

From: "Hard Rock Books"

To: Edward Hanlon/DC/USEPA/US@EPA

Date: 02/28/2011 11:50 PM

Subject: Public Comment - EPA Hydraulic Fracutring Study - Draft Plan

Mr. Hanlon,

Please accept these comments relative to the EPA's Hydraulic Fracturing - draft study plan. This e-mail supersedes the previous e-mail relative to such comments. This is the only comment I would like to submit relative to this phase of the plan implementation process.

Thank you,

Lisa Bracken

West Divide Creek – a predictable disaster 8 years in the making

A summarized gas production and impact history of West Divide Creek, Colorado

Although the West Divide Creek area was discounted from consideration in selecting field sites worthy of study, I respectfully ask the Advisory Board to reconsider that decision in light of the history of impacts to this region and equally astonishing absence of oversight and scientific explanation of causal incidents.

The tragic neglect of West Divide Creek has been thus-far punctuated by three phases of devastation beginning in 2003 with the “Arbany incident”; following soon after with the “2004 Seep” and finally, the “2008 seep”.

Summary details of these events follow:

On March 09, 2004 the entire region experienced a blow-out of major proportions, causing significant earth tremors a mile distant. But the investigation was improperly skewed, conducted as it was under newly instated fast-track policy and a readily compliant regulatory culture steeped in a singular mission of resource recovery.

On April 01, 2004 a massive seep was found ejecting an acknowledged and estimated 115 million cubic feet of natural gas into the waters and terrestrial environment of West Divide Creek.

A then-simultaneously frac'd natural gas well was found responsible for the seep and re-cemented while a brief drilling moratorium endured and stipulations were put in place.

The Colorado Oil and Gas Conservation Commission's (COGCC) assumptions of safe and adequate drilling stipulations were based upon a false perspective of actual geologic and hydrologic conditions due to a severely rushed and compromised investigation.

Re-cementing failed to stop the 2004 seep, and another seep was found months later associated with the well (Arbaney) that experienced the original blow-out in March, 2004.

Drilling resumed anyway, and was followed on or around May 30, 2008 by the discovery of yet another seep approximately a mile and a half from the original 2004 seep site. In other words, the stipulations failed exactly as predicted... because they were based on false assumptions.

An investigation into this event has been delayed by nearly three years – and to this day fails to fully account for the events, the impact or the conditions which caused the 2008 seep.

Part of those events involved the interception of ground water when drilling. Other events have included massive pressure kicks to multiple well bore infrastructures.

Impacts I have documented, but which remain unexplained and even denied by the COGCC include evidence of hydrocarbons; H₂S, biocides; mineral oil and surfactants into the wetlands environment.

Impacts also included the mass exodus of wildlife, and at least one neurologically affected amphibian.

The significant presence of diesel organics were detected by the Colorado Oil and Gas Conservation Commission at the 2008 seep site in an area of black seepage. New revelations suggest diesel may have been used to frac in this area, as it appears to be coal bed, shale as well as tight sands in nature. These defining characteristics appear ambiguous and applied as a matter of this industry's convenience not genuine geologic classification. We, of course, cannot obtain disclosures of frac fluids. The detection of diesel was dismissed by the COGCC as normal background amounts, but no background was taken.

During this time-frame of summer/fall 2008 yet another well was drilled in the area, which, again, involved the interception of an aquifer at shallow depth. I briefly noted chlorine odor arising from the creek as well as additional impacts likely from interconnected hydrology and springs that feed into West Divide Creek

Finally, a soil gas survey was conducted in September of 2010, at the site of the 2008 seep. That survey revealed methane at a concentration of 6.6% together with the presence of propane, ethane, pentanes and butanes. Despite our repeated requests for a ground water monitor in this region, a ground water monitor has been vehemently denied by both EnCana and the COGCC.

From the day EnCana began drilling in the area – and continuing to this day -- a near-total disregard for human health, safety and welfare has prevailed, buoyed by a gross lack of regulatory oversight. The compliant culture of the Colorado Oil and Gas Conservation Commission has thus-far denied any adverse impacts and countered my observations, basing

justification for its continued permitting actions on a lack of scientific evidence to support our claims.

Ignorance of fact should not dictate policy; therefore, I appreciate the scope of study proposed in the EPA's draft study plan and feel that any lesser effort would compromise the perception of this extraordinarily complex technology and its associated impacts.

Contaminants have surfaced in this region in association with drilling activities, hydraulic fracturing more specifically. Regulatory efforts have been overtly skewed and incomplete. We cannot afford private study to sufficiently determine neither the specific contaminant, the scope, nor the source of hydrocarbon contamination. Therefore we cannot prevent further contamination.

The EPA is now embarking upon a study to examine the practices and potential effects of hydraulic fracturing. We've waited nearly a decade for a scientific eye to turn our way, and once and for all, determine conclusively what is contributing to the ongoing devastation of this unique outcrop/wetland area.

It is inescapable that these impacts occur coincident with drilling, and the argument of weak cementing and the pre-existence of biogenic gas has failed to account for persistent and worsening seeps into and around West Divide Creek.

