

**BEFORE THE AIR QUALITY CONTROL COMMISSION
STATE OF COLORADO**

PREHEARING STATEMENT OF BE THE CHANGE - USA

**IN THE MATTER OF PROPOSED REVISIONS TO REGULATION NUMBERS 3, 6
AND 7 AS IT RELATES TO THE SCHEDULED OIL AND GAS RULEMAKING
HEARING FEBRUARY 19-21, 2014**

BE THE CHANGE -USA, through its undersigned representatives, hereby submits its Prehearing Statement in this matter pursuant to Sections V.E.6.c. of the Procedural Rules of the Colorado Air Quality Control Commission ("AQCC" or the "Commission"), and pursuant to the Commission's December 10, 2013 Notice of Public Rulemaking Hearing ("Notice").

I. EXECUTIVE SUMMARY

The economic analysis is incomplete--woefully so, in our opinion. It only focuses on direct costs to the industry. The focus should be on public health costs instead. In addition, the cost savings to industry from the sale of recovered product must be included and netted out against industry costs in the analysis.

The analysis is, in fact, upside down in its emphasis, exposing a troubling bias of corporate interest over the interests of public health and wellbeing.

The industry has no right to impose toxic trespass upon Colorado residents. There should not be a 6 ton per year trigger level for storage tank regulation; all storage tanks should have emission capture systems. The industry should be obligated to release near zero rates of VOCs and methane as recent investigations by the University of Texas in cooperation with the Environmental Defense Fund have shown are possible from their recent well monitoring study.

II. STATEMENT OF FACTUAL AND LEGAL ISSUES

1. To assess the public health impacts, the analysis needs to incorporate existing health care cost criteria in the analysis, like that used by EPA in risk assessments at Superfund sites and/or the assessment criteria in the Clean Air Act's NSPS Part OOOO.

For example, the Center for Disease Control (CDC) in Atlanta estimates the annual public health costs of asthma to be \$56 billion nationally. This cost is based on its analysis of 2007 data.

Colorado is the 5th largest gas producer in the nation, the 8th largest oil producer. Colorado's production of each has increased by roughly 27 and 64 percent respectively since 2007. The relationship of VOCs and asthma is undeniably strong. According to industry generated data, as reported by the Governor at his press conference, it contributes 275 thousand tons of VOC

pollutants to our air annually, three times that of all the cars in the state. Therefore, the analysis should focus on how much of the asthma epidemic in Colorado is or might be attributable to the 275 thousand tons of VOCs released by the industry annually; the level of reduction one might expect from the proposed rule making; and most importantly, the remaining asthma threat to Colorado citizens that would remain after this rule is in effect. We would also add that the asthma costs, as estimated by the CDC, have probably risen substantially since 2007, as has the industry's contribution here in Colorado given the rapid rise in oil and gas production since those public health cost estimates were made.

Asthma and its close association with VOCs is only one public health marker. There are countless others. Dr Theo Colborn's recent study of oil and gas fracking operations, <http://endocrinedisruption.org/chemicals-in-natural-gas-operations/air-pollution>, is alarming from a public health perspective as this excerpt from the article abstract shows:

A literature search of the health effects of the NMHCs (non-methane hydrocarbons) revealed that many had multiple health effects, including 30 that affect the endocrine system, which is susceptible to chemical impacts at very low concentrations, far less than government safety standards. Selected polycyclic aromatic hydrocarbons (PAHs) were at concentrations greater than those at which prenatally exposed children in urban studies had lower developmental and IQ scores. The human and environmental health impacts of the NMHCs, which are ozone precursors, should be examined further given that the natural gas industry is now operating in close proximity to human residences and public lands.

Another study by Dr. Lisa McKensie at Colorado's own School of Public Health, <http://cogcc.state.co.us/.../Health Risk Assessment of Air E...>, using EPA's risk assessment protocols as we recommend be employed in this analysis, showed that, among other things, people living within a half mile of properly operating well might experience a 10 in 1,000,000 increased risk of contracting cancer. Those living greater than one half mile of the site might have a 6 in a million chance. These numbers have been poooh poohed by the industry and even by a senior official at COGCC. This sort of cavalier dismissiveness is only possible if one thinks himself immune to the laws of statistics and that the loss of 10 lives, or even one life, is inconsequential in the great scheme of things.

