ago. Among the proposed recommendations defeated by O&G executives on that panel:

Recommendation for full public disclosure of the chemicals used in oil and gas operations.

Recommendation to enhance public health and safety from O&G development.

Recommendation to protect the public from possible negative health impacts from fracking and drilling for oil and natural gas.

**Why would they oppose that. What are they hiding?
What is it they don't want us to know?**

So, we are depending on you! Hopefully we will get to the point that impacted communities can simply say: NO! We will not allow industrial maga-size oil and gas operations in our jurisdiction. And citizens, communities, schools - will not be forced pooled.

WRITTEN TESTIMONY SHEET

DATE: 3/15/2019

NAME: Alec Herr

SB/HB # and Title: SB 181

PHONE #:

PRIME SPONSORS:

WRITTEN TESTIMONY:

Thank you for taking the time to read my comments. My name is Alec Herr, and I am a resident of Boulder, Colorado. I am writing in support of SB 181. For far too long, the oil and gas industry has had relatively little regulatory oversight on its activities. To the best of my knowledge, the COGCC has never denied a fracking permit application. In addition, it is past time to allow local governments to decide how, or if, oil + gas development occurs within their jurisdictions, - authority they have for nearly every other industry. Furthermore, opponents of this bill may claim there will be jobs lost, but more people are employed in renewable energy than the coal, oil, and gas industries combined. This bill will have a direct impact on my life as an athlete with a history of asthma. I should not have to limit my time outdoors due to air pollution, much of which comes from oil and gas development activity. I urge you to vote yes on SB 181. Thank you for reading my comments.

PRINT NAME: Alec F. Herr

SIGNATURE: Alec F. Herr

WRITTEN TESTIMONY SHEET

DATE: 03/05/19

NAME: Eric R Rutherford

SB/HB # and Title: 181

PHONE #:

PRIME SPONSORS: Feinburg

WRITTEN TESTIMONY:

My name is Eric Rutherford

I served as an officer in the United States Marine Corps and as a Federal Agent with the Drug Enforcement Administration

I am a Republican.

I support this Bill. I took an oath to protect our Land/Water/Air, not just a flag or party. This bill does that.

We will be judged 100 years from now and I know that without DOUBT supporting this Bill is the right thing.

Thank you

PRINT NAME: Eric Rutherford

SIGNATURE: Eric Rutherford

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

Oit + gas health + safety

NAME: Kate Merlina

SB/HB # and Title: SB-101 Fenberg

PHONE #:

PRIME SPONSORS:

WRITTEN TESTIMONY:

I filed the District court case in *Martinez v. COGCC* and argued the case there. I have represented Oit + gas affected Coloradans for almost 6 years.

My clients are terrified, and I have nothing I can tell them. They have gone to their local gov'ts, the COGCC, the media, the operators - and there is no relief available.

Likewise I have been to OIG industry conferences - they testify that they will compromise + work with the people on these issues. Yet amongst themselves they only discuss how to prevent, delay, weaken, and avoid meaningful rule reform.

There are Coloradans whose lives will be literally and physically at risk without reform. Please support this bill.

PRINT NAME: Kate Merlina

SIGNATURE:



WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Tracy Koller

SB/HB # and Title: 181 Public Welfare O:1/AOS

PHONE #:

PRIME SPONSORS: Fenberg + Becker

WRITTEN TESTIMONY:

Please see attached.
(Please call if attached gets lost + I'll resend!)

PRINT NAME: Tracy Koller

SIGNATURE: 

3/5/19

SB 19-181 RE: Public Welfare Oil + Gas

Written Testimony

Sponsors: Fenberg + Becker

Committee Chair and Members, Good Afternoon.

My name is Tracy Koller. I am here today to testify in favor of Senate Bill 181.

This bill is long overdue and, while we have waited for this bill, countless Colorado citizens have suffered negative health impacts as a result of hydraulic fracturing.

The evidence is in, the science is clear. Data shows that byproducts of hydraulic fracturing, including dangerous VOCs such as benzene, hydrocarbon, ethylbenzene and xylene (BTEX) are known carcinogens. Yet, these chemicals are emitted into our water, soil, and air in the process of fracking. On the Front Range, they are emitted next to schools, playgrounds, and homes as well as near livestock, wildlife, rivers, and lakes. Developing fetuses and children suffer the vast majority of these health impacts, including respiratory effects, endocrine disruption, and cardiac and neurodevelopmental problems. Those impacts show up as infertility, miscarriages, and congenital anomalies, asthma, ADHD, and pediatric cancers such as leukemia. All the while, the companies responsible for these toxic emissions, an industry with tens of thousands of wells in Colorado and approximately 20 thousand in Weld County alone, have little governmental oversight.

For nearly five years as an inspector for the Colorado Department of Public Health and Environment, I surveyed hospitals, surgery centers, and dialysis facilities for compliance with State and Federal regulations. Those regulations were implemented and enforced for a reason: to ensure patient health and safety. These types of facilities have extensive regulations, their own internal oversight bodies, as well as oversight from multiple outside agencies. I know this firsthand as I surveyed and wrote deficiencies when compliance was not met. Hospitals in Colorado save multiple lives every single day, are staffed by dedicated and compassionate healthcare professionals, yet still require and benefit from regulations and oversight to prevent patient harm. I also know this firsthand as I am one of those healthcare providers, formerly a critical care nurse, now a Family Nurse Practitioner.

In stark contrast, the Colorado oil and gas industry has scant regulatory oversight to ensure health and safety. Instead, their oversight body "fosters" development of their industry. Despite that the health hazards from oil and gas company practices affect each and every one of us living and breathing on the Front Range, their oversight body enables instead of enforces. It is imperative that this change.

I respect CPDHE and admire their work more than I can express. I am a realist, however, and the reality is that the Director of CDPHE is a political appointee and as such likely comes with political bias. Due to that fact, I support having a second public health professional on COGCC or substituting the Director for a public health professional that is not a political appointee. In addition, I support development and enforcement of a robust body of regulations for oil and gas businesses directed solely at protection of citizen health and safety.

Other states have already banned fracking. According to experts, this was accomplished not because of progressive state governments but rather because the oil and gas industry hadn't sunk its teeth into those governments yet. So in the process of at least implementing oversight into unconventional oil and gas development here in Colorado, I ask our state government officials to reign in the oil & gas industry and advocate for my patients' health over profits of billionaires.

Thank you for your time.

Tracy Koller


WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: DAN WALKER

SB/HB # and Title: SB 19-181 Public Welfare re: oil/gas PHONE #:

PRIME SPONSORS: Fenberg & Becker

WRITTEN TESTIMONY:

I am an unaffiliated voter who voted against Prop 112 in the 2018 election. I write this testimony in support of SB 19-181.

In 2018, I was one of the many residents of Superior, CO who were surprised to learn of a permit filed by Highlands Natural Resources to perform hydraulic fracturing at the edge of our community and directly beneath the Rocky Flats Environmental Superfund site. Based on my own interaction with COGCC representatives, it became clear to me that the existing regulatory framework for oil and gas operations in Colorado was not sufficient to ensure even a study or analysis of the risks related to fracking below a Superfund site would be undertaken before this permit could potentially be approved. Furthermore, due to existing laws regarding mineral extraction, our local community and government would have very little meaningful input into the permit approval process. I consider this situation to be blatantly unacceptable. I appreciate what I consider to be the common sense aspects of SB 19-181, including giving local municipalities more control over where and how oil and gas may be extracted. The minerals located beneath us have been there for hundreds of millions of years. A regulatory framework which errs on the side of public health and welfare, while fracking technology continues to improve, strikes me as warranted, appropriate, and necessary. Thank you for your service to our State.

PRINT NAME: Dan Walker

SIGNATURE: 

Madame Chair and members of the committee, my name is Bob Hutson and I am here on behalf of Aunt Helens Coffee House and I oppose Senate Bill 181.

My wife and I own a small local coffee shop in downtown Greeley whose mission statement is to support and give back to our community. We have been in business now for 2 years and employ 10 team members. We opened our doors in 2017 and saw a 15% growth in 2018 taking us to a yearly revenue of just over \$350,000.

Over the last 6 months the property we lease from was purchased by 2 long time local companies that are support businesses to the oil and natural gas industry. With this acquisition of the building they have brought over 70 new employees to our downtown area. Since their move in our revenue dollars have increased another 10-15% over our previously stated growth. This has helped our coffee shop in multiple ways; expanding our capabilities, do more local fundraising and create more jobs for our community. We are only one of many local downtown businesses that are benefiting from the new population.

Whether its Downtown Greeley, Greeley or Weld County our backbone is the small family owned businesses whom all feel positive effects of this industry. When I think about Aunt Helens Coffee House losing 2-3 employees and multiply that by the 1000's of other local businesses...the numbers are staggering and debilitating.

I ask that you allow Weld County and its cities within to have a voice on this critical issue.

"I am happy to answer any questions."

Bob Hutson

WRITTEN TESTIMONY SHEET

DATE: 5 March 2019

NAME: Steve Harley

SB/HB # and Title: SB 19-181

PHONE #:

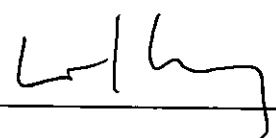
PRIME SPONSORS: Flenberg
concerning add'l public welfare protections regarding the conduct of oil & gas operations

WRITTEN TESTIMONY:

Colorado is long overdue for the balance and protections this bill provides

History will look kindly upon those who vote in support of health & welfare over profit and exploitation

PRINT NAME: Steve Harley

SIGNATURE: 

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Jason Harrison

SB/HB # and Title: SB 19-181

PHONE #: _____

PRIME SPONSORS: Becker/Finberg

WRITTEN TESTIMONY:

See Attached.

PRINT NAME: _____

SIGNATURE: _____

30-357
© 2019

Thank you Senators for your time today –

My name is Jason Harrison, I was born and raised in Aurora, I went to college in Fort Collins, and I have worked in Denver for most of my adult life. Currently, I am an organizer with Food & Water Watch and on behalf of our 40,000 plus members and supporters in the state, today I will be giving testimony in regards to our Neutral stance on SB 19-181, the Protect Public Welfare Oil and Gas Operation bill.

First and foremost, I commend you for taking action on an issue that has received nothing more than indifference from the legislative body for decades. This bill is a sign that progress is being made, and for that, I thank you.

However, the reforms in this bill were necessary 10 years ago, before oil and gas development ran rampant and unchecked in our state. These reforms were necessary before lives were lost, before our air and our waters were polluted, before corporations mattered more than people to this State.

The time for reforming the oil and gas industry has passed. 89% of Colorado is identified as being in a severe drought or abnormally dry.¹ A 2012 study by the Pacific Institute, concluded that a single frack can use up to 13 million gallons of water depending on the geological formation.² Our farmers, our ranchers, our ski industry, our firefighters, our urban centers cannot afford to compete over our most precious resource with corporate greed as we battle droughts and wildfires. Fracking robs communities of its resources.

When just yesterday, southwestern Colorado experienced a 4.5 magnitude earthquake, the largest since 1962, as a result of an injection well, we must call into question the safety of oil and gas operations.³ Particularly, when there are 140 schools and daycares within 2,500 feet of an oil or gas well.⁴ Beyond that, in 2017 alone, we experienced 15 explosions and fires that resulted in 4 civilian deaths; and, the last decade has seen over 50 oil and gas workers die in this state due to its normal operations.⁵ Fracking is not safe.

There have been over 1,200 peer-reviewed studies on the impact of fracking, most done in the last 5 years; one of which, a 2016 study published in Environmental Health Perspectives, evaluated the impact on legislative setback requirements in the Niobrara shale formation in northeast Colorado and concluded “people within these setback distances are potentially vulnerable to thermal injury during a well blowout” and “the same populations are susceptible to benzene and hydrogen sulfide exposure above health-based risk levels.” In the end, they asserted “there is no defined setback distance that assures safety.”⁶ Fracking is a threat to our health.

1. National Integrated Drought Information System. <https://www.drought.gov/drought/states/colorado>, March 5th, 2019.
2. The Pacific Institute. “Hydraulic Fracturing and Water Resources: Separating the Frack from the Fiction” http://www2.pacinst.org/wp-content/uploads/2013/02/full_report35.pdf June 2012.
3. CBS4Denver. <https://denver.cbslocal.com/2019/03/04/4-6-magnitude-earthquake-hits-western-colorado/>, March 4th, 2019.
4. Oil & Gas Threat Map. <https://oilandgasthreatmap.com/threat-map/> March 5th, 2019.
5. The Denver Post. “Drilling Through Danger.” <http://extras.denverpost.com/oil-gas-deaths/index.html> September 25, 2016.
6. Haley M, McCawley M, Epstein AC, Arrington B, Bjerke EF. 2016. Adequacy of current state setbacks for directional high-volume hydraulic fracturing in the Marcellus, Barnett, and Niobrara Shale Plays. Environ Health Perspect 124:1323–1333; <http://dx.doi.org/10.1289/ehp.1510547>. September 2016.

Therefore, I must reiterate, that the time for these regulations has passed. There is no room for fracking in our state if we value the health and safety of our communities. There is no room for fracking in our state if we value the clean air, water, soil, and wildlife that makes Colorado a world class destination. There is no room for fracking if we value local communities who are abandoned by an industry that comes in, extracts what it needs, and leaves. There is no room for fracking if we want to avoid the climate chaos of worsening wildfires and droughts. There is no room for fracking if we want to move to an economy of the future.

I applaud your efforts, but we must go further if we truly value the health, safety and future of Coloradans.

Thank you.

WRITTEN TESTIMONY SHEET

DATE: March 5, 2019

NAME: Jeremy Jackson

SB/HB # and Title: SB 19 181

PHONE #:

PRIME SPONSORS: Fenberg

WRITTEN TESTIMONY:

Thank You For the opportunity to provide a written testimony supporting SB 19 181 prioritizing health & safety with regard to regulating oil and gas development in the state. I am not a lobbyist or paid by any organization to support this bill. I am a common citizen who knew nothing about this topic until the threat of fracking became very real in my community, Superior, Colorado. I am not an expert, nor am I "anti" oil and gas, I simply support the bill because it returns powers where they belong (and where they reside in any other industry). Living with the threat of residential drilling has been one of the most stressful experiences at my adult life. The powerlessness and one-sided nature of current laws is unAmerican and threatens everything wonderful this country and this state has to offer. Waiting for fracking to leverage this inequity and destroy (A) my home value, and (B) the health and safety of my family is simply unbearable. I urge you to support this bill, returning powers where they most appropriately belong. Put health & safety above corporate profits and special interests. Thank You.

PRINT NAME: Jeremy Jackson

SIGNATURE: Jeremy Jackson

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: ellen lew.S

SB/HB # and Title: -181

PHONE #: _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

See Attached

PRINT NAME: _____

SIGNATURE: _____

Colorado S.B. 10-181
For an ACT Concerning Additional Public Welfare Protections Regarding the Conduct of Oil and Gas Operations.

Senate Committee on Transport and Energy Hearing, March 5, 2019

Thank you, Chairwoman Winters, and members of the Committee, for allowing me to speak in support of Senate Bill 19-181.

My name is Ellen Lewis. I am an M.D. physician practicing in Denver for 34 years. I have double boards in Pediatrics and Psychiatry and Neurology.

I speak today to support the prioritizing of public welfare protections in this bill, as a concerned citizen and physician who cares deeply about public health.

Numerous physical health effects of living in proximity to fracking operations are known and well-established, such as confusion, delirium, cognitive deficits, and especially long-term damage of developmental delays and neural tube defects in children.

However, often the mental health aspects of this situation are overlooked, so I searched this issue.

A multi-disciplinary group of 10 various researchers provided this empirically supported report, with 69 references of literature they reviewed: "Psychosocial Impact of Fracking: A Review of the Literature on the Mental Health Consequences of Hydraulic Fracturing," published in the "Journal of Mental Health and Addiction," in July 2017.

Their motive for this study was: "so that effective and targeted intervention strategies can be developed, disseminated, and implemented to improve mental health in fracking communities." I am impressed with their lack of political bias.

They note individual-level impacts, "even in the planning stages, including both proponents and opponents of fracking, of an increased sense of powerlessness, fear, betrayal, guilt, anger, stress, anxiety, and sleep disturbances."

In community-level impacts, they discuss the boom-bust cycle, and bearing the cost of activity of others. Communities report "a disrupted social fabric...perceptions of mistrust." "The long-term impact can be potentially crippling for generations, even after the boom is over." They note that "the burden...is often disproportionately carried by ... under-resourced populations."

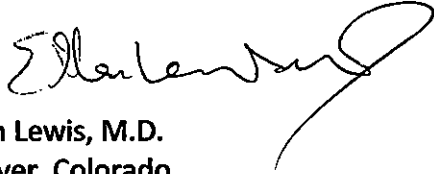
They discuss collective trauma as a result of fracking, the "distress produced by environmental change that results in the loss of a sense of place, threats to health, and powerlessness."

They speak to unnoticed and underserved mental health of oil and gas workers, a mobile population who may be "stigmatized against seeking help...as the host communities themselves are often hostile to incoming workers."

These are just a few of many negative mental health impacts reported, which deepen my concern for public welfare in this context, so I urge you to support this bill.

Please enter this script and this publication into the record.

Thank you very much

A handwritten signature in black ink, appearing to read "Ellen Lewis". The signature is fluid and cursive, with a large loop at the end.

Ellen Lewis, M.D.
Denver, Colorado

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/318279729>

Psychosocial Impact of Fracking: A Review of the Literature on the Mental Health Consequences of Hydraulic Fracturing

Article in *International Journal of Mental Health and Addiction* · July 2017

DOI: 10.1007/s11469-017-9792-5

CITATIONS

7

READS

916

11 authors, including:



Jameson Kenneth Hirsch
East Tennessee State University

208 PUBLICATIONS 2,048 CITATIONS

[SEE PROFILE](#)



Scott Meit
Central Arkansas Veterans Healthcare System

15 PUBLICATIONS 70 CITATIONS

[SEE PROFILE](#)



Teresa D LaFromboise
Stanford University

61 PUBLICATIONS 3,810 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Health Promotion in General Medicine View project



American Indian Adolescent Life Skills Development View project

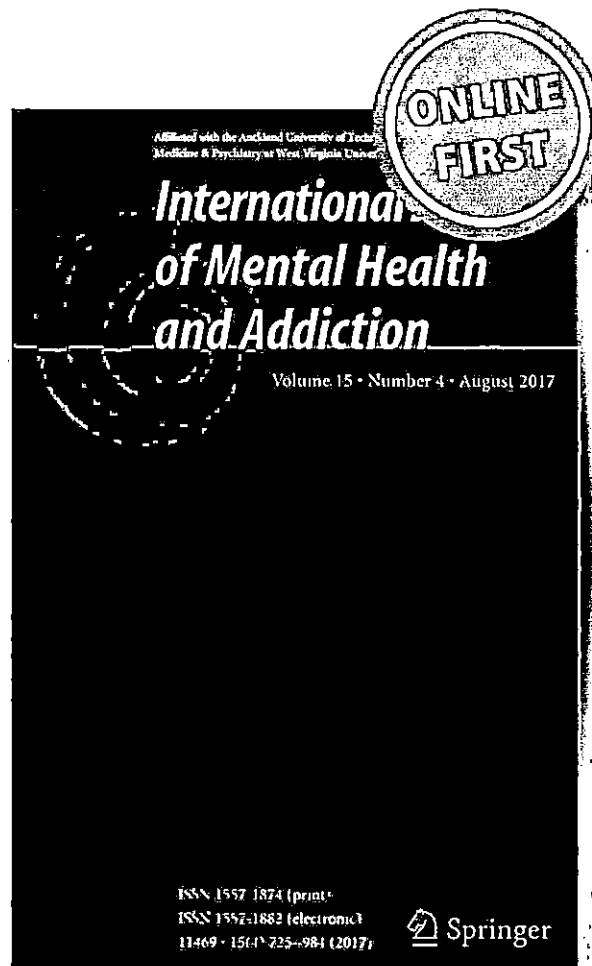
*Psychosocial Impact of Fracking: a Review
of the Literature on the Mental Health
Consequences of Hydraulic Fracturing*

**Jameson K. Hirsch, K. Bryant Smalley,
Emily M. Selby-Nelson, Jane M. Hamel-
Lambert, Michael R. Rosmann, Tammy
A. Barnes, et al.**

**International Journal of Mental
Health and Addiction**

ISSN 1557-1874

Int J Ment Health Addiction
DOI 10.1007/s11469-017-9792-5



Your article is protected by copyright and all rights are held exclusively by Springer Science+Business Media, LLC. This e-offprint is for personal use only and shall not be self-archived in electronic repositories. If you wish to self-archive your article, please use the accepted manuscript version for posting on your own website. You may further deposit the accepted manuscript version in any repository, provided it is only made publicly available 12 months after official publication or later and provided acknowledgement is given to the original source of publication and a link is inserted to the published article on Springer's website. The link must be accompanied by the following text: "The final publication is available at link.springer.com".



