

Upper Green River Valley Coalition

Clearing the Haze

How to protect Upper Green's air quality

Agencies slow to act while industrial impacts grow

Until recently, Wyoming's Upper Green River Valley enjoyed some of the nation's finest air quality, with clear 100-mile range-to-range views and crisp air. Natural gas development is sullyng this pristine picture. Recent agency documents paint an even grimmer future.¹ Current emissions from gas drilling are far worse than anticipated. Projected emissions from the Jonah Infill Drilling Project will

- further dirty the skies over the Valley and obscure our once-stunning mountain vistas;
- contribute to unacceptable declines in air quality in nearby national parks and Wilderness areas;
- lead to potential further acidification of alpine lakes that harbor prized fisheries;
- degrade air quality in the "infilled" Jonah gas field to the point that concentrations of ozone and particulates may breach thresholds established to protect human health.

The sluggish response from the U.S. Bureau of Land Management and Wyoming Department of Environmental Quality demonstrates a lack of coordination and regulatory teeth. You don't need advanced degrees to detect the slide in our air quality. Your eyes and nose tell you more than any modeled projection or visibility analysis. We can reverse the decline in this priceless resource if we strike a balance in energy development in the Upper Green. That means firm **caps on emissions, staging development** and **mandatory use of low-emission rigs**. Right now, drilling rates are driven by spiraling natural gas prices. Large energy companies pulled nearly \$4 billion in natural gas from Sublette County last year. Industry can afford to ease up and "do it right."

How gas drilling and production degrade our air

General impacts: Every aspect of the natural gas industry--from exploration and drilling to production and transmission--pollutes the air. The powerful diesel rigs used to drill wells two to three miles under the valley comprise the single most significant source. "Fugitive" gas escapes from wells, compressors, dehydrators, waste ponds and pipelines. While drill rigs have the biggest impact in the short term, compressors operate for the production life of a well and may result in the greatest quantities of emissions over the long haul. Flaring and venting of waste gases also occurs at compressors and processing plants and during pipeline maintenance. Truck traffic produces diesel exhaust and kicks up dust.

Nitrogen oxides (NOx), produced as engine exhaust and flared waste gases, are a leading culprit in the Upper Green's declining air quality. Carbon monoxide emissions also result from combustion. These gases react with sunlight and other emissions to form ground-level

¹ Primary sources for this factsheet include the 2004 Environmental Assessment for the Questar Winter Drilling Proposal (Questar EA); Air Quality Impact Analysis Supplement for the Johan Infill Drilling Project, August 2005 (Jonah Air Quality Supplement); Greater Yellowstone Area Air Quality Assessment, April 2005; and a Dec. 21, 2004 letter from the U.S. Environmental Protection Agency (EPA letter).

ozone, which is implicated in respiratory illness. Industrial activity also releases two other classes of harmful emissions, known as volatile organic compounds (VOCs) and hazardous air pollutants (HAPs), which include carcinogens such as benzene, toluene, ethylbenzene and xylene (collectively known as BTEX), n-hexane and formaldehyde. Particulates are released as road dust and wind erosion of disturbed areas.

These emissions can jeopardize human health and compromise our quality of life. Evidence is mounting that deposition of nitrogen compounds is raising the acidity of the high mountain lakes of the Wind River Range. A likely source of at least some of this contamination is nearby energy development. Government and industry spend \$527,000 a year on monitoring air quality in the Upper Green and surrounding mountains. This is a tiny sum in comparison with the billions in natural gas extracted from Sublette County.

Jonah Infill and Pinedale Anticline: These two Upper Green gas fields are proving to be among the nation's hottest natural gas plays, holding trillions of cubic feet of natural gas made recoverable by new drilling technology. When the BLM authorized these drilling projects, it underestimated the rate of drilling and the horsepower of drill rigs industry would use. As a result, Anticline

NO_x emissions have breached the 693-ton trigger for additional air-quality analysis, which the BLM has yet to complete.² A panel of

“Emissions related to drilling with larger engines and at a faster pace have resulted in actual NO_x emissions approximately 6 to 8 times greater than originally proposed for the Jonah Project.”