2. Furthermore, some well site boundaries have been approved that are less than 100 feet from homes. Moreover, in the most egregious example of which we are aware, which happens to be in Greeley, 67 wells on a single pad were state approved despite the sites close proximity to residences. Another Greeley site, with 33 wells, has also been approved. This site is around 400 feet from a primary school playground. The analysis should attempt to determine how great the health risks if one lives fewer than 300 feet from a well site, and then measured again and again at 100 foot intervals. Similarly, an analysis should be conducted of how much increased risk there is, if any, with increased well concentration, say at 4 to 6 well increments. Do people living near a well pad with 16 or 20 or 50 wells have greater public health risks than those living near a smaller number of wells? When does this risk evaporate for the immediate population, at what distance?

3. Setbacks from buildings and reporting thresholds for existing glycol dehydrators, as set forth in the proposed regulations, page 3, is based on no public-health science we are aware of. Indeed, as reported by McKensie of the Colorado School of Public Health, unhealthy concentration of VOCs and other toxic gas emissions were found 1/2 mile from properly operating wells in Garfield County. Therefore rigorous control requirements should apply to all glycol dehydrators without regard to their distance from a building or the amount of uncontrolled VOC emitted.

4. Inadequate design of storage tank capture systems is not a legitimate reason for venting. Design criteria should require that capture systems be capable of handling nearly 100% of all organic volatiles being stored, unless release is essential for safety reasons, and even then the protocols should be so rigorous there can be no gaming of them.

5. The proposed Rule 7 analysis does not treat alternatives. We think that analysis must be augmented so that the public health impacts can be monitored and evaluated incrementally. That is, what reduction in estimated public health costs do we see if we reduce VOCs by one-third as proposed, and how much greater are they if the reduction are half, two thirds, etc? This could be portrayed at each increment against cost increases to the industry for limiting their pollution at each stage, less market value of resources saved. Remember the EDF and the industry claim that fracking air emissions can be less than one percent. That assertion should be tested in the analysis

For this analysis a public health baseline should be established. What is often called a future-without-scenario. Under this scenario, the present-day public health costs in dollars for the 275 thousand tons of VOCs being emitted annually would help form the baseline. Added in, would be the annual increase in VOCs from new drilling. The costs of health considerations from other chemicals as measured by Colborn and McKensie should be added in as well. Ideally, this analysis would be at both the micro and macro levels, since impacts to people living near or nearest drilling operations might be immediately more severe than those living some distance away.

6. The costs to the industry in the present draft analysis are wildly over-estimated in our opinion. The gasses that are being saved rather than being leaked, vented, or flared have value. That value to market must be deducted out against increased operating costs, so that a net cost is shown. Cost savings as a result of any operator selling the captured emissions, including methane and light hydrocarbons, must be included in the Rule 7 cost analysis based on the procedures used in EPA Natural GasStar program or other equivalent method. A recent study of flaring in North Dakota's Bakken oil field determined that about 30 percent of all gas production was being flared. Still, this is an extremely conservative estimate in our opinion. But even more importantly, that study showed, <http://www.ceres.org/resources/reports/flaring-up-north-dakota-natural-gas-flaring-more-than-doubles-in-two-years/view>, bringing the product to market exceeded the costs of constructing the needed transmission line in all instances, though it admittedly slowed down the recovery of investment from quick oil sales which can easily be stored, unlike gas.

7. On page 23 of the draft analysis, **Section F, Require Newly Constructed Gas Wells be Connected to a Pipeline or Route Emissions to A Control Devices**, the estimate is floated that there may be as few as 61 instances in the state where gas is "being flared or vented rather than being put into a transmission line." We are incredulous, for there are well over 50,000 active wells in the state, and if one flies into Denver over northeast Colorado at night one might think the land below was a giant birthday cake for Methuselah, the flaring is so distinctly commonplace. But more importantly, we think this rule could be much stronger by adding that new production sites will not be permitted until a transmission line is in place or these gases can be fully used for on-site power systems. This rule would be consistent with the Colorado Oil and Conservation Act, which declares at 34-60-107, **Waste of oil or gas prohibited**. "The waste of oil and gas in the state of Colorado is prohibited by this article." We must admit that the definitions section of the law confuses this refreshingly straightforward declaration.