Psychosocial Impact of Fracking: a Review of the Literature on the Mental Health Consequences of Hydraulic Fracturing

Jameson K. Hirsch¹ · K. Bryant Smalley² · Emily M. Selby-Nelson³ · Jane M. Hamel-Lambert⁴ · Michael R. Rosmann⁵ · Tammy A. Barnes⁶ · Daniel Abrahamson⁶ · Scott S. Meit⁷ · Iva GreyWolf⁸ · Sarah Beckmann⁹ · Teresa LaFromboise¹⁰

© Springer Science+Business Media, LLC 2017

Abstract The process of natural gas extraction known as hydraulic fracturing, or fracking, is a controversial energy acquisition technique often viewed with disdain by the public, due to its potential for environmental harm. However, the mental health and psychological well-being of fracking communities, including potential benefits and detriments, are often overlooked. We reviewed the literature on the association between fracking and psychological functioning, finding that although persons living in fracking communities may experience some minimal, initial benefits such as land lease income or infrastructure development, they may also

✉ Jameson K. Hirsch
hirsch@etsu.edu

¹ Department of Psychology, East Tennessee State University, 420 Rogers Stout Hall, Johnson City, TN 37614, USA

² Department of Psychology, Georgia Southern University, Statesboro, GA, USA

³ Cabin Creek Health Systems, Charleston, SC, USA

⁴ Department of Pediatrics, Nationwide Children's Hospital, Ohio State University, Columbus, OH, USA

⁵ Department of Occupational and Environmental Health, University of Iowa, Iowa City, IA, USA

⁶ American Psychological Association, Washington, DC, USA

⁷ Central Arkansas Veterans Health System, Little Rock, AR, USA

⁸ The Society of Indian Psychologists, Albany, NY, USA

⁹ Yakima Valley Farm Workers Clinic, Toppenish, WA, USA

¹⁰ Department of Developmental and Psychological Sciences, Stanford University, Stanford, CA, USA

experience worry, anxiety, and depression about lifestyle, health, safety, and financial security, as well as exposure to neurotoxins and changes to the physical landscape. Indeed, entire communities can experience collective trauma as a result of the “boom/bust” cycle that often occurs when industries impinge on community life. Impacted communities are often already vulnerable, including poor, rural, or indigenous persons, who may continue to experience the deleterious effects of fracking for generations. An influx of workers to fracking communities often stokes fears about outsiders and crime; yet, it must be recognized that this population of mobile workers is also vulnerable, often ostracized, and without social support. Practitioners, researchers, and policy makers alike should continue to investigate the potential psychological ramifications of fracking, so that effective and targeted intervention strategies can be developed, disseminated, and implemented to improve mental health in fracking communities.

Keywords Fracking · Hydraulic fracturing · Mental health · Quality of life · Stress · Rural

The extraction of shale gas by unconventional means (i.e., unconventional gas extraction), known as hydraulic fracturing (fracking), is a drilling strategy that aims to release trapped natural gas. This process is conducted by creating fissures in the ground (often via horizontal drilling that impacts land adjacent to gas fields) or by using existing wells and injecting hydraulic fracturing fluid, which is a toxic mixture of water, sand, and chemical additives, to force natural gas to the surface. Areas targeted for fracking are often situated in rural locales (Castelli 2015). Rural communities that host fracking operations often experience a “boom/bust cycle,” whereby their population surges, consequently exerting stress on community infrastructure and service provision capabilities (e.g., medical care, law enforcement) (McDermott-Levy et al. 2013; Ruddell et al. 2014). Although there may be some initial benefits to fracking for a community or some individuals within a community (e.g., job availability, royalty checks), there is generally a strong opposition, preceding and during fracking operations, in affected areas (Szolucha 2016). Further, in general, fracking appears to have a poor reputation globally and is increasingly recognized as a contributor to environmental health problems (Crowe et al. 2015; McCoy and Saunders 2016).

Such types of deleterious community outcomes are well-documented in the extant literature; however, what are often overlooked are the mental health and psychological well-being of fracking communities, at both the individual and group level (Illes et al. 2014). Preliminary evidence suggests that persons living in communities impacted by fracking experience worry and anxiety about themselves and their communities (Brasier et al. 2014), including about the degradation of their lifestyle, safety, and financial security. Furthermore, due to the ramifications of the boom/bust cycle, communities themselves can be traumatized by the entrance of the fracking gas industry into their lives (Perry 2012). With the production of shale gas growing rapidly in the USA and globally (e.g., it is projected that shale gas will account for 55% of natural gas production by 2040), it is critical that researchers and clinicians address the potential psychological ramifications of fracking (Clough and Bell 2016); such insight will help to inform the inoculation of communities prior to fracking, as well as intervention efforts during and after fracking, given the risk that this industry sometimes poses for communities. As such, in the current manuscript, we review the existing interdisciplinary literature that either qualitatively or quantitatively, and either empirically or theoretically, addresses the interpersonal and psychological consequences that shale gas and oil extraction have on a community and its citizens.

Search Strategy for Identification of Studies

We conducted a comprehensive review of the literature, using a framework inspired by the PRISMA strategy (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Liberati et al. 2009), focused on the impact of fracking on psychological and behavioral health, and all identified studies were included regardless of study design or methodology. All studies focused on fracking or other forms of forced gas/oil extraction as they related to mental health, interpersonal health, psychological well-being, and community health were eligible for inclusion. An electronic search for eligible studies was conducted using the following electronic databases: MEDLINE (1966–2016) and PsycInfo (1966–2016); Google Scholar was also used as a resource for identifying white papers, theses and dissertations, and governmental and other reports. Although fracking did not emerge as an energy extraction technique until after the turn of the twenty-first century, we used an earlier date search parameter, so that we might also place fracking into the larger, more evolved literature on boomtowns that existed prior to the year 2000. Search strategies were developed using combinations of the following keywords/index terms: fracking, hydraulic fracturing, mental health, psychopathology, depression, anxiety, substance abuse, public health, and community health. There was no language restriction. Retrievals were reviewed by title and abstract to identify studies appearing to qualify for the review, and the final decision for inclusion was based on the full report. Although this literature review is exhaustive, we do not report every citation or resource, so as to avoid duplication of content and, rather, we summarize emergent themes in the study of psychological issues occurring as a result of fracking (see Table 1); snowballing and saturation techniques were applied in the development of thematic coding and citation selection.

Review of Literature on Psychosocial Consequences of Fracking

Individual-Level Impact of Fracking on Mental Health Although rigorous research is lacking, preliminary evidence suggests that fracking can exert a negative influence on the well-being and quality of life of those affected. However, it must be noted that these deleterious relations may be dependent on one's perception. In a recent study, Lai and colleagues found that, if a person's perceptions of fracking were positive (e.g., fracking will have a beneficial impact on the self and community), they were more likely to experience positive emotions and well-being, compared to those who perceived fracking as harmful (e.g., anticipated loss of personal or community resources), who experienced negative emotions and poorer well-being (Lai et al. 2017).

With regard to potential poor health outcomes, however, it is becoming increasingly well-established that individuals in fracking communities experience a wide range of illnesses (e.g., increased rates of cancer) and physical symptoms, including fatigue, headaches, ocular and dermatologic irritation, confusion, and delirium, as well as an array of additional respiratory, gastrointestinal, immunological, endocrine, and sensory maladies (McDermott-Levy et al. 2013; Bamberger and Oswald 2012; Balise et al. 2016). Additionally, many mobile gas/oil workers, as well as residents of affected communities, develop neurological and neuropsychological symptoms as a result of exposure to toxic chemicals and contaminated water. These symptoms can include problems with balance, disorientation and fainting, and cognitive deficits, developmental delays, and neural tube defects in infants (Cabrera et al. 2016; Tucker 2012; Colborn et al. 2014; McKenzie et al. 2012). Of note, the experience of having

Table 1 Summary of empirically supported literature review findings on fracking and psychosocial health

Author(s)	Publication year	Sample type	Methodology	Main finding
Brasier et al.	2014	Students, low-income residents, institutions, agricultural and healthcare representatives	Policy review, focus groups, and survey	Worry and anxiety about self and community
Drummond and Grubert	2017	Community members	Interview	Tension, loss of trust in the government and industry
Evcansen and Steadman	2017	Community members	Interview	Acknowledged potential for flourishing via fracking benefits, with fears of disruption and non-flourishing
Ferrar et al.	2013	Community members	Interview	Stress was the most reported symptom; perceived social and health impacts increased over 2 years
Ferrari	2013	Community members	Interview	Anger, anxiety, loss of power, reduced quality of life
Filteau	2014	Oil/gas workers	Interviews	Perceived stigma and hostility
Jaspal et al.	2014	YouTube contributors	Secondary review of fracking-related YouTube videos	Perceived threat to values, sense of self-efficacy, and community continuity
Lai et al.	2017	Community members	Survey	Negative perceptions of fracking related to negative emotions; positive perceptions related to positive emotions; loss to self and place more salient than gain
Maguire and Winters	2016	Community members	Survey	Poor life satisfaction; more work days missed for mental health reasons
Mauro et al.	2014	Community members, organizations, and industry	Secondary analysis of public comments	Concerns and worries about pollution and traffic and their impact on mental and physical health
McDemott-Levy et al.	2016	Community members	Qualitative and descriptive	Stress, powerlessness
Morgan et al.,	2016	Australian farmers	Survey	Concern about fracking impact to health, farm, and communities; greater depression, anxiety, and stress reactivity
Morrone et al.	2015	Community members	Interviews and survey	Disrupted social cohesion, erosion of community pride, feeling exploited, breakdown of shared community values
Perry	2012	Agricultural landowners	Ethnographic, interviews, and focus groups	Depression, sense of loss, betrayal, guilt, anger, emotional "highs and lows," long-term health fears for self and children
Perry	2013	Community members	Ethnographic, interviews, and focus groups	Changes in social interactions, altering history and memories, sense of loss and sadness
Powers et al.	2015	Community members	Secondary review of letters to the editor	Concern about changes to rural "way of life," competition for resources, fear of pollution

Table 1 (continued)

Author(s)	Publication year	Sample type	Methodology	Main finding
Resick et al.	2013	Female community members	Interview	Powerlessness, fatigue, sadness
Saberi et al.	2014	Primary care patients	Survey	Anxiety, sleep disturbances
Sangaramoorthy et al.	2016	Community members	Focus groups	Disrupted sense of place and social identity, changed relationships, social distress including uncertainty, anger, fear, and anxiety
Short and Szolucha	2017	Community members	Ethnographic, interviews, and observation	Stress, worry, collective trauma
Steinzor et al.	2013	Community members	Surveys	Behavioral health, mood, and energy problems
Szolucha	2016	Community members	Ethnographic and interviews	Stress, strain, fear, anxiety, mental anguish, sleep disturbances
Weber et al.	2014	Social service directors	Focus groups	Increased homelessness, domestic violence, and food insecurity

a “mysterious” fracking-induced illness, with a remedy that is, perhaps, perceived to be out of one’s control (e.g., inability to influence removal of, or move away from, toxins), is likely to have adverse effects on mental health, thereby contributing to anxiety and depression. This relationship appears, in many ways, to mirror the well-established interconnections of chronic disease and depression (Chapman et al. 2005).

While evidence continues to emerge regarding direct, individual symptoms associated with fracking, reports of broadly defined social, emotional, and behavioral disturbances are also mounting in fracking-affected communities (Cerros 2015; Ferrar et al. 2013). Many individuals in fracking communities experience exacerbated fears about their health and that of their children, due to the long-term impact of fracking (Perry 2012). Even in the planning stages, prior to resource extraction initiation, involved community members, including both proponents and opponents, report an increased sense of powerlessness, fear, betrayal, guilt, anger, stress, and anxiety, as well as sleep disturbances (Short and Szolucha 2017; Szolucha 2016). Yet, very little empirical research has focused on the psychological and behavioral health of persons and communities impacted by fracking. Furthermore, these topics are typically not addressed in company-level or governmental-level risk assessments of fracking, suggesting an area of critical importance that is overlooked by researchers, clinicians, and policy makers alike (Watterson and Dinan 2015).

Existing research in this domain has been largely qualitative in nature, but clearly appears to focus on central themes of mental distress. For instance, Steinzor and colleagues reported, in a community-based assessment, that fracking is perceived to impact the mood, energy, and behavior of the members of a fracking community (Steinzor et al. 2013). In an interview-based study of community members impacted by the Marcellus shale gas boom, Ferrar and colleagues found that psychological stress was the most frequently reported complaint (Ferrar et al. 2013). In a study of complaints made to the nursing personnel, feelings of stress and powerlessness related to fracking were the most commonly reported consequences (McDermott-Levy and Garcia 2016). In a secondary review of Health Impact Assessments (HIA) of fracking in the UK, Watterson and Dinan found that community members from fracking-affected locales reported fear, anxiety, and stress, as well as sleep disturbances and depression (Watterson and Dinan 2015). Primary care patients interviewed from a Pennsylvania fracking community reported anxiety and sleep disturbances (Saberi et al. 2014). In another study, a field survey of female community members in the Marcellus shale region, powerlessness, fatigue, and sadness were attributed to fracking (Resick et al. 2013).

In one of the few empirical studies on this topic, in a sample of Texas residents, horizontal, unconventional gas extraction (as compared to traditional drilling) was related to poorer subjective well-being and more days of work missed due to mental health reasons (Maguire and Winters 2016). Noise pollution from fracking operations (e.g., traffic, flares/burn-offs) is often cited as a source of psychological distress, as well as poor academic performance in children (Redmond and Faulkner 2013). For example, the low-frequency noise that comes from well pumps contributes to irritation, unease, and fatigue (Coram et al. 2014). Light pollution, including, in some areas, constant illumination from fracking operations, can also contribute to stress and sleep disruptions (Korfmacher et al. 2013; Werner et al. 2015). Additionally concerning, and not often considered, is the distress that community members might feel about unknown and dangerous chemicals, soil and water safety, land and housing prices, and job assurances and future livelihoods (Carey 2012; Witter et al. 2010), often manifesting as anger, anxiety, helplessness, and a loss of trust in the industry and the government (Drummond and Grubert 2017; Watterson and Dinan 2015).

Community-Level Impact of Fracking on Psychosocial Functioning Poor mental and physical health outcomes that stem from fracking activities contribute to what is called, from a theoretical perspective, a “negative externality,” or having to bear the cost of the activity of others. In the case of fracking, neighbors and entire communities are often impacted by the actions of others (e.g., outsiders imposing fracking, neighbors engaging in fracking to the detriment of others) (Castelli 2015). At the level of daily engagement, members of fracking communities report experiencing stress from a disrupted social fabric, as their communities experience an influx of non-native workers and businesses, and a disruption to daily routines. Such disruptions contribute to distress for long-time community members, who may view such intrusion with alarm and concern. Indeed, in some communities, residents expressed that they could foresee no positive effects that would emerge from allowing fracking into their community (Szolucha 2016), and these fears are often compounded by perceptions of mistrust and lack of transparency in the actions of the industry and the government (Ferrar et al. 2013). In one past qualitative interview study, this tension is framed in terms of flourishing; on the one hand, residents may perceive the entry of hydraulic fracturing into their community as a means to support, promote, and encourage thriving in a community (e.g., creation of jobs), whereas, on the other hand, they may view fracking as a disruptor to community thriving (e.g., change in way of life) (Evensen and Stedman 2015).

According to the social disruption hypothesis (Jacquet and Kay 2014), the rapid growth and changes that can occur in a fracking community can contribute to an erosion of social norms and can negatively impact and alter collective memories and collective meaning-making for members of a community (England and Albrecht 1984). The long-term impact can be potentially crippling for generations, even after the boom is over (Weber et al. 2014). Social disruption may be particularly problematic for rural areas, where towns are often characterized by long-standing social/political roles and relationships that can be challenged in the face of boomtown development (Jacquet and Kay 2014). As well, indigenous and agricultural communities may be particularly impacted by fracking, given their historical attachment to, and dependency on, the land they live on, which is often damaged as a result of the fracking process (Sangaramoorthy et al. 2016).

In the few studies that exist on this topic, themes of disruption are pervasive, including anger about the outsourcing of natural resources, anxiety about their families and homes, and a negative impact on the quality of life (Ferrari 2013). In a qualitative analysis of “letters to the editor” printed in fracking communities, Powers and colleagues noted that citizens were concerned about the changes to their rural communities, including job availability, threats to water availability and safety, competition for resources with newcomers, and changes to their rural “way of life” (Powers et al. 2015). Additionally, the loss of “peaceful country vistas” has been acknowledged as a potential psychologically damaging effect of fracking for rural areas, as noted in an environmental impact report from Nova Scotia (Mauro et al. 2014). Residents of fracking communities may have to adapt to a change in perception of their hometown from a “farming town” or “peaceful rural area” to a dirty, and even stigmatized, place to live (Jacquet 2014). In another qualitative study, which analyzed perceptions of fracking present in YouTube videos, Jaspal et al. (2014) found that fracking often engenders negative views within communities as an assault on common environmental values (e.g., respecting the “clean air,” idyllic nature, and essence of rural areas) and a threat to both individual-level (e.g., self-efficacy) and community-level continuity (Jaspal et al. 2014). In a sample of 104 fracking-impacted

residents of Appalachia, Morrone et al. (2015) found that the respondents experienced disruptions to social cohesion, erosion to community pride, feelings of being exploited, and a breakdown of shared community values (Morrone et al. 2015).

Industrialization, traffic congestion, and loss of solitude disrupt the rural way of life, as do the sudden appearance and disappearance of workers and their families. This effect can ripple across community institutions such as schools and churches. In most of the communities impacted by fracking, the influx of new residents, as well as the health concerns of current residents, often overwhelms the existing healthcare infrastructure. Fracking-impacted communities often experience increased rates of visits to healthcare professionals and increased rates of hospitalization, emergency room visits, neurological visits, and primary care visits, often taxing already underresourced local healthcare systems (Brasier et al. 2014; Jemielita et al. 2015).