Despite being the recipient of an enormous amount of persistent press, scientific speculation and accusation this area was inexplicably excluded from the EPA study, despite it meeting every criterion as a retrospective case study.

Poor investigative efforts at discovering sources of impacts have been cobbled together in time and approach. There has been no cohesive action, and no comprehensive plan to match the aggressive schedule of oil and gas development.

With regard to study, there has been a concerted effort to avoid adequate, timely and coordinated scientific study of West Divide Creek and the seeps which persist there and in the nearby region.

I implore the EPA to please study this region in light of the body of work already conducted to date and the many questions that remain relative to the role of hydraulic fracturing.

The COGCC has habitually failed to fully regard conditions or impacts of this region, while deriving slanted conclusions based on incomplete data.

For instance, although it is abundantly clear that geologic data has been insufficiently explained to account for risks to the environment, the COGCC's concurrence with EnCana's interpretations strongly suggest an over-reliance upon industry-presented evidence which may be bias and driven by commercial interests.

There is a recent and debilitating lack of resources in the way of both man power and funding which diminishes the COGCC's capacity to respond adequately to very real and persistent

impacts. Political de-funding and recession-related under-funding are real but poor and insufficient reasons for perpetrating a practice so infamous for its devastating impacts to human health, safety and welfare as well as the broader environment.

It was the Divide Creek seep situation which first drew the nation's attention to risks posed by hydraulic fracturing. And although an at times cosmetic approach to addressing its issues has ensued, it has been with what appears to be a predetermined conclusion based on and supported in part by incomplete and selective science.

But, without knowledge of chemical compounds, there can be no testing. Where there is no testing, there is no violation. Where there is no violation, there is neither innovation nor mitigation of impacts. Where this is no belief of impact, there is no believed need for study. Impacts still occur, but they are without knowledge of scope, cause or quantifiable consequence. The result of this policy is continually degraded human health which is dependent upon diminished environmental vitality.

The West Divide Creek region and its associated impacts pose an apparently unsolvable problem at the levels to which it has been subject to review.

For the past eight years, the aggravated circumstances surrounding continued environmental degradation have been mired in a quandary of compelling impact but reluctant investigation.

Granted, the operator is one of the world's largest and most influential, and granted, there are billions in profit which stand to be extracted from the level of aggressive development which has been allowed. Granted we are positioned in a national sacrifice zone, but our personal sacrifice and the sacrifice of the land should not be without notice or measure... particularly as the devastating practices which have led up to this destruction continue to proliferate across the national landscape.

This region and its enduring, discoverable, measurable, physical impacts would doubtless benefit from multiple, learned perspectives of experts trained in diverse disciplines and apart from cultural influences of presumption.

No other area possesses the historic base of data – though incomplete, which further enjoys the already established coordination of local and state agencies as well as the perspectives of academics who over time have been able to observe changes in practices and impacts.

This contributory environment of relevant data makes study of this area a very economic addendum to the larger study framework.

The broader geographic region some together with its timeline of varied, but consistent impact provides a unique opportunity to scale scientific inquiry according to specific objectives and either encompass or restrict future study.

This could contribute to a living, customizable framework attuned to evolving technology as adopted and applied by one of the world's leading fossil fuel producers.

What is at stake

The impacts of natural gas drilling, which increasingly appear related to the unproven practice of hydraulic fracturing, have shown themselves to be manifold and compound; localized and widespread; directly related to geologic destabilization; and, including at least the following:

Contamination of integrated wetland environments as well as deep springs and aquifers:

From the intrusion of nuisance as well as production methane and other natural gas hydrocarbons

From the intrusion of undisclosed, sometimes patented fracturing compounds and other materials such as nano-fibers and their known or unknown physical / chemical reactions

Depletion of surface and ground water:

Through deep formation destabilization as well as drainage

Contamination of terrestrial environments:

From vapors migrating into the ground surface, homes and commercial buildings

All of these impacts create extraordinary, unmitigated and uncorrectable risks to environmental sustainability, diversity and human health. While common sense can establish a relatable basis between observable impacts and drilling activities, comprehensive study should endeavor to determine and quantify causes, effects and nuances of both.

Conversely, continued unexamined production of this 'new oil', which visits so much unacknowledged destruction, will only facilitate the broad scale development of an infrastructure of demand in the way of manufacturing, home heating and transportation.

Unfortunately, unexamined destruction – which I have witnessed myself for nearly a decade - will equally spread, instituting a forced and deeply unwise preference of fossil fuels over accessible, affordable potable water

The devastation of deep, integrated ground water resources cannot currently be corrected, nor can it be economically filtered and distributed... least of all when unleashed within the broader uncultivated environments of rural and wild landscapes.

This presents an intractable economic, regulatory, litigious and environmental mitigation quagmire putting the nation at risk – even perhaps more so than our untenable reliance upon foreign energy resources.

The EPA's hydraulic fracturing study will stand as a cornerstone of what must become a fully appraised, fully integrated and fully balanced national independence policy relative to energy

resources, but also inclusive of necessary resources such as water, air, soil and the vitality of biodiversity.