8. We see no reason for the prohibition in **Section F** to apply to only new wells. It should apply to all wells. If there was a cumulative accounting of how much gas is being wasted through flaring this analysis might be much easier to make.

For example, in the Bakken study referenced above, the CERES analysts estimated the value of the gasses being flared at \$1 billion dollars annually, while simultaneously introducing CO₂ into the atmosphere equivalent to the contribution of one million automobiles. Colorado produces 10 times more gas than does the Bakken, so the industry's flaring practice, from both a waste and climate-public health perspective, must be given much greater emphasis and refinement than it has received in the draft economic analysis.

9. The discussion of pipeline gas leaks is, at best, cursory. If our reading is correct, the analysis simply says that pipelines will be monitored, and stops there. A recent congressional study of leaks in service pipelines in Boston showed that 45 percent of the gas in these systems leaked before reaching ratepayers. What is the rate in Colorado? This might be approached by looking first at the oldest pipelines, both field and city, to estimate the overall leakage rate. The PUC recently granted Xcel a \$77 million rate increase, part of which will be used to replace aging gas pipelines. What is the status of the industry's pipelines? What percentage has been replaced over the years? What is their leakage rate? How much of the 275,000 tons of VOCs introduced by the industry annually is or can be attributable to leaking pipelines in the field and in the cities? From a public health standpoint these seem to us to be extremely important data points in devising solutions.

10. We wonder why the proposed rules exempt facilities purportedly contributing less than 6 tons of VOCs annually. This exemption assumes a steady-stream level of pollution. We know this to be untrue. The systems burp, and sometimes often. Therefore, we recommend that all operations be subject to the same criteria. No exceptions.

The state did not exempt cars from pollution testing simply because they were smaller than trucks, for overall or cumulatively their contribution might be greater, and probably

is. The same principles should be applied here. Plus, from a regulatory standpoint, exceptions breed gaming.

11. This brings us to a longstanding problem we have with the way analysis is done by the COGCC. It is almost never aggregated, but focuses on specific activities and facilities. This does not allow us to see the fracking universe in its entirety, making cumulative impact analysis impossible. Therefore, we recommend the annual contribution of 275 thousand tons of VOCs be broken down by activity. Perhaps in these terms: Drilling, flaring, venting, leaks (pipelines especially), maintenance, etc. Then the analysis could show how effective the proposed regulations are in reducing pollution in each sector.

We are also concerned about the impact continued drilling will have on the presumed 1/3 reduction in VOCs. How much will this reduction be offset by new wells in the future? How would 2000 new wells annually contribute to undoing the initial benefits of these new regulations?

12. Self regulation is little more than wistful dreaminess bred of deception and weak mindedness if one is truly serious about correcting abuse, accidental or otherwise, and protecting public health. In the real world where the protection of profits rule, self regulation by any industry is impossible. We can think of no major industry where it is even attempted. Yet, it is the oil and gas industry that will apply and implement these rules. How would self-regulation work in food safety, in automobile safety, in airplane safety, in highway safety? How can it possibly work here? We recommend that the division add additional inspectors to the Air Pollution Control Division, at industry cost, to assure these regulations are enforced. And that air monitoring authority be given to local governments to assist in this essential enterprise.

13. These rules will require the industry to capture methane from varying sources. As the Commission is well aware, the governor and elected state officials have assumed that switching the state's electric production from coal to natural gas would benefit climate stability since combustion of natural gas releases approximately 50% less greenhouse gases compared to coal.

However, this assumption is off base since the life cycle methane emissions associated with field production of natural gas, processing, transportation, and distribution have been shown to exceed the green house gas emissions from coal. Investigations by Professors Ingraffea and Howarth of Cornell University resulted in an estimate that the industry's life cycle methane releases were in the 3.6% to 7.9% range of the total gas produced. According to the IPCC's AR5 report released in November 2013, methane has a 35 times higher heat retention capacity compared to CO₂ over 100 a year time horizon, and an alarming 86 times greater capacity than CO₂ over a twenty year period. Unless the industry can produce natural gas and release less than 1% of the methane they produce, the so-called "bridge fuel" of natural gas adds more global warming potential than coal.