Gender/sex imbalances are also a frequent source of tension for fracking communities, who may find themselves suddenly overwhelmed with a largely male population, not only creating community tension but also contributing to disruptions in community relationships and fears for the safety of community members (e.g., rates of crime and sexual assault often increase in towns experiencing industrial booms) (Ruddell et al. 2014). Community concerns about “roughnecks” and “man camps,” although often stereotyped, do frequently result in increased rates of violence, sexual assault, sexually transmitted diseases, and the increased presence of illicit drugs (Witter et al. 2008; Tosh and Gislason 2016). The entrance of prostitution and sex trafficking into communities is also often preceded by the appearance of energy resource development industries (Measham et al. 2016). Such threats, whether real or perceived, are not to be underestimated as they injure the collective emotions and well-being of a community. The resulting historical trauma can persist for generations, but is often overlooked as a source of mental and physical distress.

Unfortunately, the burden of resource extraction efforts, such as coal mining, oil drilling, fracking, and other well stimulation techniques, is often disproportionately carried by underprivileged and underresourced populations, including indigenous, rural, and poor persons, as their living locales often overlap with extraction fields. For instance, Clough and Bell note that fracking is more likely to occur in areas with larger concentrations of poor persons and, further, that those living in the closest proximity to drilling sites were the least likely to reap financial or other benefits from fracking activities (Clough and Bell 2016). Paylor notes that the benefits of fracking are most often manifest for persons in highly or very highly developed regions or countries, whereas the majority of risks of fracking appear to impact persons in areas with low or medium levels of development, such as rural locales (Paylor 2017). Castelli reported that most fracking activities in the USA occur in areas that are rural and poor and that, therefore, these populations experience the most burden from fracking activities (Castelli 2015). As well, the children and the elderly in these locales are often disproportionately impacted by exposure to health hazards (Coram et al. 2014), given their developmental vulnerabilities. Native Americans, particularly those living on rural reservations, may be particularly vulnerable to the effects of fracking; that is, on the one hand, tribes may be tempted to engage with the oil companies to secure a source of income but, on the other hand, must often engage in legal battles to protect their sovereign rights and the natural resources of their land (Weber et al. 2014).

Even other extraction-based (e.g., foresting, fisheries) and agricultural vocations, which often employ residents of these rural, poor communities, come under threat from fracking efforts, as water becomes tainted, land is repurposed, and the soil becomes poisoned (Perry

2012). In one example exploring a sample of Australian farmers, respondents reported both farm-related (e.g., impact on profitability, disruption to operations) and non-farm related (e.g., health concerns) concerns about coal seam gas extraction, or fracking. Competition for resources between farmers and oil companies contributes to stress for agricultural workers and their families, as well as to a community-level “us versus them” mentality that creates community distress (Morgan et al. 2016). In a Germany-based risk assessment of oil extraction, funded by ExxonMobil, it was noted that tourism, agriculture, and nature conservation are negatively impacted, and community members become distressed when fracking occurs nearby—these impacts on the ability of a community to sustain itself may be irreversible in the damage they commit (Ewen et al. 2012). Further, these deleterious injuries to the communities and the land are intergenerational in nature, in that their effects will continue to exert a negative influence for generations to come. Thus, the applicability of the concept of historical trauma to the community experience of fracking seems appropriate.

Collective Trauma as a Result of Fracking As we have noted throughout, there are both tangible and intangible changes to communities impacted by fracking and, as has happened historically in extraction-impacted and boomtown communities (i.e., gold rush, oil drilling, logging, mountaintop mining), there are typically poor health consequences as a result. These poor outcomes occur at both the individual level, in the form of physical and mental health difficulties, and the level of the community, with changes often occurring in the quality of life, morbidity, and mortality. Sociopolitical stressors, town hall conflicts, and differences of opinions often divide communities and make enemies of neighbors (Jacquet 2014). The persistent, deleterious biopsychosocial impact to people and communities affected by fracking can be conceptualized as a form of collective trauma, from which communities may struggle to recover once the boom is over and the bust begins. In an ethnographic study of a community affected by the Marcellus shale gas boom, Perry interviewed community members, who reported that the arrival of the gas industry signaled a change in the way they viewed and interacted with their land, neighbors, and the larger community, forever altering their family histories and memories and engendering feelings of loss and sadness (Perry 2013). In a series of focus groups, Sangaramoorthy and colleagues found that fracking disrupts a person’s sense of place and social identity, changing relationships, and generates widespread social distress, including uncertainty, anger, fear, and anxiety (Sangaramoorthy et al. 2016).

This often insidious damage to the collective psyche and social structure of impacted communities involves many factors, including actual aesthetic damage to the landscape; removal of valuable resources (often without long-lasting benefit to the community); erosion of socioeconomic base and tourism; destruction of historical, heritage, and sacred sites; a sense of loss of control (e.g., loss of land or livelihood); and a sense of being bullied by the government and the industry (Vaneckova and Bambrick 2014; Brake and Addo 2014). As well, the invasive techniques of fracking and its environmental consequences, including flowback and increased risk of tremors and earthquakes, are sometimes referred to as an assault—as a “raping” of the land—and a removal of innocence from communities (Tosh and Gislason 2016). In a review of health risks related to fracking, Moss and colleagues noted that communities, often rural, experience sustained stress from the incursion of oil and gas companies (Moss, Coram, & Blashki, 2016). This stress contributes to poor community health and well-being, in part due to what is conceptualized as “solastalgia,” or the distress produced by environmental change that results in the loss of sense of place, threats to health, and powerlessness (Albrecht et al. 2007).

Mental Health of Oil and Gas Workers We would be remiss if we did not also mention the psychosocial impact of fracking on the transient workers that flock to the natural gas fields, leaving behind families to enter a culture of hyper-masculinity, dangerousness, and rurality. As noted by Angel (2014), “frontier masculinity,” often associated with resource extraction vocations, involves rugged individualism, emotional toughness, and self-reliance and often results in an internalization of stressors until a psychopathology emerges (Angel 2014). Angel (2014) also describes the changing face of oil and gas workers over time, as an increasing number of “family men” move to rural and frontier areas in search of increased wages, leaving behind support systems and normal routines. In a review of fracking-related health risks, Moss and colleagues noted that social isolation, among other factors, may contribute to substance misuse and violence in mobile, or fly-in, fly-out (FIFO), workers (Moss et al. 2016). It should also be noted that these transient workers sometimes do bring their families, and this has contributed to increased child protective and foster care cases in affected areas, increased domestic violence and usage of women’s shelters, and increased food insecurity and distribution of food stamps. In addition, many transient workers (and their families, when present) end up homeless, often due to unavailability of housing or exorbitant rental prices (Weber et al. 2014).

Thus, there exists a mobile population of workers who may be experiencing psychological distress but may be stigmatized against seeking help and may also not have access to resources or health benefits in their host communities. Indeed, the host communities themselves are often hostile to incoming workers, whom they view as “ruining” their communities by depleting environmental and social resources and creating hazards and danger; as such, mobile workers are often viewed as “dirty” outsiders by communities, depriving these vulnerable groups of workers opportunities to interpersonally and socially engage with a community (Filteau 2015). For instance, in a study of a boomtown in Utah, community members experienced an anticipatory shift in their attitudes and beliefs upon gaining knowledge of the impending arrival of mobile workers, manifesting increased fear and decreased trust (Brown et al. 2005). The literature on the mental health of mobile gas/oil workers and on their relationships with host communities is sparse. Future work is needed to better understand the psychological needs of mobile workers and how host communities can best provide needed services to these often overlooked populations.

Implications

The findings emerging from our literature review, documenting the potentially deleterious effects of fracking on psychological and behavioral health, may have research, clinical, and policy implications. From a psychoeducational perspective, practitioners are encouraged to consider providing education and sources of factual, objective information to communities regarding both actual and perceived risks of fracking to environmental and community health, fears about which can negatively impact psychological well-being. Practitioners can also advocate for the development and implementation of training for healthcare workers, including mental healthcare professionals, that will increase knowledge about the challenges facing both community members and mobile workers in the context of fracking and how best to treat them medically and psychologically (Korfmacher et al. 2013). Finally, advocates and governmental officials may work most effectively together with constituents, using a community-based participatory approach to prepare in advance for the onset of fracking activities in a

community, and can utilize a safety monitoring board to insure that industries adhere to local regulations (Haggerty and McBride 2016). Such community engagement can lead to a sense of empowerment, rather than powerlessness, in the context of fracking and has the potential to promote resilience and prevent increased severity of adverse consequences for affected individuals and communities.

Clinicians working with fracking-affected community members or mobile workers should be aware of the plethora of potential stressors possible, including existential concerns about their community legacy, how to address those concerns, and how to resolve access to care issues for transient workers who may be experiencing mental health problems (Saber 2013). Understanding the connection of the often rural fracking communities to the land, particularly for indigenous groups, farmers, and especially for those responding from a spiritual/existential perspective, may be important for clinicians, as well as the clergy. Indeed, a modern paradigm of pastoral care, ecotheology, seeks to focus on the deep-rooted, spiritual connection that some persons and groups have with the land they have cared for, often for generations (Connor 2013).

With regard to research, as well as future development of shale gas operations, it will be the role of environmental neuroethicists to critically evaluate the impact of fracking on mental health and neurological development (Cabrera et al. 2016). Ecopsychologists and environmental psychologists must undertake an investigation of the psychosocial and sociocultural ramifications of fracking, including the long-term impact to communities and cultures. Clinical and social psychologists should consider an investigation of potential mediators and moderators of the fracking-psychopathology linkage, including individual-level and community-level risks and protective factors that may exacerbate or ameliorate, respectively, the impact of fracking on health, well-being, and quality of life. Funding specifically designed to examine the short- and long-term mental and physical effects of fracking at the individual and community levels should be prioritized across federal agencies, as the effects cross the missions of agencies ranging from the National Institute of Mental Health, the National Institute of Occupational Safety and Health, and the Environmental Protection Agency. Coordination of funding opportunities across the federal landscape could help direct much needed resources to provide the baseline level of knowledge necessary to begin constructing initiatives to counteract fracking's negative effects.

With regard to policy, it is recognized that the industry and the government need to include assurances of individual and community well-being in the planning and execution of any energy generation projects, such as fracking. For instance, in an independent review of fracking by the Public Health Association of Australia, it is noted that the "amenity provided to humans by access to unspoilt natural places is significant for wellbeing" and, conversely, that fracking is detrimental to local and natural environments, thereby jeopardizing well-being (Moore 2013). In the developmental phases of resource extraction, it is critical that psychologists, sociologists, and ethnologists be included in the conduct of "social impact assessments" so that, in addition to the evaluation of demographic and economic factors, there is also attentiveness to disadvantaged and marginalized groups, a focus on capacity building, and empowerment of communities. In addition to insuring the health of their community members, local governments can get involved in the promotion of mental health for mobile gas/oil workers in their communities by enacting land use ordinances that stipulate the provision of adequate physical and mental healthcare by employers (Minor 2014).

From a social justice and psychological activism perspective, grassroots organizations, as well as indigenous groups, have recently been using legal avenues (e.g., for Native American/

American Indian, their legal status and cultural heritage) to challenge and enact change in industry and government decision-making. As such, community organizers and community health practitioners may be able to engender change by encouraging constituents to appeal to the judicial system to block fracking in communities or, at the very least, to compel the larger oil/gas industry to address broader health issues, such as the provision of mental health resources, to communities forced to endure shale gas extraction efforts (Ward et al. 2016; Garvie and Shaw 2015). At the community level, recognizing the critical importance of allowing residents to democratically participate in the decision-making process about fracking activities within their community and providing transparency and accountability may help to empower community members and reduce collective anxiety (Haggerty and McBride 2016; Wheeler et al. 2015).

Conclusions

Overall, in our review of the literature, we found that hydraulic fracturing, or fracking, remains a poorly understood yet controversial energy extraction technique that appears to be related to poor physical, social, and psychological consequences for impacted communities and community members, who are often rural and poor. Spanning neurological, psychopathological, interpersonal, and existential concerns, there appears to be an array of levels of psychosocial functioning that are deleteriously affected by the fracking process and industries and their aftermath. Although much of the research linking fracking to psychological functioning is preliminary or embedded in impact statements and white papers, it is hard to ignore the consistency of findings that point to widespread and potentially permanent effects on mental health. Thus, our literature review provides an important first step in understanding the psychological toll that this energy development strategy has on fracking communities and sets the stage for advancements in research, clinical and policy, that will help us to better understand, assist, and advocate for those affected by fracking.

Compliance with Ethical Standards

Conflicts of Interest The authors declare that they have no conflicts of interest.

References

- Albrecht, G., Sartore, G. M., Connor, L., Higginbotham, N., Freeman, S., Kelly, B., et al. (2007). Solastalgia: the distress caused by environmental change. *Australasian Psychiatry*, *15*(sup1), S95–S98.
- Angel, A. (2014). *Beyond the "roughneck" stereotype: revealing the actual face of mobile workers in the Alberta oil sands and North Dakota's Bakken oil region and why it matters to health*. White Paper, 08.14. Target Logistics. Downloaded from: http://www.targetlogistics.net/1_pdfs/white-papers/BeyondtheRoughneckStereotypeWhitePaper.pdf.
- Balise, V. D., Meng, C. X., Cornelius-Green, J. N., Kassotis, C. D., Kennedy, R., & Nagel, S. C. (2016). Systematic review of the association between oil and natural gas extraction processes and human reproduction. *Fertility and Sterility*, *106*(4), 795–819.
- Bamberger, M., & Oswald, R. E. (2012). Impacts of gas drilling on human and animal health. *New Solutions: A Journal of Environmental and Occupational Health Policy*, *22*(1), 51–77.
- Brake, W., & Addo, E. (2014). Tourism and 'fracking' in Western Newfoundland: interests and anxieties of coastal communities and companies in the context of sustainable tourism. *International Journal of Marine Science*, *4*(2), 16–41. doi:10.5376/ijms.2014.04.0002.

- Brasier, K., Davis, L., Kelsey, T., McLaughlin, D., Schafft, K., Babbie, K. et al. (2014). *The Marcellus shale impacts study: chronicling social and economic change in North Central and Southwest Pennsylvania*. Center for Rural Pennsylvania. Retrieved from: <http://www.rural.palegislatore.us/documents/reports/The-Marcellus-Shale-Impacts-Study.pdf>
- Brown, R. B., Dorins, S. F., & Krannich, R. S. (2005). The boom-bust-recovery cycle: dynamics of change in community satisfaction and social integration in Delta, Utah. *Rural Sociology*, 70(1), 28–49.
- Cabrera, L. Y., Tesluk, J., Chakraborti, M., Matthews, R., & Illes, J. (2016). Brain matters: from environmental ethics to environmental neuroethics. *Environmental Health*, 15(1), 1.
- Carey, M. (2012). Coal seam gas: future bonanza or toxic legacy? *Viewpoints*, 8, 26–31.
- Castelli, M. (2015). Fracking and the rural poor: negative externalities, failing remedies, and federal legislation. *Indiana Journal of Law and Social Equality*, 3, 281–304.
- Cerros, H. J. (2015). *From a public health perspective: fracking and other unconventional oil and gas extraction techniques in California*. Retrieved from <http://repository.usfca.edu/capstone/187>
- Chapman, D. P., Perry, G. S., & Strine, T. W. (2005). The vital link between chronic disease and depressive disorders. *Preventing Chronic Disease*, 2(1), A14.
- Clough, E., & Bell, D. (2016). Just fracking: a distributive environmental justice analysis of unconventional gas development in Pennsylvania, USA. *Environmental Research Letters*, 11(2), 025001.
- Colborn, T., Schultz, K., Herrick, L., & Kwiatkowski, C. (2014). An exploratory study of air quality near natural gas operations. *Human and Ecological Risk Assessment: An International Journal*, 20(1), 86–105.
- Connor, L. R. (2013). *Justified by faith: the upper Susquehanna Lutheran synod and the Pennsylvania natural gas fracking controversy*. Retrieved from http://scholarship.claremont.edu/pomona_theses/83/
- Coram, A., Moss, J., & Blashki, G. (2014). Harms unknown: health uncertainties cast doubt on the role of unconventional gas in Australia's energy future. *The Medical Journal of Australia*, 4, 210–213.
- Crowe, J., Silva, T., Ceresola, R. G., Buday, A., & Leonard, C. (2015). Differences in public perceptions and leaders' perceptions on hydraulic fracturing and shale development. *Sociological Perspectives*, 58(3), 441–463.
- Drummond, V., & Grubert, E. (2017). Fault lines: seismicity and the fracturing of energy narratives in Oklahoma. *Energy Research & Social Science*. doi:10.1016/j.erss.2017.05.039.
- England, J. L., & Albrecht, S. L. (1984). Boomtowns and social disruption. *Rural Sociology*, 49(2), 230–246.
- Evensen, D., & Stedman, R. (2015). Fracking: promoter and destroyer of the good life. *Journal of Rural Studies*. doi:10.1016/j.jrurstud.2017.02.020.
- Ewen, C., Borchardt, D., Richter, S., & Hammerbach, R. (2012). Hydrofracking risk assessment: Study concerning the safety and environmental comparability of hydrofracking for natural gas production from unconventional reservoirs (Executive Summary). Berlin: Exxon Mobil.
- Ferrar, K. J., Kriesky, J., Christen, C. L., Marshall, L. P., Malone, S. L., Sharma, R. K., et al. (2013). Assessment and longitudinal analysis of health impacts and stressors perceived to result from unconventional shale gas development in the Marcellus shale region. *International Journal of Occupational and Environmental Health*, 19(2), 104–112. doi:10.1179/2049396713Y.0000000024.
- Ferrari, K. D. (2013). *Rural communities: how do individuals perceive change when industry enters the area?* Available from graduate theses and dissertations. Retrieved from <http://scholarcommons.usf.edu/etd/4813>
- Filteau, M. R. (2015). Go back to Texas, gas bastards! How a newcomer population of itinerant energy workers manage dirty work stigma in the Marcellus shale region. *Society & Natural Resources*, 28(11), 1153–1167.
- Garvie, K. H., & Shaw, K. (2015). Shale gas development and community response: perspectives from Treaty 8 territory, British Columbia. *Local Environment*, 21(8), 1009–1028. doi:10.1080/13549839.2015.1063043.
- Haggerty, J., & McBride, K. (2016). Does local monitoring empower fracking host communities? A case study from the gas fields of Wyoming. *Journal of Rural Studies*, 43, 235–247.
- Illes, J., Davidson, J., & Matthews, R. (2014). Environmental neuroethics: changing the environment—changing the brain. Recommendations submitted to the Presidential Commission for the Study of Bioethical Issues. *Journal of Law and the Biosciences*, 1(2), 221–223.
- Jacquet, J. B. (2014). Review of risks to communities from shale energy development. *Environmental Science & Technology*, 48(15), 8321–8333.
- Jacquet, J. B., & Kay, D. L. (2014). The unconventional boomtown: updating the impact model to fit new spatial and temporal scales. *Journal of Rural and Community Development*, 9(1), 1–23.
- Jaspal, R., Turner, A., & Nertlich, B. (2014). Fracking on YouTube: exploring risks, benefits and human values. *Environmental Values*, 23(5), 501–527.
- Jemielita, T., Gerton, G. L., Neidell, M., Chillrud, S., Yan, B., Stute, M., et al. (2015). Unconventional gas and oil drilling is associated with increased hospital utilization rates. *PLoS One*, 10(7), e0131093. doi:10.1371/journal.pone.0131093.
- Korfmacher, K. S., Jones, W. A., Malone, S. L., & Vinci, L. F. (2013). Public health and high volume hydraulic fracturing. *New Solutions: A Journal of Environmental and Occupational Health Policy*, 23(1), 13–31.