It is my hope that all entrusted with its development will embark upon this study and learn the implications of this controversial technology.

Despite the irrational predictions of pro-extraction zealots, thorough study is unlikely to condemn or absolve the practice of hydraulic fracturing.

It is very likely, however, to expose key interactions and vulnerabilities relative to the interplay of hydrology, geology, micro-biochemistry; engineering, and drilling technology.

It is further likely to reveal genuine failures in regulatory structure; conflicts of mission; failures of mandate and needed reform of administration, regulation and investigative protocol.

It has the potential to contribute to appropriate and efficient regulation while urging innovation forward as producers more safely seek to develop natural gas as a bridge fuel.

Full awareness of the hydraulic fracturing process is essential to:

Understanding risks that hydraulic fracturing may or may not pose to fresh water sources;

Develop best engineering practices applied toward minimizing recognized risks;

Provide mechanisms of both mitigation and accountability when mishaps occur; and,

Safeguard fresh water supplies as well as industrial growth and investment.

A sound and thorough study, then, can serve as a guidepost and integral component of planning and stability necessary and directly related to the balanced productivity and sustainability of our nation's future.

I have labored relentlessly to draw interested stakeholders toward review of this situation as it continues to degrade. My interest, of course, is in preventing further devastation, which necessitates the careful scrutiny of scientific parameters subtly implicated in observable effects.

The West Divide Creek Seeps of 2004 and 2008 present a very unique opportunity to view the natural, mechanical and regulatory landscape in a perfect overlay of real-time interaction applicable to other Rocky Mountain tight sands geologies.

Supporting this opportunity is a clearly defined and focused question relative to a known and existing impact; an underlying record of existing, quantifying data; and a newly formed, ready framework of multi-agency and landowner cooperation.

I not only invite, but strongly urge the Environmental Protection Agency to include the West Divide Creek region in its hydraulic fracturing study plan (denoted in Appendix F of the Draft as Mamm Creek), if only at a level of cursory review.

Protection is what this environment cries out for, which, of course, dictates an awareness of what is or is not causing so great a degree of continuing harm.

Thank you for considering West Divide Creek, once again in your study plan.

Lisa Bracken – West Divide Creek, Colorado

On-Line Resource Library

Please note: These resources are online and sequentially correspond to the general timeline of events. Some of these links are direct to original source, and others are on my personal Journey of the Forsaken website due to navigational challenges with sources such as the Colorado Oil and gas Conservation Commission.

Maps (Journey of the Forsaken)

Map - Dipping West Divide Creek Seep area

Map - Drilling Area for 40 proposed wells

Timeline of events (Journey of the Forsaken)

<http://journeyoftheforsaken.com/timeline.htm>

COGCC 2004 Divide Creek Seep Order (Journey of the Forsaken)

<http://journeyoftheforsaken.com/dividecreekseep2004cogccorder.htm>

Other COGCC hearing documents (Journey of the Forsaken)

Schwartz: <http://journeyoftheforsaken.com/cogccdividecreekseep2004.htm>

Dietrich: COGCC Order 1V-297

Amos: COGCC Order 1V-298

Preview of Divide Creek Seep documentation (Journey of the Forsaken)

<http://journeyoftheforsaken.com/cogccseepdocs.htm>

East Mamm Creek Area Notice to Operators (stipulations) (Journey of the Forsaken)

<http://journeyoftheforsaken.com/cogccdrillingrestrictions.htm>

Phase I and II Hydrogeologic Study (Garfield County Website)

<http://garfield-county.com/oil-gas/mamm-creek-phase-I-II-conclusions-dr-thyne.aspx>

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Divide Creek Seep 2008 (Journey of the Forsaken)

<http://journeyoftheforsaken.com/dividecreekseep2008.htm>

Analysis of the West Divide Creek Seep

Prepared for Garfield County by Science based Solutions LLC

Author: Geoffrey Thyne PhD., P.G.

<http://garfield-county.com/oil-gas/analysis-west-divide-creek-seep.aspx>

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July 14 – 15 2009 COGCC Hearing in Glenwood Springs

“Record of Proceedings” (Minutes)

<http://cogcc.state.co.us>

click “Hearings”

“July 14-15 2009 Glenwood Springs” (click “Protests – Interventions”)

Audio transcripts of presentations from this hearing includes presentations from
COGCC / Dr. Thyne / Bill Barrett Corp./ EnCana Oil & Gas / Williams Production / S.S.
Papadopoulos & Associates, Inc.

<http://cogcc.state.co.us> click “Library” / under header: “Public Presentations” click Materials
Related to the July 14-15, 2009 Commission Hearing in Glenwood Springs

Other COGCC reports and data

Other data: <http://cogcc.state.co.us> under header: “Area reports and Data”

Click “Piceance Basin” search down for “Water Quality Studies” beneath that is a host of
relevant information on West Divide Creek under labels: “Garfield County” and “Mamm Creek
Field”.

Video gallery (Journey of the Forsaken)

Scroll to nearly the bottom of this sitemap and look for the header “Video”

<http://journeyoftheforsaken.com/sitemap.htm>