Investigations by National Oceanographic and Atmospheric Administration (NOAA) scientists from Boulder, Colorado, confirm a high rate of release: 4% of methane from natural gas drilling in Weld County, Colorado, and up to 9% of the produced gas in Utah, which doesn't include the

gas distribution leaks. In Dr. Ingraffea's words: "Our original estimate was conservative, unfortunately." This means that to avoid disastrous, worldwide temperature increases by mid century, reducing methane in our lifetimes is vastly more critical than reducing CO₂. For climate reasons, the Commission must apply capture rules that assure that the field leakage rate is less than 1%, a leak rate shown to be possible based on the University of Texas and EDF findings.

14. We note no penalties are associated with noncompliance of these proposed regulations. You might as well put a wedding dress on a heifer and lead her to the altar. The results will not be grand, and the public's trust will be further diminished, if indeed trust is even possible in the present political climate. Implement real penalties. Make them transparent. The public will applaud.

III. ISSUES TO BE RESOLVED BY THE COMMISSION

1. The Commission is requested to add the public health care costs associated with industry VOCs emissions that would result before and after implementation of these regulations.
2. The Commission should add the income to the industry associated with the sale of the additional collected gases that would offset the direct costs to industry resulting from implementation of Rule 7.
3. The Commission should regulate all oil and gas industry sources of VOCs and methane so that near zero emission rates are achieved.
4. The Commission should direct the Division to add additional inspectors as necessary to assure that these rules are implemented in fact and do not rely entirely upon self-regulation by the industry.
5. The Commissions should assure that all local governments in Colorado have the authority to enforce these regulations and to conduct AVOs, Approved Instrument based monitoring, or order improvements in STEM plans. Any properly qualified local government employee should be granted access to any oil and gas facility to conduct such inspections.

IV. COPIES OF ALL EXHIBITS TO BE INTRODUCED AT THE HEARING

The following references were cited in support of our prehearing statement.

Allen DT, Torres VM, Thomas J, Sullivan DW, Harrison M, Hendler A, et al. 2013. Measurements of methane emissions at natural gas production sites in the United States. Proceedings of the National Academy of Sciences of the United States of America 110:17768-17773.

Center for Disease Control, Asthma in the US Growing Every Year, May 2011, <http://www.cdc.gov/vitalsigns/asthma/>

CERES, Flaring Up: North Dakota Natural Gas Flaring More Than Doubles in Two Years, <http://www.ceres.org/resources/reports/flaring-up-north-dakota-natural-gas-flaring-more-than-doubles-in-two-years/view>,

CIRES, Cooperative Institute for Research in Environmental Sciences, “CIRES, NOAA observe significant methane leaks in a Utah natural gas field, August 5, 2013, <http://cires.colorado.edu/news/press/2013/methaneleaks.html>

Colborn, Theo, et.al. Natural Gas Operations from a Public Health Perspective, Human and Ecological Risk Assessment: an International Journal, September, 2011, <http://endocrinedisruption.org/chemicals-in-natural-gas-operations/journal-article>

Karion A, Sweeney C, Pétron G, Frost G, Michael Hardesty R, Kofler J, et al. 2013. Methane emissions estimate from airborne measurements over a western United States natural gas field. Geophysical Research Letters:n/a-n/a.

Howarth, Robert W., Renee Santoro and Anthony Ingraffea, Methane and the greenhouse-gas footprint of natural gas from shale formations, Climate Change, March 13, 2011, <http://graphics8.nytimes.com/images/blogs/greeninc/Howarth2011.pdf>

Intergovernmental Panel on Climate Change (IPCC), Climate Change 2103, The Physical Science Basis, November 2013, <http://www.ipcc.ch/report/ar5/wg1/#.UuACcygQEwQ>