- Lai, P.-H., Lyons, K. D., Gudergan, S. P., & Grimstad, S. (2017). Understanding the psychological impact of unconventional gas developments in affected communities. *Energy Policy*, *101*, 492–501. doi:10.1016/j.enpol.2016.11.001.
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., et al. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *PLoS Medicine*, *6*(7), e1000100.
- Maguire, K., & Winters, J. V. (2016). *Energy boom and gloom? Local effects of oil and natural gas drilling on subjective well-being (9811)*. Retrieved from: <http://ssrn.com/abstract=2750294>
- Mauro, I., MacGregor, M., & Wheeler, D. (2014). *Discussion paper: the environmental impacts of hydraulic fracturing in Nova Scotia—a public participatory risk assessment*. Retrieved from: <http://nlhfrp.ca/wp-content/uploads/2015/01/Discussion-Paper-Environment-Impacts.pdf>
- McCoy, D., & Saunders, P. (2016). *Health and fracking: the impacts and opportunity costs*. Medact. Retrieved from: http://www.mcdact.org/wp-content/uploads/2015/04/mcdact_fracking-report_WEB4.pdf
- McDermott-Levy, R., & Garcia, V. (2016). Health concerns of northeastern Pennsylvania residents living in an unconventional oil and gas development county. *Public Health Nursing*, *33*(6), 502–510. doi:10.1111/phn.12265.
- McDermott-Levy, R., Kalkins, N., & Sattler, B. (2013). Fracking, the environment, and health. *American Journal of Nursing*, *113*(6), 45–51.
- McKenzie, L. M., Witter, R. Z., Newman, L. S., & Adgate, J. L. (2012). Human health risk assessment of air emissions from development of unconventional natural gas resources. *Science of the Total Environment*, *424*, 79–87.
- Measham, T. G., Fleming, D. A., & Schandl, H. (2016). A conceptual model of the socioeconomic impacts of unconventional fossil fuel extraction. *Global Environmental Change*, *36*, 101–110.
- Minor, J. (2014). Local government fracking regulation: a Colorado case study. *Stanford Environmental Law Journal*, *61*(1), 62.
- Moore, M. (2013). *The independent review of coal seam gas activities in NSW (human health and environment effects)*. Public Health Association of Australia. Downloaded from: <https://www.phaa.net.au/documents/item/400>.
- Morgan, M. L., Hine, D. W., Bhullar, N., Dunstan, D. A., & Bartik, W. (2016). Fracked: coal seam gas extraction and farmers' mental health. *Journal of Environmental Psychology*, *47*, 22–32.
- Morrone, M., Chadwick, A. E., & Kruse, N. (2015). A community divided: hydraulic fracturing in rural Appalachia. *Journal of Appalachian Studies*, *21*(2), 207–228.
- Moss, J., Coram, A., & Blashki, G. (2016). *Is fracking good for your health? An analysis of the impacts of unconventional gas on health and climate* (Technical Report 28). Retrieved from: <http://www.tai.org.au/content/fracking-good-your-health>
- Paylor, A. (2017). The social-economic impact of shale gas extraction: a global perspective. *Third World Quarterly*, *38*(2), 340–355. doi:10.1080/01436597.2016.1153420.
- Perry, S. L. (2012). Development, land use, and collective trauma: the Marcellus shale gas boom in rural Pennsylvania. *Culture, Agriculture, Food and Environment*, *34*(1), 81–92. doi:10.1111/j.2153-9561.2012.01066.x.
- Perry, S. L. (2013). Using ethnography to monitor the community health implications of onshore unconventional oil and gas developments: examples from Pennsylvania's Marcellus shale. *New Solutions: A Journal of Environmental and Occupational Health Policy*, *23*(1), 33–53.
- Powers, M., Saberi, P., Pepino, R., Strupp, E., Bugos, E., & Cannuscio, C. C. (2015). Popular epidemiology and fracking: citizens' concerns regarding the economic, environmental, health and social impacts of unconventional natural gas drilling operations. *Journal of Community Health*, *40*(3), 534–541.
- Redmond, H., & Faulkner, K. (2013). *Submission on the Camden gas project stage 3 northern expansion*. Doctors for the Environment Australia. Downloaded from: https://www.dea.org.au/images/uploads/submissions/Camden_Gas_Project_Stage_3_Submission_01-13.pdf.
- Resick, L. K., Knestruck, J. M., Counts, M. M., & Pizzuto, L. K. (2013). The meaning of health among mid-Appalachian women within the context of the environment. *Journal of Environmental Studies and Sciences*, *3*(3), 290–296. doi:10.1007/s13412-013-0119-y.
- Ruddell, R., Jayasundara, D. S., Mayzer, R., & Heitkamp, T. (2014). Drilling down: an examination of the boom-crime relationship in resource-based boom countries. *Criminology, Crim.Just.L & Soc'y*, *15*, 3.
- Saberi, P. (2013). Navigating medical issues in shale territory. *New Solutions: A Journal of Environmental and Occupational Health Policy*, *23*(1), 209–221.
- Saberi, P., Propert, K. J., Powers, M., Emmett, E., & Green-McKenzie, J. (2014). Field survey of health perception and complaints of Pennsylvania residents in the Marcellus shale region. *International Journal of Environmental Research and Public Health*, *11*(6), 6517–6527.
- Sangaramoorthy, T., Jamison, A. M., Boyle, M. D., Payne-Sturges, D. C., Sapkota, A., Milton, D. K., et al. (2016). Place-based perceptions of the impacts of fracking along the Marcellus shale. *Social Science & Medicine*, *151*, 27–37.

- Short, D., & Szolucha, A. (2017). Fracking Lancashire: the planning process, social harm and collective trauma. *Geoforum*. doi:10.1016/j.geoforum.2017.03.001.
- Steinzor, N., Subra, W., & Sumi, L. (2013). Investigating links between shale gas development and health impacts through a community survey project in Pennsylvania. *New Solutions: A Journal of Environmental and Occupational Health Policy*, 23(1), 55–83.
- Szolucha, A. (2016). *The human dimensions of shale gas development in Lancashire, UK: toward a social impact assessment*. Retrieved from: <http://repowerdemocracy.net/report>
- Tosh, J., & Gislason, M. (2016). Fracking is a feminist issue: an intersectional ecofeminist commentary on natural resource extraction and rape. *Psychology of Women Section Review*, 1–12.
- Tucker, C. (2012). Health concerns of fracking drawing increased attention: EPA conducting studies on health effects. *The Nation's Health*, 42(2), 1–14.
- Vaneckova, P., & Bambrick, H. (2014). *Approaches to baseline studies of human health in relation to industries with potential environmental impact*. Centre for Health Research, University of Western Sydney. Downloaded from: http://www.chiefscientist.nsw.gov.au/_data/assets/pdf_file/0005/56894/140903_Human-CSG_completed_report.pdf.
- Ward, H., Eykelbosh, A., & Nicol, A. M. (2016). Addressing uncertainty in public health risks due to hydraulic fracturing. *Environmental Health Review*, 59(2), 57–61.
- Watterson, A., & Dinan, W. (2015). Health impact assessments, regulation, and the unconventional gas industry in the UK: exploiting resources, ideology, and expertise? *New Solutions: A Journal of Environmental and Occupational Health Policy*, 25(4), 480–512. doi:10.1177/1048291115615074.
- Weber, B. A., Geigle, J., & Barkdull, C. (2014). Rural North Dakota's oil boom and its impact on social services. *Social Work*, 59(1), 62–72.
- Werner, A. K., Vink, S., Wait, K., & Jagals, P. (2015). Environmental health impacts of unconventional natural gas development: a review of the current strength of evidence. *Science of the Total Environment*, 505, 1127–1141.
- Wheeler, D., MacGregor, M., Atherton, F., Christmas, K., Dalton, S., Dusseault, M., et al. (2015). Hydraulic fracturing: integrating public participation with an independent review of the risks and benefits. *Energy Policy*, 85, 299–308.
- Witter, R. Z., Stinson, K., Sackett, H., Putter, S., Kinney, G., Teitelbaum, D. et al. (2008). *Potential exposure-related human health effects of oil and gas development: A white paper*. Colorado School of Public Health. Downloaded from: https://www.nrdc.org/sites/default/files/hea_08091702a.pdf.
- Witter, R. Z., McKenzie, L., Towle, M., Stinson, K., Scott, K., Newman, L. et al. (2010). *Health impact assessment for Battlement Mesa, Garfield County Colorado*. Colorado School of Public Health. Downloaded from: <https://www.garfield-county.com/environmental-health/battlement-mesa-health-impact-assessment-draft2.aspx>.

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Judith Blackburn

SB/HB # and Title: SB 181

PHONE #:

PRIME SPONSORS: Fenberg et al

WRITTEN TESTIMONY:

I want to thank all those Senators who have brought this oil and gas bill this far, I am hopeful that ~~SB~~ SB 181 will not only get out of committee, but go on to be passed in both houses. It is a great first step for the following reasons:

- 1) It changes the COGCC mandate to prioritize health, safety, and environment over development of the industry's profits
- 2) It allows local communities to treat COGCC regulations as a minimum (floor) in that local communities can be more stringent with regulations.
- 3) It increases bonding amounts to cover potential cleanups

The monitoring and implementation of these changes will require ongoing vigilance by ^{the} involved & aware citizens that have gotten us this far.

A big shout out to Mike Foote, Jonathan Singer, and former ~~Rep~~ Senator ~~Matt Jones~~ ^{led} ~~the way~~ ^{the way} ~~this far~~! Colorado can yet be a model of bipartisan cooperation and planetary responsibility in these troubled times.

PRINT NAME: Judith Blackburn

SIGNATURE: Judith Blackburn

WRITTEN TESTIMONY SHEET

DATE: 3/5/2019

Protect Public Welfare

NAME: Jeri Sampson

SB/HB # and Title: SB19-181 Oil & Gas Operations PHONE #:

PRIME SPONSORS: KC Becker & Steve Fenberg

WRITTEN TESTIMONY:

I am a parent and grandparent from Arvada, CO. I am speaking today as a private citizen, not representing any organization. I SUPPORT this bill because I feel strongly that the time has come for all of us to stand up to Big Oil. As residents of CO, the US, and the planet, we need to do whatever we can to fight climate change and other environmental catastrophes. In 1976 when the COGCC was formed, it made sense to "foster" oil & gas development. But now we need to focus on renewable energy and stop our decades-old strategy of uncontrolled drilling.

In the future, we must prioritize health, safety, and the environment above industry profits. And we need to empower local governments to have a stronger say on permitting what oil & gas companies can do in their ~~to~~ communities. We also need to protect property owners from forced pooling, and combat the growing problem of orphaned wells by holding the industry responsible.

PLEASE vote to support SB-181, for all of us,

PRINT NAME: Jeri Sampson

SIGNATURE: Jeri Sampson

WRITTEN TESTIMONY SHEET

DATE: _____

NAME: Nick Venner

SB/HB # and Title: SB 181

PHONE _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

Bear Creek High School
Students say protect our
future!

This is the reason
protecting health & safety
for government to exist!

PRINT NAME: _____

SIGNATURE: _____

WRITTEN TESTIMONY SHEET

DATE: 5/3/18

NAME: Marie Verner

SB/HB # and Title:

PHONE #:

PRIME SPONSORS:

WRITTEN TESTIMONY:

President Verner Consulting
Boyd, Char
CO. Interfaith Power, Light

I am a lifelong Coloradan and 22 year business owner from an old family on one side who is bringing input from Colorado Faith Communities to protect life, health and safety - people over profit for the few - a plea to pass trust.

Front Range residents incl. multiple family members and communities are suffering today from the air quality and health impacts of this industry, children with asthma, parents on oxygen, 55% of volatile organic compounds are from fracking oil & gas wells on the front range. The applications before the COGCC now take equal to Denver's water use in one year and permanently spoil much of that.

Health and Safety is the primary responsibility of government

PRINT NAME:

Marie Verner

SIGNATURE:

M. Verner

WRITTEN TESTIMONY SHEET

DATE: March 5th, 2019

NAME: Cindy Sandhu

SB/HB # and Title: SB 181

PHONE #: _____

PRIME SPONSORS: Faith Winters

WRITTEN TESTIMONY:

I am here today for the future. I have 3 young children here with me, 5, 3 and 1 years old. Their future and the future for all is at hand. Climate change is real and without significant change, they won't have the same future that I would hope for them.

Allowing for the changes this bill would make, would allow for more local control and the consideration of public health and safety.

I think of my own neighborhood, would I want a new drill site next to my home or my kids school? Would I want to be force ~~forced~~ pooled into selling my mineral rights with only the approval of a few? No, I would not. I want to be able to have a say in the health and safety. I want government to have a say in health and safety.

Please vote yes on SB191. Vote for public health and safety. Please vote yes for my children, their future and the future of all.

PRINT NAME: Cindy Sandhu

SIGNATURE: Cindy Sandhu

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Tim Gosar

SB/HB # and Title: SB 19-181

PHONE

PRIME SPONSORS:

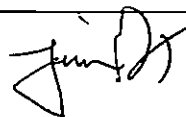
WRITTEN TESTIMONY:

Thank you for considering my statement. One of the main jobs of an elected official is to consider, support and promote the health and safety of its citizens! Additionally a main and important aspect of government is to focus on making peoples lives better. Its way past time we transition and invest in clean, renewable, sustainable energy and transportation. Fracking and the Oil and Gas (O:G) business threaten the health, safety and environment yet only makes up less than 1% of Colorado (Co) jobs. I live in Ft. Collins and our air quality is very poor and constantly fails acceptable standards in large part because of the O:G development including fracking being done in Weld County. Please stop considering their (O:G) interests over the health and safety of all Coloradans because they give more to politicians and political campaigns! Colorado's economy will expand and grow if we transition now to clean, renewable energy! My dad was an oil field geologist for over (30) years so I understand their paid lobbyists and workers advocating for their business but they're doing it ^{at} the expense and the health and safety of all Coloradans! Please support and pass SB 19-181 without the loopholes and ~~amendments~~ amendments the O:G business will surely ask you to do. Focus on all Coloradans: their health, safety and future! Thank you

PRINT NAME:

Tim Gosar

SIGNATURE:



WRITTEN TESTIMONY SHEET

DATE: March 5th 2019

NAME: Daniel Grosso

SB/HB # and Title: SB19-181

PHONE _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

Hello Senators,

Last summer I camped in the mountains 2 hours outside Colorado. As I was driving back East on I-70, coming over that final hill crest, Denver, my home, came back into view... sort of!

There was a haze, a red pall, over the skyline and in between the buildings. For a minute I couldn't figure out what it was. Then I realized it was smoke, ash, and dirty air from the wildfires in Colorado.

Please, support SB19-181 and ~~don't~~ water it down. We need the COGCC to put health and human safety first. They cannot continue to put pollution & profit over people. The IPCC (International Panel on Climate Change) says we have 12 years to rein in greenhouse gas emissions. Act now to save lives.

Also, many fear this will kill jobs. But increased freedom for local communities will require more people working in oil & gas to ensure safety. Also the outdoor industry employs **FOUR TIMES** the number of people the Oil & Gas industry does in CO. ~~The~~ Climate Inaction threatens their jobs.

PRINT NAME: 3-5-19

SIGNATURE: Daniel A. Grosso

WRITTEN TESTIMONY SHEET

DATE: 03-05-19

NAME: Jessica Troy

SB/HB # and Title: SB19-181

PHONE _____

PRIME SPONSORS: _____

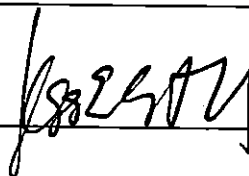
WRITTEN TESTIMONY:

I'll make this brief. As a business owner, I am of the opinion that anyone who can't figure out how to make a profit while simultaneously putting the health and safety of Coloradans first probably isn't cut out to be in business, or any innovative career field for that matter. ~~Anyone who is opposed to this is either~~ Please vote yes on 181, responsible, competent business owners can figure out how to run their businesses safely.

PRINT NAME:

Jessica Troy

SIGNATURE:



WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: MICHAEL FULTON

SB/HB # and Title: SB 19-181

PHONE

PRIME SPONSORS: BELKER & FENBURG

WRITTEN TESTIMONY:

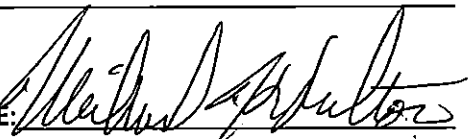
WE HAVE 12 YEARS TO DRASTICALLY REDUCE EMISSIONS, WE CAN DO THIS. WE FIXED THE OZONE HOLE, WE CAN TRANSITION OUR ECONOMY TO CLEAN ENERGY AND CREATE MORE GOOD PAYING JOBS AS WE DO. 12 YEARS OR OUR PLANET IS DRASTICALLY CHANGED FOREVER.

I SEE A LOT OF CONCERNED "I AM OIL & GAS" STICKERS TODAY. IF ONLY THEY UNDERSTOOD RENEWABLES CREATES MORE JOBS PER UNIT OF ENERGY THAN OIL & GAS.

WE NEED TO PROTECT OUR STATE, THE HOME RULE PROVISION DOES THAT!! HAVING OIL & GAS PAY THE TRUE COST OF PERMITTING IS ONLY RIGHT, WE SHOULDN'T SUBSIDIZE CORPORATIONS

PRINT NAME: MICHAEL FULTON

SIGNATURE:



WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Janet Baltz RN, MSN

SB/HB # and Title: SB19-181 Protect Public Welfare

PRIME SPONSORS: Oil and Gas Operations

WRITTEN TESTIMONY:

I am a resident of the Lakewood/Golden area and here to support SB19-181. All of my relatives are living along the western metro towns and suburbs with drilling nearby or threatened. I am in disbelief that we have allowed the frenzy of fracking so close to residential areas and schools. I attend the Oil and Gas Commission hearing held over a year ago and heard the people most impacted talk about banging all night, development of asthma and other illnesses once drilling began, playgrounds covered in orange substances no one can explain such that children no longer play there, and being trapped where they are because property is now worthless. In part, I blame real estate developers who misled them but there are many stories of high pressure by oil and gas officials to sell mineral rights. This is TOTALLY INAPPROPRIATE for suburban neighborhoods. Further the State of Colorado is culpable as a significant percentage of its revenue still comes from these oil and gas companies. The Commission has been a virtual rubber stamp for all comers who want leases. It reached absurdity when they wanted to drill under ~~let~~ reservoirs in Arvada and are drilling under the city of Broomfield. This bill will give local governments back control and local citizens a chance to breathe. Further we need more environmental input and consideration particularly with impact on our precious ground water!

PRINT NAME: Janet Baltz

SIGNATURE: Janet Baltz

WRITTEN TESTIMONY SHEET

DATE: 3/5/2019

NAME: Judy Danielson

SB/HB # and Title: SB 181

PHONE

PRIME SPONSORS: Sen Forberg

WRITTEN TESTIMONY:

Attached

PRINT NAME: Judy Danielson

SIGNATURE: Judy Danielson

SB 181 Protect Public Welfare

Thank you, Committee Chair and committee members for this opportunity.

My name is Judy Danielson and I live in Denver.