--Greater Yellowstone Area Air Quality Assessment

government scientists estimated that Anticline operators released more than 2,700 tons—quadruple BLM's initial estimates—last year.³ Because BLM's 1999 environmental analysis for the Anticline underestimated impacts, the project could be degrading the environment far more than we bargained for.

Similar missteps appear to have happened with the Jonah's environmental reviews. Under pressure from the EPA, however, the BLM performed a supplemental review on air quality impacts from the Jonah Infill, the recently approved plan to drill 3,100 more wells in the already crowded field. The results, released in August 2005, are disturbing, particularly when Jonah impacts are analyzed cumulatively with the other energy projects in the area. For example, Pinedale can expect to see degraded visibility for one-third of the year; ozone and particulate levels in the Jonah will come close to violating human health standards; and deposition of nitrogen, which raises acidity and acts as a fertilizer, could reach levels of concern in the Bridger Wilderness Area.⁴ Both Yellowstone and Grand Teton national parks would see significantly increased haze.

Given BLM's history of underestimating impacts from development in the Jonah and the Anticline, it would be reasonable to expect the Jonah Infill to violate human health standards. Indeed, exceedances of the standard for ozone have already occurred. The air quality monitoring station located on the upwind side of the Jonah registered exceedances of the ozone standards in February 2005,⁵ and again in February 2006.

² Questar EA and EPA letter

³ Greater Yellowstone Area Air Quality Assessment

⁴ For a more complete discussion of the Jonah Infill see the Coalition factsheet, “The Thickening Mess over Wyoming's Upper Green,” available at www.uppergreen.org.

⁵ “Air Quality Impact Analysis Supplement Q & As,” BLM Pinedale Field Office, August 2005.

Achievable solutions: Paced development and emission caps

The stars don't shine nearly as bright as they once did and Fremont Peak's distinctive skyline sometimes gets lost in the haze. How do you quantify the value of the smell of clean, crisp air when you take your first breath outside on a winter morning? Sublette County's economic future and quality of life depend on clear, healthy air, a precious resource that federal land managers could be sacrificing in their haste to accommodate energy companies' business models. Here are some reasonable measures to help restore the safety and clarity of our air:

- 1. Accurate analysis of cumulative impacts**
- 2. Firm emission caps**
- 3. Paced development**
- 4. Adequate air-quality monitoring** and emissions tracking coupled with reliable funding
- 5. Industry can also use the best available control technologies** and other practices to curb its emissions. Examples include:
 - Install equipment to capture gases that are otherwise vented or flared.
 - Cluster development, such as roads, well pads and paths for pipeline and transmission lines, to disturb as little surface acreage as possible.
 - Reduce road dust by bussing rig crews to drill sites, monitoring production wells remotely and transporting condensate and water by pipelines.
 - Use of low-emission rigs that burn alternative or low-sulfur fuels.
 - Reclaim disturbed areas quickly to minimize wind-borne dust.
 - Install control devices on production facilities sooner than required.

The energy industry extracted \$4 billion in natural gas from Sublette County last year and is on track to realize record profits this year. Low

“The Wind River Range lake chemistry data indicates a decreasing trend of acid-neutralizing capacity....Some long-term lakes are storing more nitrates which may lead to eutrophic [oxygen-depleted] conditions.”

--Greater Yellowstone Area Air Quality Assessment

overhead and high commodity prices mean drilling companies can still make good money while doing their utmost to avoid fouling the air, displacing wildlife and disrupting communities. When pushed by concerned citizens and elected officials, some companies adopted flareless well completions last year, before they became required under new rules.

Contrary to industry claims, environmental regulations and citizen appeals have not at all slowed the pace of drilling. The leading factors limiting energy development in the Upper Green is a “lack” of drill rigs and trained personnel. It's time for real regulatory oversight, honest analysis, and coordinated monitoring before the Valley forfeits its healthy, clear air. Firm emission caps and a plan to pace development would help ensure human-health thresholds and visibility standards are not breached.

For more information: see www.uppergreen.org, or contact

Linda Baker, Upper Green River Valley Coalition, 307-367-3670, linda@uppergreen.org

Peter Aengst, Wilderness Society, 406-586-1600, peter_aengst@tws.org

Bruce Pendery, Wyoming Outdoor Council, 435-752-2111, bpendery@pcu.net