McKensie, Lisa, Roxana Witter, Lee Newman and John Adgate, Colorado School of Public Health, University of Colorado, Anschutz Medical Campus, Aurora, Colorado, “Human health risk assessment of air emissions from development of unconventional natural gas resources”, Science of the Total Environment, September 15, 2011, <http://cogcc.state.co.us/library/setbackstakeholdergroup/Presentations/Health%20Risk%20Assessment%20of%20Air%20Emissions%20From%20Unconventional%20Natural%20Gas%20-%20HMcKenzie2012.pdf>

Pétron, Gabrielle, et.al., National Oceanic and Atmospheric Administration, “Hydrocarbon emissions characterization in the Colorado Front Range: A pilot study”, Journal of Geophysical Research: Atmospheres, Volume 117, Issue D4.

Peischl J, et al. 2013. Quantifying sources of methane using light alkanes in the Los Angeles Basin, California. Journal of Geophysical Research: Atmospheres 118:1-1

Romm, Joe, Climate Progress, January 2, 2013, “Bridge to Nowhere? NOAA Confirms High Methane Leakage Rate up to 9% from Gas Fields, Gutting Climate Benefit”, <http://thinkprogress.org/climate/2013/01/02/1388021/bridge-to-nowhere-noaa-confirms-high-methane-leakage-rate-up-to-9-from-gas-fields-gutting-climate-benefit/>

Romm, Joe, Climate Progress, More Bad News For Fracking: IPCC Warns Methane Traps Much More Heat Than We Thought, October 2, 2013. “The IPCC reports that, over a 20-year time frame, methane has a global warming potential of 86 compared to CO2...” <http://thinkprogress.org/climate/2013/10/02/2708911/fracking-ipcc-methane/>

University of Texas at Austin, in partnership with the Environmental Defense Fund and participating companies. September 16, 2013, Unprecedented Measurements Provide Better Understanding of Methane Emissions During Natural Gas Production; The study team: “Found that the majority of hydraulically fractured well completions, which were sampled during the study, had equipment in place that reduces methane emissions by 99 percent.”
<http://www.utexas.edu/news/2013/09/16/understanding-methane-emissions/>

V. LIST OF WITNESSES

Phil Doe
Weston Wilson

VI. WRITTEN TESTIMONY TO BE OFFERED INTO EVIDENCE

The testimony of BE THE CHANGE - USA is presented under Item II above and will be summarized by the witnesses at the hearing.

VII. TIME ALLOCATION AT HEARING

Thirty minutes of the commission’s time will be needed to present this public health and other pertinent information.

Respectfully submitted this 22nd day of January, 2014.

Phil Doe, BE THE CHANGE - USA
Phone: 303 973-7774
email: ptdoe@comcast.net

Weston Wilson, BE THE CHANGE - USA
Phone: 719 337-0402
email: anwwilson@comcast.net

CERTIFICATE OF SERVICE

This is to certify that we have duly served the within PREHEARING STATEMENT OF BE THE CHANGE - USA via electronic mail to each of the following this 22nd day of January, 2014 addressed as follows.

Chevron USA, Inc. (Chevron)

(Includes Chevron Midcontinent, LP, and Four Star Oil & Gas Company)

scampbell@popllc.com

jferrin@popllc.com

City of Greeley (Greeley)

brad.mueller@greeleygov.com

Colorado Association of Commerce & Industry (CACI)

cwest@cochamber.com

Colorado Oil & Gas Association (COGA)

tisha.schuller@coga.org

andrew.casper@coga.org

jjost@jsenergygroup.com

jparrot@jsenergygroup.com

Colorado Petroleum Association (CPA)

stan@coloradopetroleumassociation.org

Jennifer.biever@hoganlovells.com

ana.gutierrez@hoganlovells.com

Colorado Utilities Coalition for Clean Air (CUC)

(Includes Platte River Power Authority, Tri-State Generation and Transmission Association, Inc., Public Service Company of Colorado doing business as Xcel Energy, and Colorado Springs Utilities)

jsanderson@rcalaw.com

rosen@rcalaw.com

DCP Midstream, LP (DCP)

jschwarz@csmkf.com

smcnab@csmkf.com

DGS Client Group (DGS)