I am a retired health care worker, a mother, a grandmother of 2 boys, 7 and 9 years old, and am expecting another grandson to be born this May. I am 75 years old and have been blessed to have been born when the air and water were clean. My grandsons will not have that luxury, given that UN and US government climate assessments report that we must end our use of fossil fuels in the next 11 years, to prevent global temperature rise above 1.5 deg. Celcius or the rise will continue to escalate and the effects will be irreversible. My pregnant daughter hasn't had to worry about the Zika virus here, but insect diseases are spreading with global warming. No one is or will be untouched, no matter where we live.

As I look at my precious grandsons, I ask myself, what can I do to work for an earth restored? We have solar electric panels, can try to transition off our gas furnace, drive our hybrid car and walk and bike or bus often. But that is not enough. ~~Huge policy changes must be made now by all levels of government.~~

I am a member of the Citizens Climate Lobby have been concerned about global warming for 50 years. President Carter knew we were in danger and placed solar panels on the White House roof. There was a united consensus in the US at that time that we needed to do something. I dedicated myself to recycling at home and for my church, to conserving water and composting. But when President Reagan took office, oil and gas interests started a campaign to question the science to promote their industry, and the solar panels came off the White House roof. Huge subsidies have favored oil and gas all these years, even though there are more jobs in renewable energy and conservation.

This committee has the solemn responsibility now to protect our biosphere, that is, all living things. **We** are part of that life, but so are all the plants and animals that sustain us. Extinction is happening all around us. You only need to visit the zoo and see the tally increase every second. It needs to stop. Humans are creative and, with support instead of pushback, can find ways to save us and our children. Please support and pass this bill out of committee. The coming generations depend on it and on you.

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Judy Denberg

SB/HB # and Title: 181

PHONE:

PRIME SPONSORS: ~~Self~~ Fenberg & Becker

WRITTEN TESTIMONY:

I think that it is important to take the health and safety issue more seriously than allowing the oil & gas industry to destroy our ecosystem & the safety of the constituents of Colorado more seriously than the immediate profit of the Oil & Gas Industry. Poisoning our environment & people for profit should not be allowed. We are in a crisis situation. The lives of our children & grandchildren are at stake. This bill is a step in the right direction, however the support of fossil fuels is not a win for society. The oceans are warming at a rate previously never encountered before. All life depends on a living ocean. Coral reefs are dying & with them the ability to sustain life on our planet. This bill does not support the transition to clean energy. If profit is your motive, get into the business of "quickly" transitioning to alternatives such as wind, solar & geothermal.

It is the time to protect rather than profit from the burning of oil & profiting from poisoning the people & the planet. Setbacks & peeling reefs won't solve the problem. There is MORE MONEY to be made by supporting solar & wind than in a dying industry. People are diverting from this harmful industry. Get in on the ground floor of alternative energy. Thanks. Judy

PRINT NAME: JUDY DENBERG

SIGNATURE: Judy Denberg

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Greg Varhola

SB/HB # and Title: SB-181

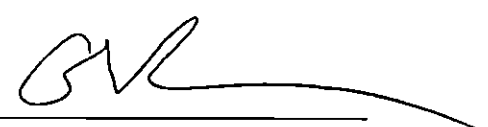
PHONE

PRIME SPONSORS: Ferrelberg + Becker

WRITTEN TESTIMONY:

I support the Bill, as Colorado needs to start restricting the oil and gas industry. This is a small first step.

PRINT NAME: Greg Varhola

SIGNATURE: 

WRITTEN TESTIMONY SHEET

DATE: 3/5/18

NAME: Shawn Rodda

SB/HB # and Title: 181

PHONE

PRIME SPONSORS: Fenberg / Becker

WRITTEN TESTIMONY:

Thank you for presenting this important legislation. I fully believe that communities should be able to decide for themselves if they want these dangerous activities. I also think the commission should put health, welfare & environment over profit. We need to prevent more tragedies like what happened to the Martinez family. Please vote to keep my family safe.

PRINT NAME: Shawn Rodda

SIGNATURE: Shawn Rodda

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Jennifer Lorber

SB/HB # and Title: SB-19-181

PHONE

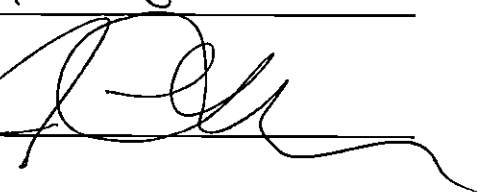
PRIME SPONSORS:

WRITTEN TESTIMONY:

As a resident of Colorado I am deeply concerned about the state of our air quality, water quality and the overall health of our natural environment. While oil & gas have played an important role in our economic past, we are in a new era and new economies should be built around cleaner energy and newer technology. It is our responsibility as human beings to take care of the planet and while oil & gas were our only options in the past, we have other options now and thus an obligation to pursue those options. For these reasons it is imperative that we give greater autonomy to cities & counties over the laws surrounding oil & gas in their jurisdiction. It is the communities that will have to deal with any repercussions of the decisions made therefore the decisions should be left to the communities themselves & their constituents.

PRINT NAME: Jenny Lorber

SIGNATURE:



WRITTEN TESTIMONY SHEET

DATE: 3-5-19

NAME: KATE MERLIN
STEPHANIE NILSEN
JANIS BUTTERFIELD

SB/HB # and Title: SB 19181

PHONE _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

ATTACHED

PRINT NAME: _____

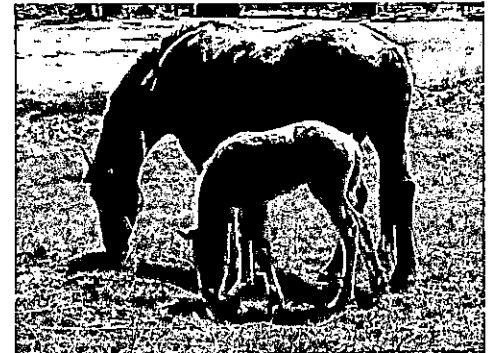
SIGNATURE: _____

BILL 19181
VOTE for Oil & Gas REFORM
HEALTH, SAFETY & ENVIROMENTAL LIVES MATTER

Extraction Oil & Gas impacted our lives – No Safety, Health or Land/Homeowner Concerns
ESPECIALLY OUR HORSES – BELGIAN DRAFT HORSE BREEDERS



Verses



HH Ranch/Nilsen/Butterfield
Berthoud, CO 80513



Key complaints

- Extraction oil and gas is responsible for the following issues and concerns below.
 - Home – Loss of value, damage to concrete foundation, separation from slab, cracks running through driveway, patio, bathroom, interior walls
 - HH Belgian Draft Horse Breeding Ranch impacted, breeding season disruption and health concerns Personal Health Concerns – new nosebleeds, headaches, difficulty breathing
 - Work from home disruptions – stress, noise, vibrations, foundation damage
- Possible violations pertaining to construction of pipelines and other infrastructure next to homes
 - Pipeline installed less than 30ft from our home’s bedroom windows. Impacted foundation.
 - No advance notification the pipeline was being installed. Work from home (IBM Support) loss of work days
 - No consideration for homeowner impacts – Drill pad construction efforts, traffic and dust at all hours
- Possible violations pertaining to noise, lights, vibrations, time and scope of operations
 - What rights did we have to the Kennedy/Trott pads and the damages, health concerns and animal stress the pad development has caused to our home and ranch.
 - Who is compensating us for having to live next to danger, toxic smells and ongoing processing, cancerous, possible explosion?
- Who is compensating for loss and damages, who cared?
 - Home loss -damages – value – retirement – mountain range view
 - Health concerns with the homeowners including multiple hospital visits for home and horse stress, nausea, nose bleeds, headaches, depression

No response or communications received from Extraction Oil & Gas



2017 Timeline – Kennedy Pad

Jun 21, 2017 at 10:35 AM (Start)

- Sent email to Extraction Oil & Gas. Please be advised to the vibrations being experienced at my home. These vibration have been occurring for the last 4 days being experienced around every 5 - 10mins. Is there drilling going on that my be causing these problems.
- Complained MULTIPLE times about the dust/dirt that is more than our normal traffic that has taken out my home and my horses. I am in the middle of breeding season and this extra traffic is causing respiratory issues with the horses on my property.

No response or communications received from Extraction Oil & Gas



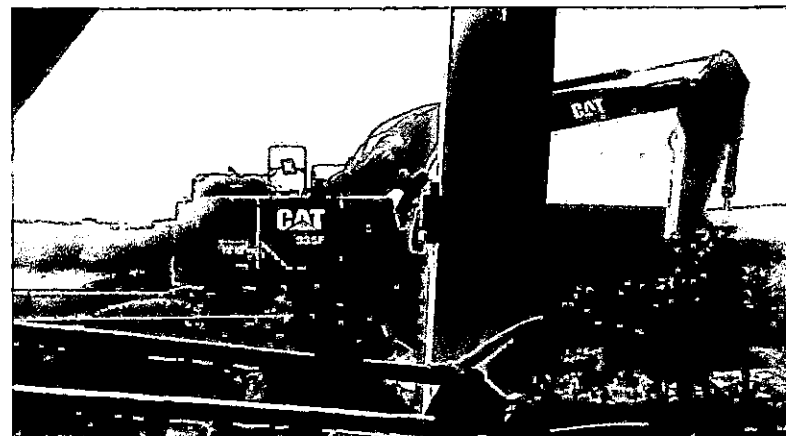
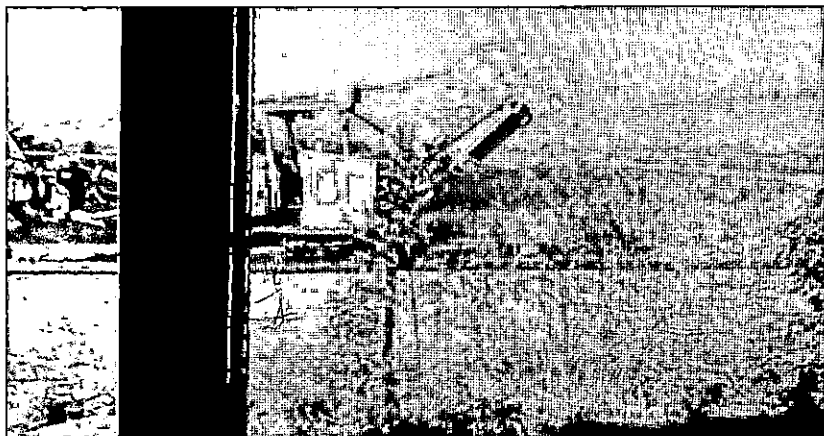
2018 Timeline – Trott Pad

- Called extraction and complained MULTIPLE times about the dust/dirt that has truck after truck after truck, full of dirt weighing tons of pounds either idling in front of our home, pouring diesel fuel fumes and noise right into our front door. Shaking our whole house making it unbearable to sit in the living room.
- Lost all privacy throughout the day and night with truck drivers continuously watching our every move and schedules during the day. This also caused concerns with having our children outside as some workers stood and watched for long periods of time causing concerns. Unable to do live breeding of our Belgian draft horses.
- This activity was so close to the house, that the home vibrated and shook, affecting us and the horses. The noise was so loud, we were unable to work from home (work involves voice communications). Loss of a days pay.

No response or communications received from Extraction Oil & Gas

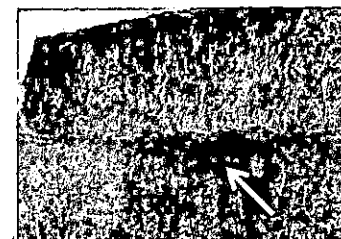
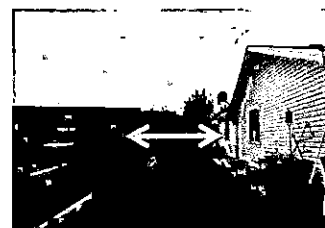
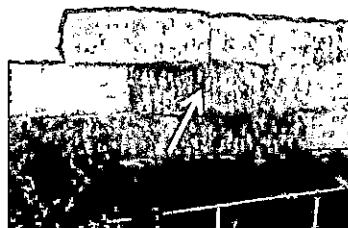
+ SAFETY - HEALTH CONCERNS

Reported in writing again, that our home was vibrating worse yet. OUR WHOLE HOUSE in every room was vibrating from the trench digger extraction used to put the electrical line in, which took another tractor to pull it (have video). This was just crazy. Inexcusable actions to my home and Belgians. No work today for me again. I had to watch over the horses while all the earth vibrated below them . Especially our stallion who we cannot let out with our mares. Maybe 10ft away from him. Our steel stall has actually been weakened by him charging it and wanting out and away. Extraction again gave no thought to the horses well being or to even asked if I could relocate them until their job had been completed.



Sept 16th 2018

Additional HEALTH CONCERN: Farmer's Lung is an allergy related disease usually caused by breathing in the dust from moldy hay. With the health concerns documented and all needed parties aware, The smell of the MOLD was so overwhelming all windows to our home had to be closed and shades drawn.



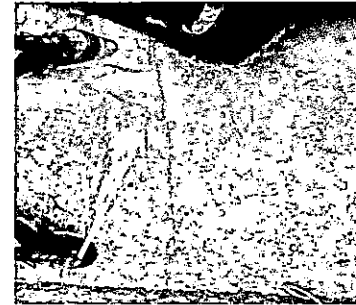
+ Visual Sources of damages done –

We are less than 50ft from from all truck and semi load activity.

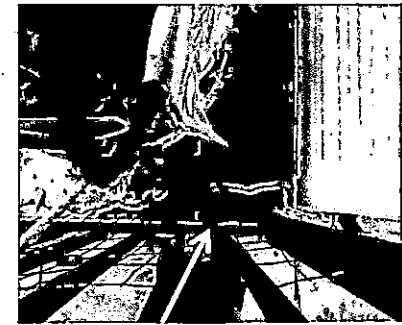
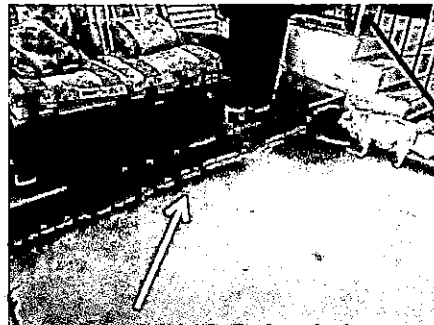
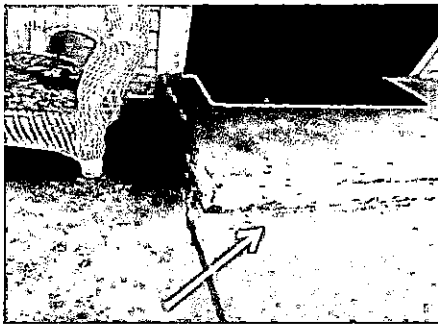
- We own a 100+ yr old home. This home has been solid for 100 years, but within months of oil and gas development we now have dozens of cracks in our foundation in 1 1/2yrs. Has even impacted new foundation from a fairly new remodel.



Main road used
50FT to the front door



Caused by truck weight and foundation movement. Vibrations from the Extraction Oil & Gas Kennedy/Trott pad resurrections.





Current Status – No agreement, No Accountability, No Progress, No Help!
Extraction Oil & Gas have been horrible and DO NOT CARE about the health, safety and impacts to humanity and livestock ranches.



EMAIL REPLY FROM EXTRACTION –Extraction has reviewed your request for Extraction to reimburse you for costs associated with concrete repair. Extraction does not believe that any of the damages were caused by Extraction's operations. Based on studies, vibration levels for operations such as those that occurred near your property are quite minimal and would need to be approximately 10 times greater than what they actually are to have an impact on nearby foundations/structures. Unfortunately, Extraction will not be agreeing to any reimbursement for costs associated with the concrete repair that you are seeking.

Regards,

Eric J. Christ

We are talking about what it took to build the pad(s), not after the pad was built and turned on, Of course there is no further activity to justify our complaint. That is wrong and not fair,

Ms. Nilsen,

TO COGCC – we have tried everything we can think of to work this out with Extraction. We believe they may be in violation of numerous Rules including but not limited to Rule 604 (and subsections, especially 604.c(2)(A) and (C)), 605, 606A and 606B, 607, 703 (for the loss of our livestock), the entire 800-series, and 912. Please investigate Extraction for these violations and make them compensate us for the damage to our property and the suffering they have put us through.

PROTECT YOURSELVES WITH PROOF IN PICTURES AND VIDEOS

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Maggie Bryniarski

SB/HB # and Title: SB 19-181

PHONE

PRIME SPONSORS: KC Becker & Steve Fenberg

WRITTEN TESTIMONY:

My name is Maggie Bryniarski and I am from Gunnison, Colorado but currently live in Boulder, Colorado. I am here today, representing myself, to urge you to support senate bill 181, "regarding ~~the conduct~~ additional public welfare protections regarding the conduct of oil and gas operations.

As a recent graduate from the University of Colorado in Boulder where I acquired a degree in Sociology, I can say, with confidence, that the health and safety of our environment is one of the most prevalent issues for the members of my generation. During my time as a student, I was lucky enough to speak with many of my peers about what our passions and concerns are. Time and time again, these conversations focused on the environment and what we can do to ensure a healthy future. It is apparent that the oil and gas industry has some of the most sinister effects when it comes to my and my peers concerns.

One solution that my generation has begun

PRINT NAME: Maggie Bryniarski

SIGNATURE: Mypri Kyji

WRITTEN TESTIMONY SHEET

DATE: _____

NAME: _____

SB/HB # and Title: _____

PHONE #: _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

to employ is taking advantage of our democracy. Youth voter turnout in Colorado was the second highest in the nation in 2018. This was no mistake. We have taken matters into our hands, even during a midterm election, and fully intend to continue to have our concerns heard and taken seriously. For this reason, it is in your interests, as our legislators, to be mindful of our concerns and take action accordingly. Supporting senate bill 181 is a great way to start.

Senate bill 181 has the potential to make some of the most significant changes to oil and gas regulations that this state has yet to see by better balancing the needs of the industry with our health and safety. With the enactment of this bill, Colorado could become a leader on one of the most pressing issues facing our society: the health and safety of our environment and of our communities.

The effects of an under-regulated oil and gas industry have been devastating, and they are irreversible. We have a responsibility to ourselves, our environment,

PRINT NAME: Maggie Bryniarski

SIGNATURE: 

WRITTEN TESTIMONY SHEET

DATE: _____

NAME: _____

SB/HB # and Title: _____

PHONE #: _____

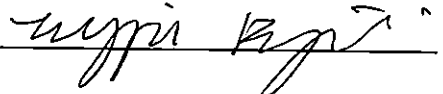
PRIME SPONSORS: _____

WRITTEN TESTIMONY:

and our future generations to take serious, bold action against this crisis and do all that we can to protect our communities from the effects of oil and gas moving forward. As young people, my generation took our responsibility seriously by voting for leaders who made it clear they will also take their responsibility by creating and passing this kind of common sense legislation. By passing this bill and becoming a pioneer on the issue, Colorado will set standards for the rest of the nation to aspire to. To make any meaningful, positive impacts on the health of our environment, we must act quickly as a nation, which means that we must act quickly as a state.

Please vote yes on senate bill 181. Thank you for your time.

PRINT NAME: Maggie Bryniarski

SIGNATURE: 

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Suzanne Spiegel

SB/HB # and Title: SB 19-181

PHONE:


PRIME SPONSORS: Fehrborg & Becker

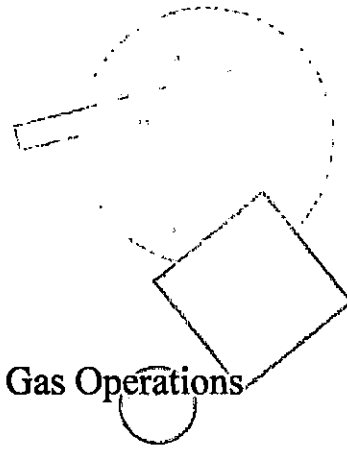
WRITTEN TESTIMONY:

As an organizer with Colorado Rising & previously Frack Free Colorado, I've been in many communities that have been threatened & impacted by drilling. Families in ~~that~~ these communities have worked tirelessly to try to protect themselves. However, until now, they have had no pathway to do so. Instead, these community members have had to live in what becomes highly industrial, toxic areas. In many cases, they suffer stress from the noxious fumes, constant sound & light. Often, they experience nose bleeds, nausea, neurological disorders & other serious illness. It is imperative that we pass this bill so that health & safety ~~become~~ ^{are treated as a} priority & so that communities have a say in something that directly impacts their future, health & safety. Please, for our health, safety & the future of our planet - pass this bill! We are on the brink of climate crisis & we need this.

PRINT NAME: Suzanne Spiegel

SIGNATURE:





March 5, 2019

RE: SB19-181: Protect Public Welfare Oil and Gas Operations

Dear members of the Colorado Senate Transportation & Energy Committee:

We appreciate the opportunity to say a few words regarding our strong relations with Colorado's oil and gas industry, who have and continue to support children and families throughout the state in ways that we hope are considered as you move forward.

The Tennyson Center for Children was founded in Loveland Colorado in 1904 and continues, as we did way back in 1904, to support children and families whose experiences with trauma from abuse, neglect and mental health challenges have undermined their abilities to thrive. We are proud of our track record and program, and work with some of the hardest trauma cases in the child welfare and mental health sectors.

To succeed, Tennyson relies on a wide community of supporters who are willing to support the children and families whose experiences with trauma isolate them (many lose their jobs, many are kicked out of school, many families feel deep social isolation, among other impacts that hurt families). Tennyson applauds and appreciates the way that the oil and gas community – its staff, its leaders and their companies – works to help these families heal and thrive.

Specifically, Tennyson appreciates:

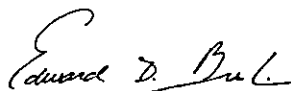
1. The vast majority of adults who come to Tennyson and tell of their days as children at Tennyson actually work for the oil and gas industry. We believe that the oil and gas industry is a significant employer of the children who have journeyed through child welfare and believe that their having a job is essential for their continued healing and thriving as adults

2. The oil and gas industry is the largest investor in Tennyson among corporate donors (as a group). They have invested in our most innovative work in parts of the state where funding and services are sparse, and allowed us to help children and families heal together rather than be removed from their homes and sent to Denver for residential treatment. This support saves lives, helps children heal locally and frankly saves Colorado money

3. Oil and gas staff are by far the biggest volunteers who spend time with children and families healing from trauma at Tennyson. They are remarkable volunteers who bring light to a community of Coloradans who need more light.

We wanted to share these insights in an effort to explain how deeply we at Tennyson value the contribution of this community to Colorado's wellbeing, and appreciate you taking this into consideration as you discuss ways in which to help all Coloradans thrive.

Sincerely,



Edward D Breslin
President and CEO



March 5, 2019

RE: SB19-181: Protect Public Welfare Oil and Gas Operations

Dear members of the Colorado Senate Transportation & Energy Committee:

We appreciate the opportunity to say a few words regarding our strong relations with Colorado's oil and gas industry, who have and continue to support children and families throughout the state in ways that we hope are considered as you move forward.

The Tennison Center for Children was founded in Loveland Colorado in 1904 and continues, as we did way back in 1904, to support children and families whose experiences with trauma from abuse, neglect and mental health challenges have undermined their abilities to thrive. We are proud of our track record and program, and work with some of the hardest trauma cases in the child welfare and mental health sectors.

To succeed, Tennison relies on a wide community of supporters who are willing to support the children and families whose experiences with trauma isolate them (many lose their jobs, many are kicked out of school, many families feel deep social isolation, among other impacts that hurt families). Tennison applauds and appreciates the way that the oil and gas community – its staff, its leaders and their companies – works to help these families heal and thrive.

Specifically, Tennison appreciates:

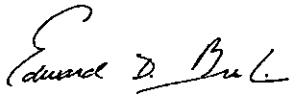
1. The vast majority of adults who come to Tennison and tell of their days as children at Tennison actually work for the oil and gas industry. We believe that the oil and gas industry is a significant employer of the children who have journeyed through child welfare and believe that their having a job is essential for their continued healing and thriving as adults

2. The oil and gas industry is the largest investor in Tennison among corporate donors (as a group). They have invested in our most innovative work in parts of the state where funding and services are sparse, and allowed us to help children and families heal together rather than be removed from their homes and sent to Denver for residential treatment. This support saves lives, helps children heal locally and frankly saves Colorado money

3. Oil and gas staff are by far the biggest volunteers who spend time with children and families healing from trauma at Tennyson. They are remarkable volunteers who bring light to a community of Coloradans who need more light.

We wanted to share these insights in an effort to explain how deeply we at Tennyson value the contribution of this community to Colorado's wellbeing, and appreciate you taking this into consideration as you discuss ways in which to help all Coloradans thrive.

Sincerely,



Edward D Breslin
President and CEO



March 5, 2019

RE: SB19-181: Protect Public Welfare Oil and Gas Operations

Dear members of the Colorado Senate Transportation & Energy Committee:

We appreciate the opportunity to say a few words regarding our strong relations with Colorado's oil and gas industry, who have and continue to support children and families throughout the state in ways that we hope are considered as you move forward.

The Tennyson Center for Children was founded in Loveland Colorado in 1904 and continues, as we did way back in 1904, to support children and families whose experiences with trauma from abuse, neglect and mental health challenges have undermined their abilities to thrive. We are proud of our track record and program, and work with some of the hardest trauma cases in the child welfare and mental health sectors.

To succeed, Tennyson relies on a wide community of supporters who are willing to support the children and families whose experiences with trauma isolate them (many lose their jobs, many are kicked out of school, many families feel deep social isolation, among other impacts that hurt families). Tennyson applauds and appreciates the way that the oil and gas community – its staff, its leaders and their companies – works to help these families heal and thrive.

Specifically, Tennyson appreciates:

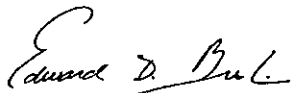
1. The vast majority of adults who come to Tennyson and tell of their days as children at Tennyson actually work for the oil and gas industry. We believe that the oil and gas industry is a significant employer of the children who have journeyed through child welfare and believe that their having a job is essential for their continued healing and thriving as adults

2. The oil and gas industry is the largest investor in Tennyson among corporate donors (as a group). They have invested in our most innovative work in parts of the state where funding and services are sparse, and allowed us to help children and families heal together rather than be removed from their homes and sent to Denver for residential treatment. This support saves lives, helps children heal locally and frankly saves Colorado money

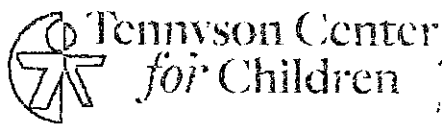
3. Oil and gas staff are by far the biggest volunteers who spend time with children and families healing from trauma at Tennyson. They are remarkable volunteers who bring light to a community of Coloradans who need more light.

We wanted to share these insights in an effort to explain how deeply we at Tennyson value the contribution of this community to Colorado's wellbeing, and appreciate you taking this into consideration as you discuss ways in which to help all Coloradans thrive.

Sincerely,

A handwritten signature in cursive script that reads "Edward D. Breslin".

Edward D Breslin
President and CEO



2950 Tennyson St.
Denver, CO 80212
Main: 303.433.2521
Fax: 303.433.9701

March 5, 2019

RE: SB19-181: Protect Public Welfare Oil and Gas Operations

Dear members of the Colorado Senate Transportation & Energy Committee:

We appreciate the opportunity to say a few words regarding our strong relations with Colorado's oil and gas industry, who have and continue to support children and families throughout the state in ways that we hope are considered as you move forward.

The Tennyson Center for Children was founded in Loveland Colorado in 1904 and continues, as we did way back in 1904, to support children and families whose experiences with trauma from abuse, neglect and mental health challenges have undermined their abilities to thrive. We are proud of our track record and program, and work with some of the hardest trauma cases in the child welfare and mental health sectors.

To succeed, Tennyson relies on a wide community of supporters who are willing to support the children and families whose experiences with trauma isolate them (many lose their jobs, many are kicked out of school, many families feel deep social isolation, among other impacts that hurt families). Tennyson applauds and appreciates the way that the oil and gas community – its staff, its leaders and their companies – works to help these families heal and thrive.

Specifically, Tennyson appreciates:

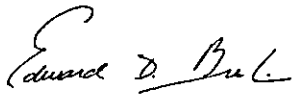
1. The vast majority of adults who come to Tennyson and tell of their days as children at Tennyson actually work for the oil and gas industry. We believe that the oil and gas industry is a significant employer of the children who have journeyed through child welfare and believe that their having a job is essential for their continued healing and thriving as adults

2. The oil and gas industry is the largest investor in Tennyson among corporate donors (as a group). They have invested in our most innovative work in parts of the state where funding and services are sparse, and allowed us to help children and families heal together rather than be removed from their homes and sent to Denver for residential treatment. This support saves lives, helps children heal locally and frankly saves Colorado money

3. Oil and gas staff are by far the biggest volunteers who spend time with children and families healing from trauma at Tennyson. They are remarkable volunteers who bring light to a community of Coloradans who need more light.

We wanted to share these insights in an effort to explain how deeply we at Tennyson value the contribution of this community to Colorado's wellbeing, and appreciate you taking this into consideration as you discuss ways in which to help all Coloradans thrive.

Sincerely,



Edward D Breslin
President and CEO



March 5, 2019

RE: SB19-181: Protect Public Welfare Oil and Gas Operations

Dear members of the Colorado Senate Transportation & Energy Committee:

We appreciate the opportunity to say a few words regarding our strong relations with Colorado's oil and gas industry, who have and continue to support children and families throughout the state in ways that we hope are considered as you move forward.

The Tennyson Center for Children was founded in Loveland Colorado in 1904 and continues, as we did way back in 1904, to support children and families whose experiences with trauma from abuse, neglect and mental health challenges have undermined their abilities to thrive. We are proud of our track record and program, and work with some of the hardest trauma cases in the child welfare and mental health sectors.

To succeed, Tennyson relies on a wide community of supporters who are willing to support the children and families whose experiences with trauma isolate them (many lose their jobs, many are kicked out of school, many families feel deep social isolation, among other impacts that hurt families). Tennyson applauds and appreciates the way that the oil and gas community – its staff, its leaders and their companies – works to help these families heal and thrive.

Specifically, Tennyson appreciates:

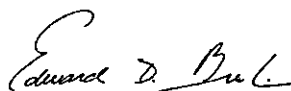
1. The vast majority of adults who come to Tennyson and tell of their days as children at Tennyson actually work for the oil and gas industry. We believe that the oil and gas industry is a significant employer of the children who have journeyed through child welfare and believe that their having a job is essential for their continued healing and thriving as adults

2. The oil and gas industry is the largest investor in Tennyson among corporate donors (as a group). They have invested in our most innovative work in parts of the state where funding and services are sparse, and allowed us to help children and families heal together rather than be removed from their homes and sent to Denver for residential treatment. This support saves lives, helps children heal locally and frankly saves Colorado money

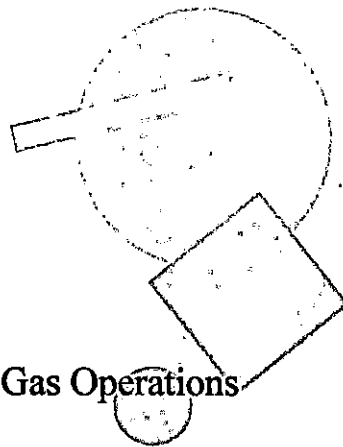
3. Oil and gas staff are by far the biggest volunteers who spend time with children and families healing from trauma at Tennyson. They are remarkable volunteers who bring light to a community of Coloradans who need more light.

We wanted to share these insights in an effort to explain how deeply we at Tennyson value the contribution of this community to Colorado's wellbeing, and appreciate you taking this into consideration as you discuss ways in which to help all Coloradans thrive.

Sincerely,



Edward D Breslin
President and CEO



March 5, 2019

RE: SB19-181: Protect Public Welfare Oil and Gas Operations

Dear members of the Colorado Senate Transportation & Energy Committee:

We appreciate the opportunity to say a few words regarding our strong relations with Colorado's oil and gas industry, who have and continue to support children and families throughout the state in ways that we hope are considered as you move forward.

The Tennyson Center for Children was founded in Loveland Colorado in 1904 and continues, as we did way back in 1904, to support children and families whose experiences with trauma from abuse, neglect and mental health challenges have undermined their abilities to thrive. We are proud of our track record and program, and work with some of the hardest trauma cases in the child welfare and mental health sectors.

To succeed, Tennyson relies on a wide community of supporters who are willing to support the children and families whose experiences with trauma isolate them (many lose their jobs, many are kicked out of school, many families feel deep social isolation, among other impacts that hurt families). Tennyson applauds and appreciates the way that the oil and gas community – its staff, its leaders and their companies – works to help these families heal and thrive.

Specifically, Tennyson appreciates:

1. The vast majority of adults who come to Tennyson and tell of their days as children at Tennyson actually work for the oil and gas industry. We believe that the oil and gas industry is a significant employer of the children who have journeyed through child welfare and believe that their having a job is essential for their continued healing and thriving as adults

2. The oil and gas industry is the largest investor in Tennyson among corporate donors (as a group). They have invested in our most innovative work in parts of the state where funding and services are sparse, and allowed us to help children and families heal together rather than be removed from their homes and sent to Denver for residential treatment. This support saves lives, helps children heal locally and frankly saves Colorado money

1. The first part of the document discusses the importance of maintaining accurate records.

2. It then goes on to describe the various methods used to collect and analyze data.

3. The next section details the results of the study, showing a clear trend in the data.

4. This is followed by a discussion of the implications of these findings for future research.

5. The final part of the document concludes with a summary of the key points and a call to action.

6. In addition, the document includes several appendices that provide further details on the methodology.

7. These appendices are essential for understanding the full scope of the research and its findings.

8. The document is well-organized and easy to read, making it a valuable resource for anyone interested in the field.

9. Overall, the document provides a comprehensive overview of the study and its contributions to the field.

10. The authors have done an excellent job of presenting their findings in a clear and concise manner.

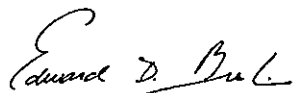
11. This document is a must-read for anyone looking to stay up-to-date on the latest research in this area.

12. Thank you for your attention and for reading this document.

3. Oil and gas staff are by far the biggest volunteers who spend time with children and families healing from trauma at Tennyson. They are remarkable volunteers who bring light to a community of Coloradans who need more light.

We wanted to share these insights in an effort to explain how deeply we at Tennyson value the contribution of this community to Colorado's wellbeing, and appreciate you taking this into consideration as you discuss ways in which to help all Coloradans thrive.

Sincerely,

A handwritten signature in cursive script that reads "Edward D. Breslin".

Edward D Breslin
President and CEO



March 5, 2019

RE: SB19-181: Protect Public Welfare Oil and Gas Operations

Dear members of the Colorado Senate Transportation & Energy Committee:

We appreciate the opportunity to say a few words regarding our strong relations with Colorado's oil and gas industry, who have and continue to support children and families throughout the state in ways that we hope are considered as you move forward.

The Tennyson Center for Children was founded in Loveland Colorado in 1904 and continues, as we did way back in 1904, to support children and families whose experiences with trauma from abuse, neglect and mental health challenges have undermined their abilities to thrive. We are proud of our track record and program, and work with some of the hardest trauma cases in the child welfare and mental health sectors.

To succeed, Tennyson relies on a wide community of supporters who are willing to support the children and families whose experiences with trauma isolate them (many lose their jobs, many are kicked out of school, many families feel deep social isolation, among other impacts that hurt families). Tennyson applauds and appreciates the way that the oil and gas community – its staff, its leaders and their companies – works to help these families heal and thrive.

Specifically, Tennyson appreciates:

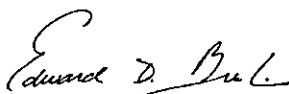
1. The vast majority of adults who come to Tennyson and tell of their days as children at Tennyson actually work for the oil and gas industry. We believe that the oil and gas industry is a significant employer of the children who have journeyed through child welfare and believe that their having a job is essential for their continued healing and thriving as adults

2. The oil and gas industry is the largest investor in Tennyson among corporate donors (as a group). They have invested in our most innovative work in parts of the state where funding and services are sparse, and allowed us to help children and families heal together rather than be removed from their homes and sent to Denver for residential treatment. This support saves lives, helps children heal locally and frankly saves Colorado money

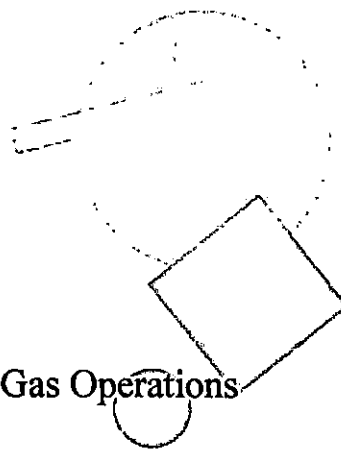
3. Oil and gas staff are by far the biggest volunteers who spend time with children and families healing from trauma at Tennyson. They are remarkable volunteers who bring light to a community of Coloradans who need more light.

We wanted to share these insights in an effort to explain how deeply we at Tennyson value the contribution of this community to Colorado's wellbeing, and appreciate you taking this into consideration as you discuss ways in which to help all Coloradans thrive.

Sincerely,



Edward D Breslin
President and CEO



March 5, 2019

RE: SB19-181: Protect Public Welfare Oil and Gas Operations

Dear members of the Colorado Senate Transportation & Energy Committee:

We appreciate the opportunity to say a few words regarding our strong relations with Colorado's oil and gas industry, who have and continue to support children and families throughout the state in ways that we hope are considered as you move forward.

The Tennyson Center for Children was founded in Loveland Colorado in 1904 and continues, as we did way back in 1904, to support children and families whose experiences with trauma from abuse, neglect and mental health challenges have undermined their abilities to thrive. We are proud of our track record and program, and work with some of the hardest trauma cases in the child welfare and mental health sectors.

To succeed, Tennyson relies on a wide community of supporters who are willing to support the children and families whose experiences with trauma isolate them (many lose their jobs, many are kicked out of school, many families feel deep social isolation, among other impacts that hurt families). Tennyson applauds and appreciates the way that the oil and gas community – its staff, its leaders and their companies – works to help these families heal and thrive.

Specifically, Tennyson appreciates:

1. The vast majority of adults who come to Tennyson and tell of their days as children at Tennyson actually work for the oil and gas industry. We believe that the oil and gas industry is a significant employer of the children who have journeyed through child welfare and believe that their having a job is essential for their continued healing and thriving as adults

2. The oil and gas industry is the largest investor in Tennyson among corporate donors (as a group). They have invested in our most innovative work in parts of the state where funding and services are sparse, and allowed us to help children and families heal together rather than be removed from their homes and sent to Denver for residential treatment. This support saves lives, helps children heal locally and frankly saves Colorado money

1992-1993

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

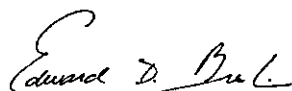
... ..

... ..