(Includes Bill Barrett Corporation, Black Hills Exploration and Production, Bonanza Creek Energy, Inc., PDC Energy, Inc., and Whiting Oil and Gas Corporation)

john.jacus@dgsllaw.com

zach.miller@dgsllaw.com

randy.dann@dgsllaw.com

eric.waeckerlin@dgsllaw.com

Dolores County (Dolores)

jrae@ftitel.net

Earthworks Oil & Gas Accountability Project (OGAP)

rcwooley@earthjustice.org

mfreeman@earthjustice.org

Encana Oil & Gas USA (Encana)

jmartin@bwenergyllaw.com

Environmental Defense Fund (EDF)

dgrossman@edf.org

tbloomfield@thegallaghergroup.com

elizabethparanhos@delonelaw.com

Garfield County

preaser@garfield-county.com

GVCA, WAW, CAYV, CCA, WCC, and NFRIA-WSERC

(Includes Grand Valley Citizens Alliances, Weld Air and Water, Community Alliance of the Yampa Valley, Citizens for Clean Air, Western Colorado Congress, and NFRIA-WSERC Conservation Center)

mattsura.law@gmail.com

La Plata County (La Plata)

weaver@lpcattorney.org

Courtney.Roseberry@co.laplata.co.us

Leslie.Jakoby@co.laplata.co.us

La Plata County Energy Council (LPCEC)

tpdugan@dugan-law.com

Local Government Coalition (LGC)

(Includes City and County of Denver, La Plata County, San Miguel County, Pitkin County, Boulder County, Adams County, City of Fort Collins, City of Boulder)

pmilmoe@bouldercounty.org

bdoyle@bouldercounty.org

gregg.thomas@denvergov.org

Jessica.Brody@denvergov.org

Katherine.Wilmoth@denvergov.org

Mesa County (Mesa)

John.Justman@mesacounty.us

Randy.price@mesacounty.us

Peter.baier@mesacounty.us

Moffat County (Moffat)

cgrobe@moffatcounty.net

icomstock@moffatcounty.net

Montezuma County (Montezuma)

jdietrich@co.montezuma.co.us

Natural Resources Defense Council (NRDC)

rcooley@earthjustice.org

mfreeman@earthjustice.org

Noble Energy and Anadarko Petroleum Corporation (Noble & Anadarko)

dkennedy@hollandhart.com

DDiluiqi@nobleenergyinc.com

Julia.Jones@anadarko.com

Phillips County (Phillips)

Randy.Schafer@phillipscounty.co

Laura.Schroettlin@phillipscounty.co

Pioneer Natural Resources (Pioneer)

douq.wall@pxd.com

Regional Air Quality Council (RAQC)
kllloyd@raqc.org

Rio Blanco County (Rio Blanco)
sbolton@co.rio-blanco.co.us
msprague@co.rio-blanco.co.us

Sierra Club (Sierra)
rcooley@earthjustice.org
mfreeman@earthjustice.org

Washington County (Washington)
cpacker@co.washington.co.us
vfoutz@co.washington.co.us

Weld County (Weld)
bbarker@co.weld.co.us

WildEarth Guardians (WEG)
rcooley@earthjustice.org
mfreeman@earthjustice.org

Worldwide Liquid Solutions LLC (WLS)
Dan@danwilsonlaw.us

WPX Energy Rocky Mountain LLC and WPX Energy Production (WPX)
lisa.decker@wpxenergy.com
jodell.mizoue@wpxenergy.com

XTO Energy Inc. (XTO)
Karen_Hill-Pratt@xtoenergy.com
Michael_Cannon@xtoenergy.com

Yuma County (Yuma)
adminlanduse@co.yuma.co.us
finance@co.yuma.co.us

Air Quality Control Commission (AQCC)
jloewy@mac.com
Mike.Silverstein@state.co.us
Theresa.Martin@state.co.us

Office of the Attorney General-Commission Attorney
Tom.Roan@state.co.us

Air Pollution Control Division (APCD)
William.Allison@state.co.us
Garrison.Kaufman@state.co.us
Kirsten.King@state.co.us

Office of the Attorney General-Division Attorney
Clay.Clarke@state.co.us
Robyn.Wille@state.co.us
Linda.Miller@state.co.us