3. Oil and gas staff are by far the biggest volunteers who spend time with children and families healing from trauma at Tennyson. They are remarkable volunteers who bring light to a community of Coloradans who need more light.

We wanted to share these insights in an effort to explain how deeply we at Tennyson value the contribution of this community to Colorado's wellbeing, and appreciate you taking this into consideration as you discuss ways in which to help all Coloradans thrive.

Sincerely,



Edward D Breslin
President and CEO

WRITTEN TESTIMONY SHEET

DATE: 3/5/19

NAME: Brandon Lorenz

SB/HB # and Title: SB 181

PHONE: _____

PRIME SPONSORS: _____

WRITTEN TESTIMONY:

I moved to Colorado in 2005 not to work in oil & gas but for the Mountains, Snowboarding, and outdoor activities. In need of a job, the oil & gas industry has given me a job and career. I want to continue to live here but I need some confidence that I will be able to support my wife & 3 year old boy. I am not here to support one extreme or the other. I would like to ask for this commission to hold off voting to have a real discussion. ~~I want~~ I value everyone on both sides to come up with a solution. ~~At the same time~~ ~~the~~ ~~effect~~ I don't want the quickness of this bill to impact my job without all stakeholders at the table. ~~Done~~

PRINT NAME: Brandon Lorenz

SIGNATURE: 

Section 12 - new roller

Section 13/14 gravel pooling $\Delta\Delta\Delta$

Section 14 - mowme mobilized patches
of the full doesn't exceed 50% of
total appropos

Section 15 - repair

Section 16 - amend quantities pour

RESERVED

FOR

CS STAFF

with some 25/10/02

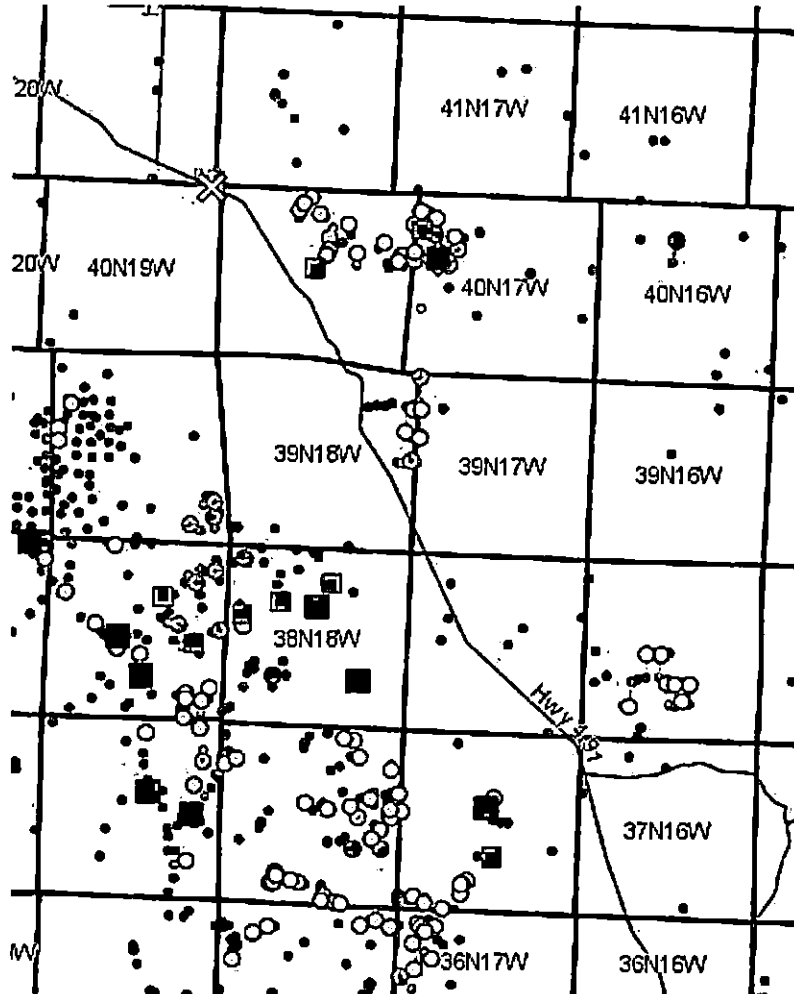
the 1st of July 1902 - 1/5/1902

the 1st of July 1902 - 1/5/1902
the 1st of July 1902 - 1/5/1902

the 1st of July 1902 - 1/5/1902

the 1st of July 1902 - 1/5/1902

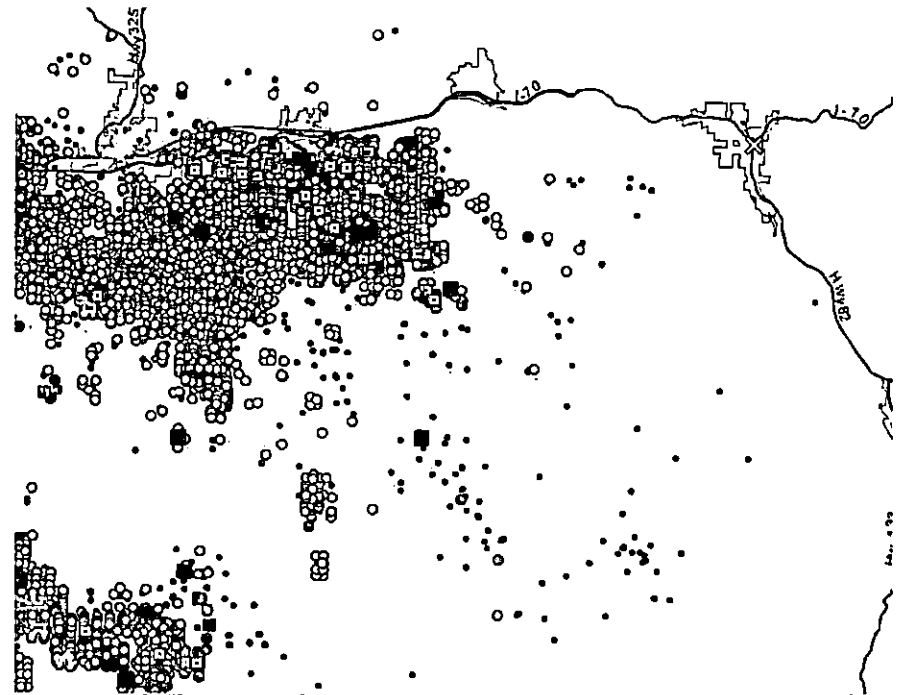
5.3 Magnitude, Dove Creek near Grand Junction
3/5/19



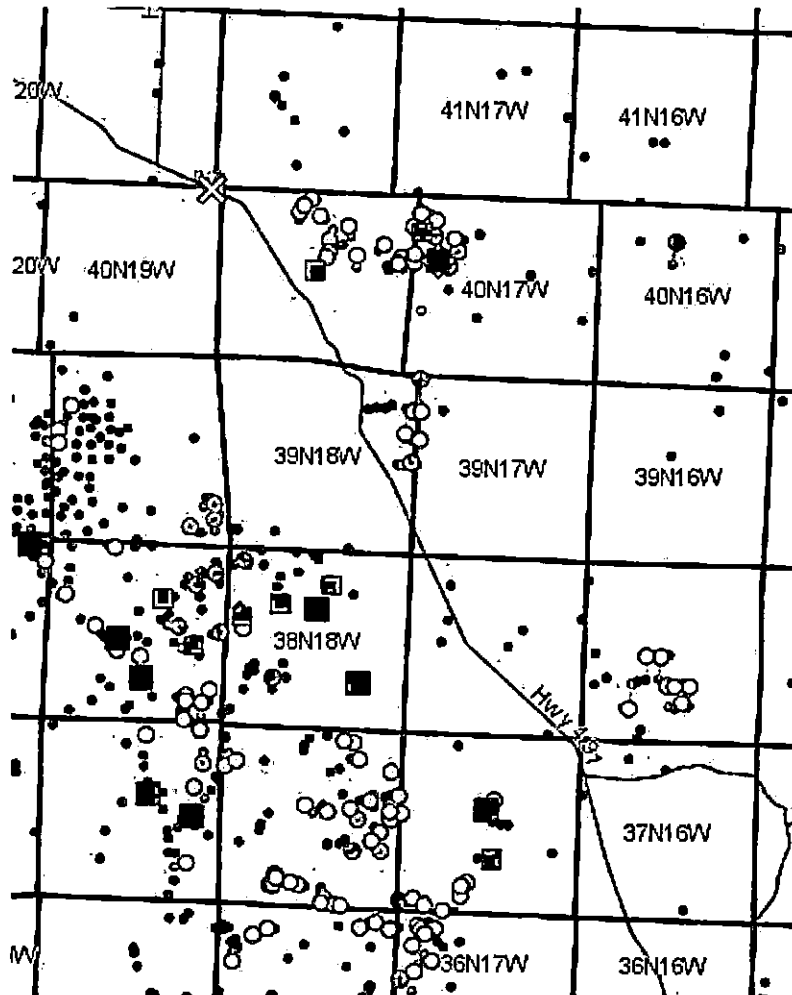
Legend:

- Dark Blue Boxes: Injection Wells
- All other, pending or existing wells

3.1 Magnitude near Glenwood Springs
2/1/19



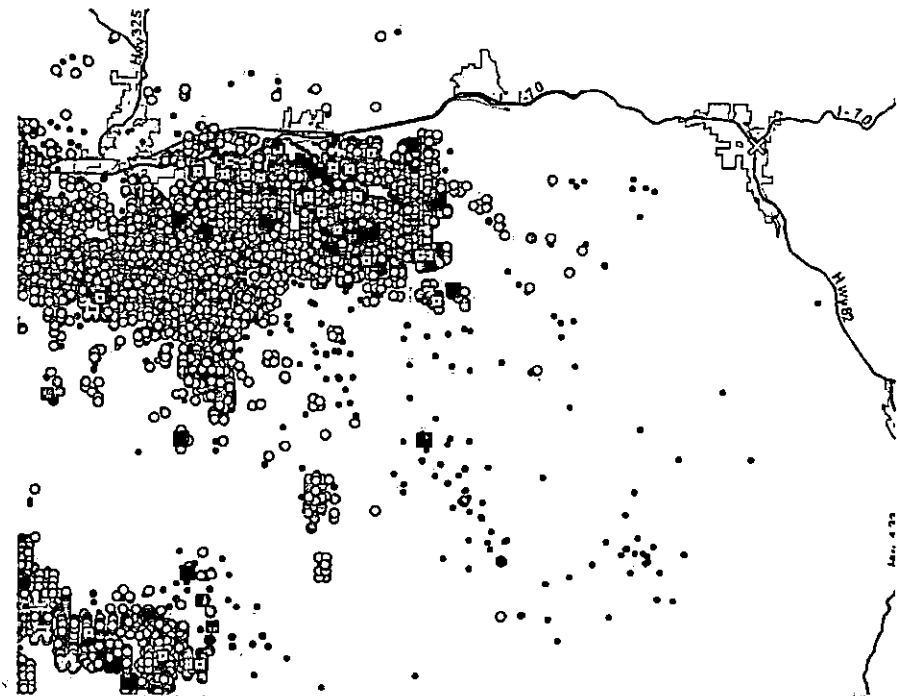
5.3 Magnitude, Dove Creek near Grand Junction
3/5/19



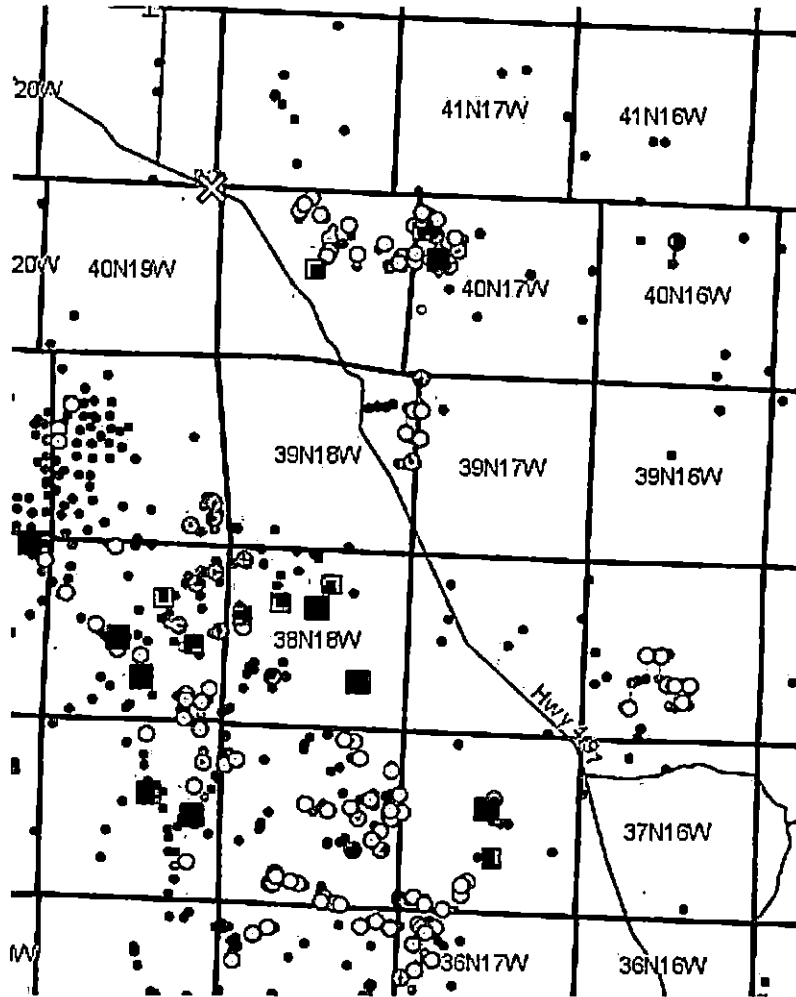
Legend:

- Dark Blue Boxes: Injection Wells
- All other, pending or existing wells

3.1 Magnitude near Glenwood Springs
2/1/19

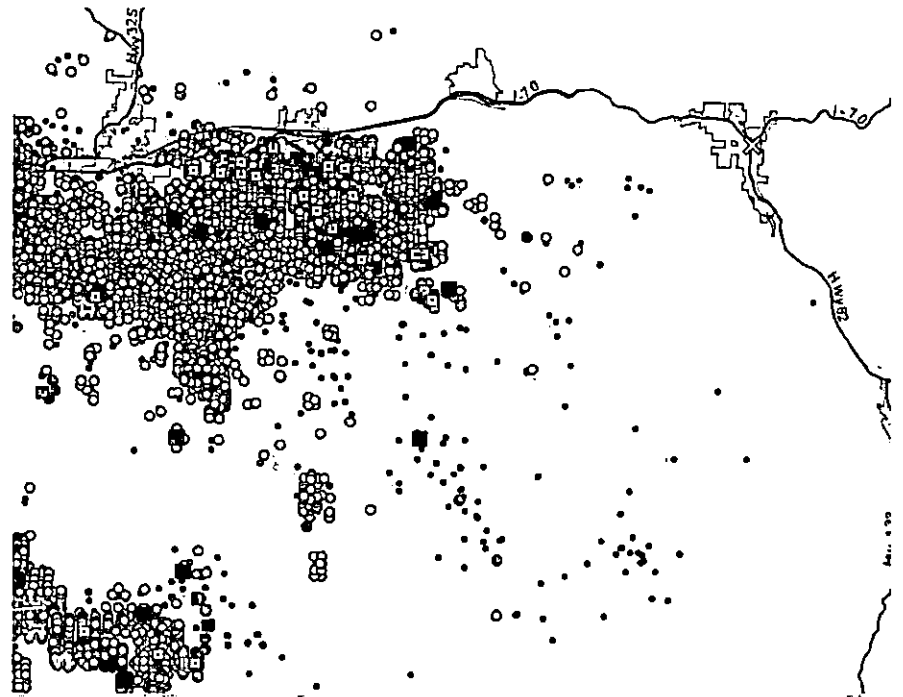


5.3 Magnitude, Dove Creek near Grand Junction
3/5/19

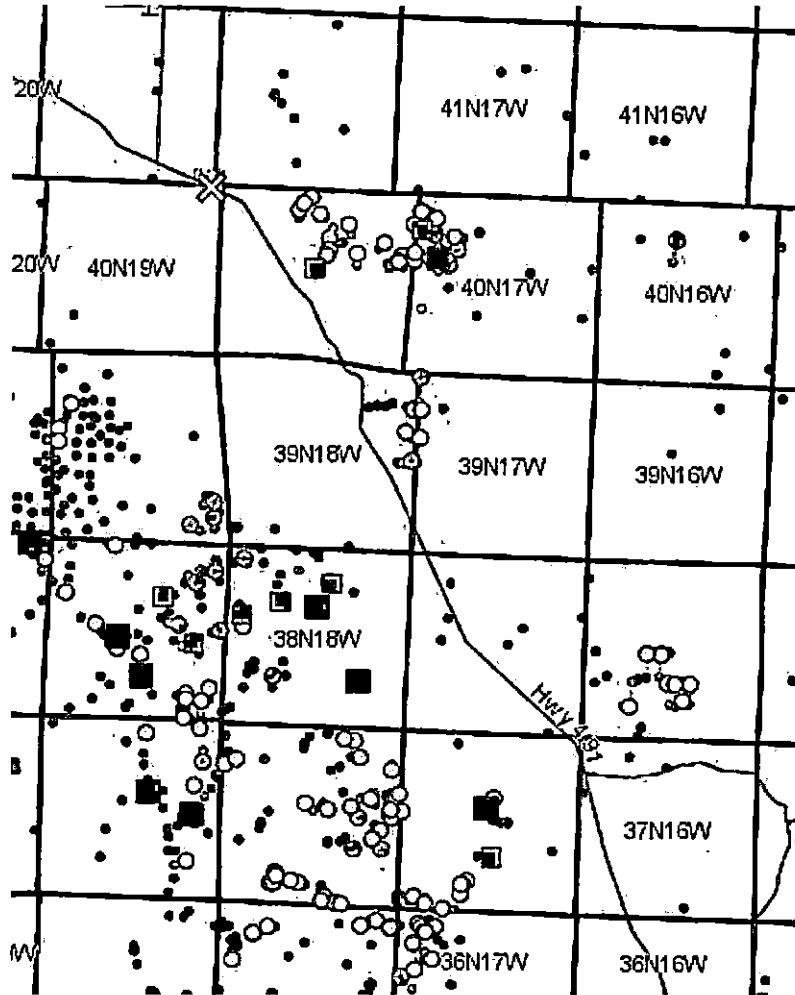


Legend:
Dark Blue Boxes: Injection Wells
All other, pending or existing wells

3.1 Magnitude near Glenwood Springs
2/1/19



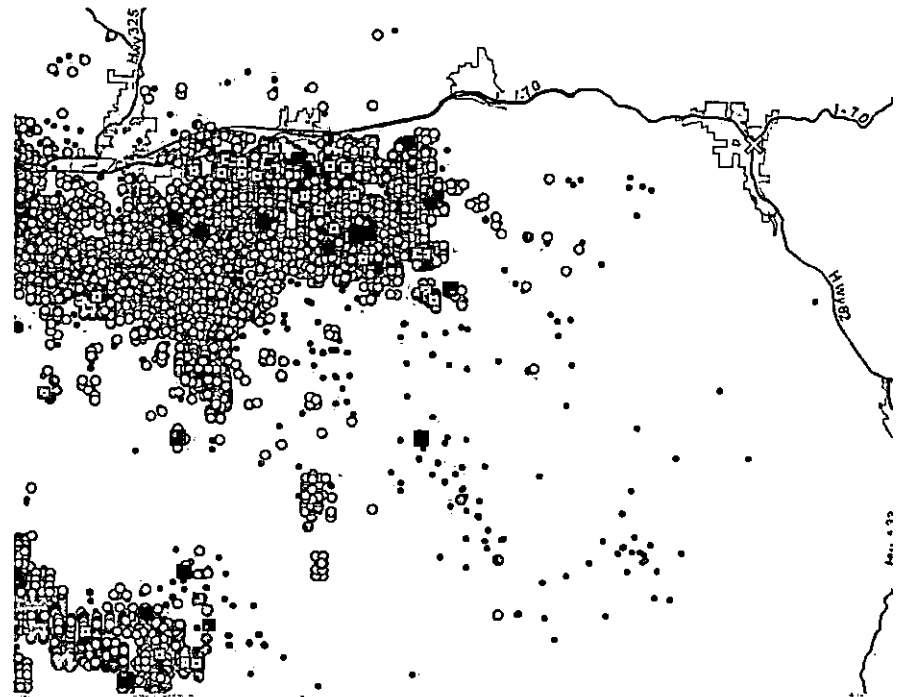
5.3 Magnitude, Dove Creek near Grand Junction
3/5/19



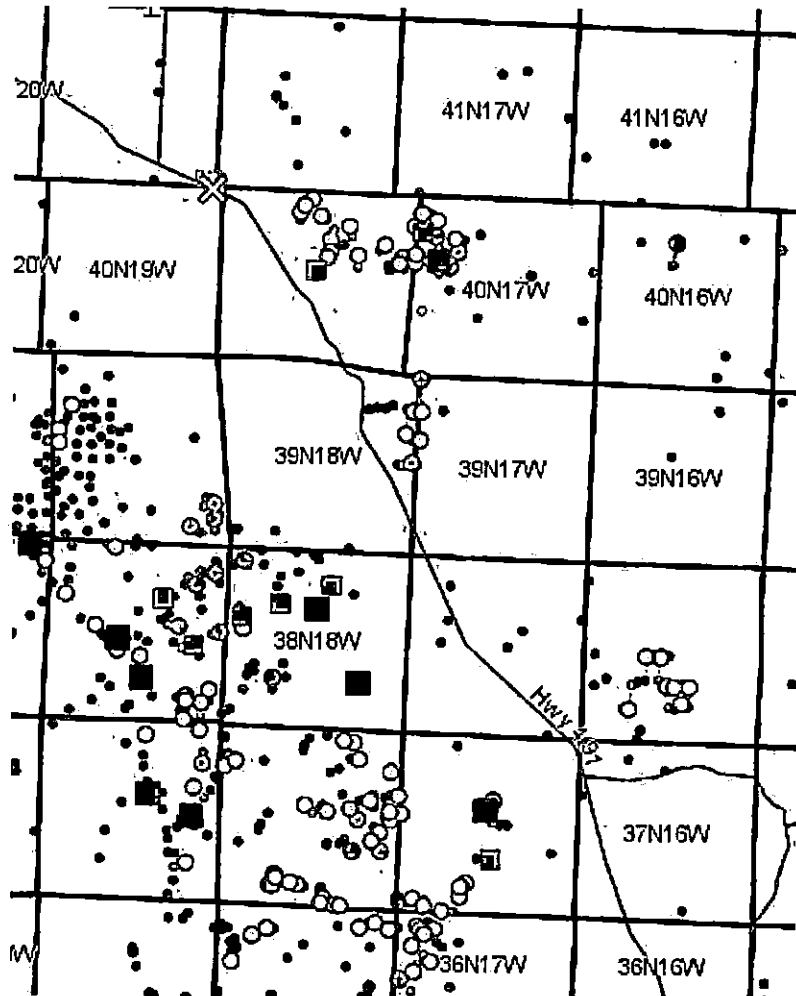
Legend:

Dark Blue Boxes: Injection Wells
All other, pending or existing wells

3.1 Magnitude near Glenwood Springs
2/1/19



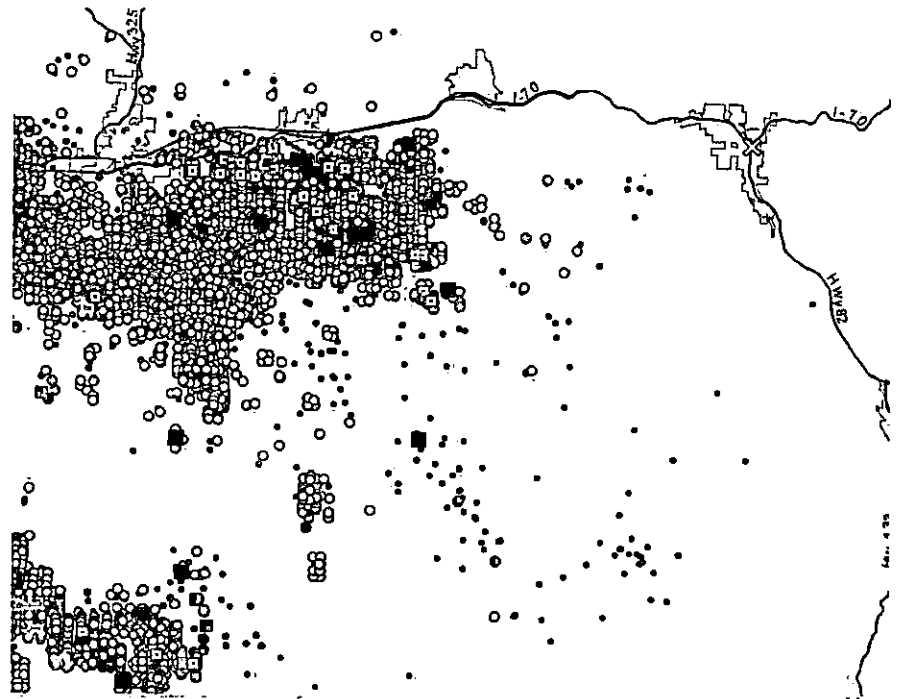
5.3 Magnitude, Dove Creek near Grand Junction
3/5/19



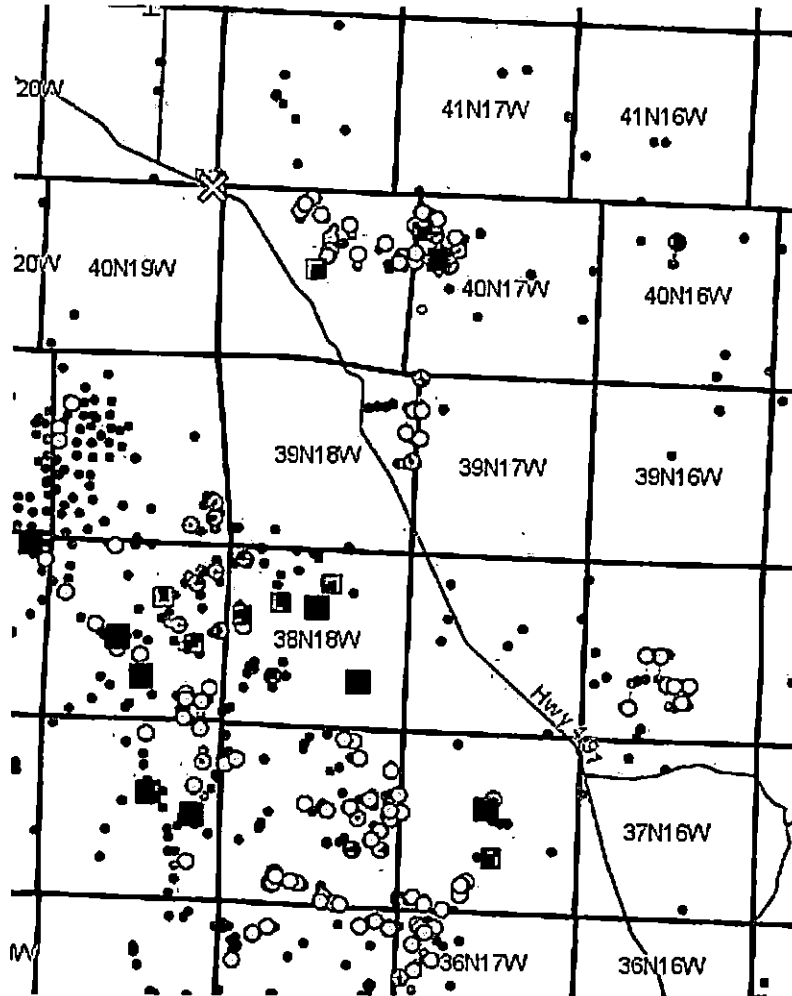
Legend:

Dark Blue Boxes: Injection Wells
All other, pending or existing wells

3.1 Magnitude near Glenwood Springs
2/1/19

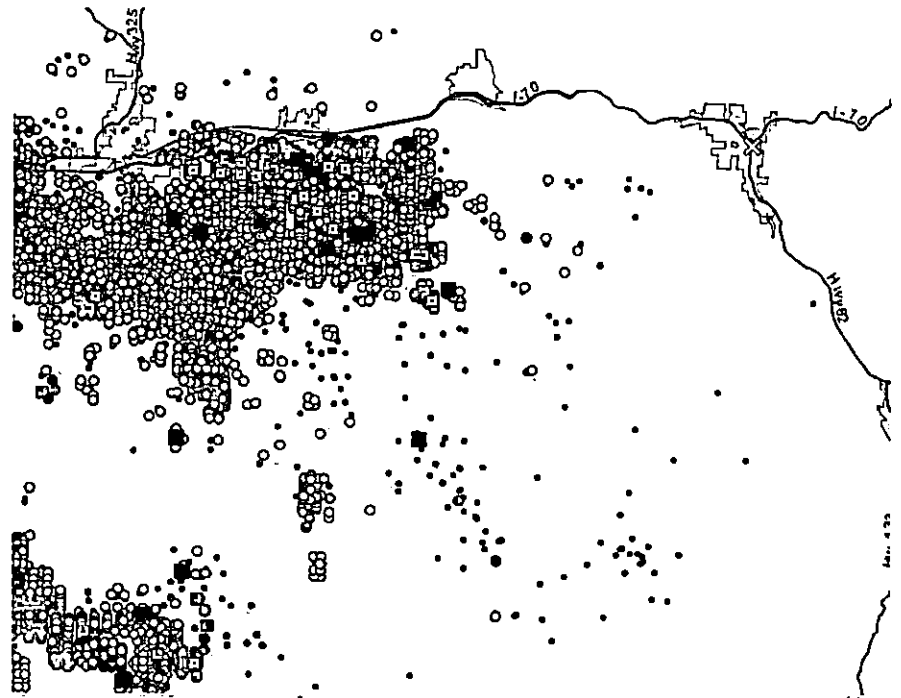


5.3 Magnitude, Dove Creek near Grand Junction
3/5/19

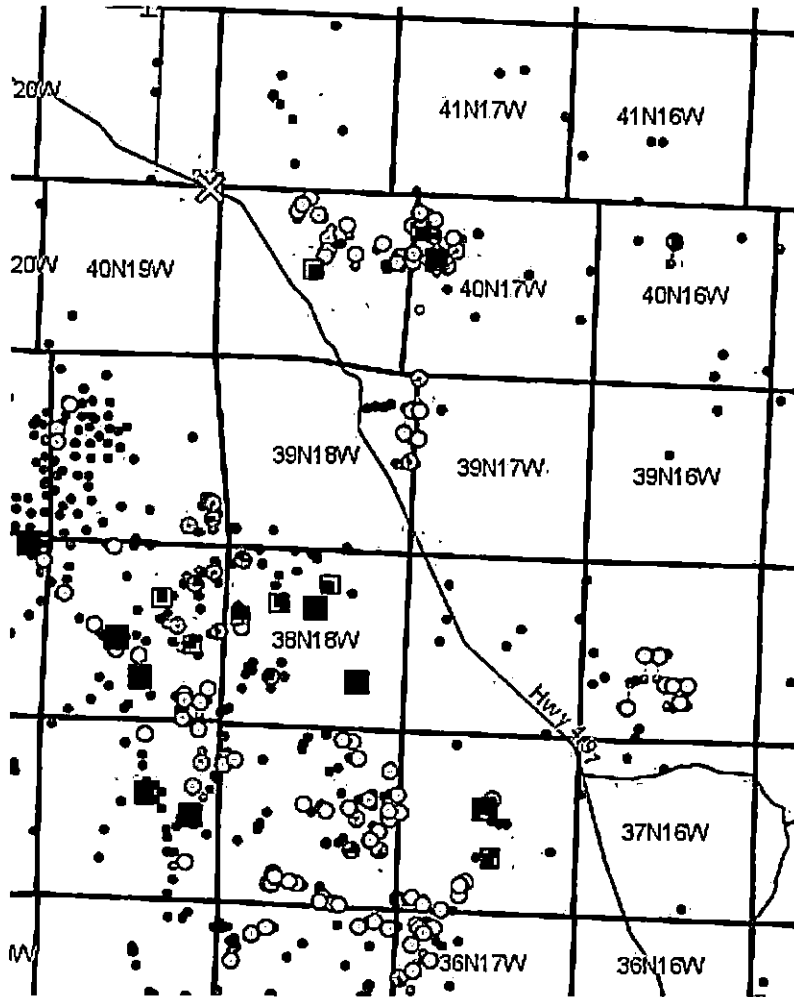


Legend:
Dark Blue Boxes: Injection Wells
All other, pending or existing wells

3.1 Magnitude near Glenwood Springs
2/1/19

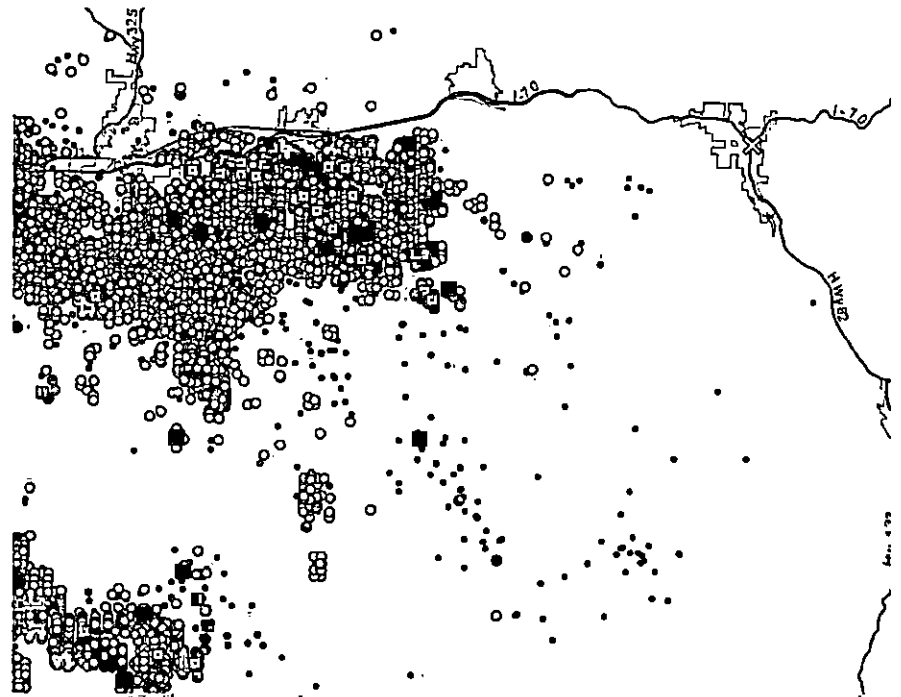


5.3 Magnitude, Dove Creek near Grand Junction
3/5/19



Legend:
Dark Blue Boxes: Injection Wells
All other, pending or existing wells

3.1 Magnitude near Glenwood Springs
2/1/19





GENOVA DIAGNOSTICS

3425 Corporate Way
Duluth, GA 30096

Volatile Solvents ENVIRONMENTAL

Patient: **LODDIE
MACIULA**
DOB: [REDACTED] 2016
Sex: F

Order Number: [REDACTED]
Completed: May 29, 2018
Received: May 05, 2018
Collected: May 04, 2018

Reddy Natural Medicine
Matthew Reddy ND
1140 W South Boulder Rd Ste 101
Lafayette, CO 80026-8910

0762 Volatile Solvents Profile - Whole Blood

Methodology: Gas Chromatography/Mass Spectrometry

	Results ng/mL	Percentile			
		50th	75th	90th	95th
Volatile Solvents					
1. Benzene	0.56	<DL	0.06	0.17	0.26
2. Ethylbenzene	0.07	<DL	0.05	0.08	0.11
3. Styrene	<DL	<DL	0.05	0.09	0.12
4. Toluene	<DL	<DL	<DL	0.43	0.68
5. m,p-Xylene	0.14	0.13	0.2	0.28	0.34
6. o-Xylene	<DL	<DL	0.051	0.072	0.09

Percentile values are from the NHANES Fourth National Report on Human Exposure to Environmental Chemicals, Updated Tables, CDC, 2009.

7. Hexane	179	236	304	380	419
8. 2-Methylpentane	24	52	63	75	88
9. 3-Methylpentane	59	100	116	142	164
10. Iso-octane	1.9	7.6	8.6	9.6	10.2

No national reference ranges are established for hexane, 2- and 3-methylpentane and iso-octane. Percentile ranges are based on patient samples analyzed by Genova Diagnostics.

These levels provide a reference range to determine whether an individual has been exposed to higher levels of toxicants than found in the general population.

<DL = less than detection limit
>UL = greater than upper linearity limit

Lab Comments

Volatile Solvents results confirmed by repeat analysis. 051618 LV

This test has been developed and its performance characteristics determined by Genova Diagnostics, Inc. It has not



Patient: **LODDIE MACIULA**
DOB: [REDACTED] 2016
Sex: F
MRN: [REDACTED]

Order Number: [REDACTED]
Completed: October 22, 2018
Received: October 12, 2018
Collected: October 11, 2018

Reddy Natural Medicine
Matthew Reddy ND
1140 W South Boulder Rd Ste 101
Lafayette, CO 80026-8910

0762 Volatile Solvents Profile - Whole Blood

Methodology: Gas Chromatography/Mass Spectrometry

	Results ng/mL	Percentile			
		50th	75th	90th	95th
Volatile Solvents					
1. Benzene	<DL	<DL	0.06	0.17	0.26
2. Ethylbenzene	<DL	<DL	0.05	0.05	0.11
3. Styrene	<DL	<DL	0.05	0.09	0.12
4. Toluene	<DL	<DL	<DL	0.43	0.68
5. m,p-Xylene	<DL	0.13	0.2	0.28	0.34
6. o-Xylene	<DL	<DL	0.051	0.072	0.09

Percentile values are from the NHANES Fourth National Report on Human Exposure to Environmental Chemicals, Updated Tables, CDC, 2009.

7. Hexano	141	238	304	380	419
8. 2-Methylpentane	26	52	63	75	88
9. 3-Methylpentane	62	100	116	142	164
10. Iso-octane	1.5	7.6	8.6	9.6	10.2

No national reference ranges are established for hexano, 2- and 3-methylpentane and iso-octane. Percentile ranges are based on patient samples analyzed by Genova Diagnostics.

These levels provide a reference range to determine whether an individual has been exposed to higher levels of toxicants than found in the general population.

<DL = less than detection limit
>UL = greater than upper linearity limit

This test has been developed and its performance characteristics determined by Genova Diagnostics, Inc. It has not been cleared by the U.S. Food and Drug Administration.