

Directional drilling's time has come

Casper Star-Tribune op-ed

March 12, 2005

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PERSPECTIVE

With the issuance of the Great Divide Draft Environmental Impact Statement, the long debate between supporters of the oil and gas industry and the environmental community has again come to a head.

The document supports the drilling of a large number of oil and gas wells over the next 20 years across a broad swath of southern Wyoming, including such contentious Red Desert areas as the Atlantic Rim and Adobe Town. To the industry and the economy of Wyoming, and indeed the nation, this represents a huge opportunity. However, others fear the specter of vast gas fields sprawling across formerly untouched lands.

To be sure, the BLM is under pressure from many directions. The usual mitigation measures have been put in place. Nevertheless, the agency is pressured by an administration in Washington to maximize the development of oil and gas on federal lands. While the Draft EIS acknowledges "Conventional oil and gas and CBNG [coalbed methane] development activities would be the primary cause of surface disturbance and related aspects to soil resources, water quality and watershed health," the resulting document provides for the drilling of almost 9,000 wells, one well per drilling pad, resulting in the disturbance of more than 55,000 acres.

However, this amount of surface damage is completely unnecessary. There is a better way, a way that allows the full development of our oil and gas resources with a greatly reduced impact to the environment. It can be done with currently available technology at little additional cost. This "way" is the use of directional drilling from multi-well pads.

The use of directional drilling has grown steadily, currently involving more than 40 percent of the wells drilled in the United States. Wells have been drilled to targets over five miles from their surface locations. Drilling rigs now routinely reach targets a mile or more away laterally. Directional drilling is no longer a specialized technology, but is one utilized daily by the oil and gas industry.

The drilling of many wells from a single surface location, as set forth in the Western Heritage Alternative, is likewise an accepted method. Perhaps the best-known example of this multi-well pad technology is being utilized by Questar in their development of the Pinedale Anticline in western Wyoming. Here the company is drilling 16 wells from a single drill pad, each draining an area of 20 acres out of a 320-acre plot. The company has eliminated 15 well pads for every half section of land, bringing the land disturbed on the surface from 60 acres to 14, a reduction of 77 percent. It takes little imagination to

realize the impact of a 77 percent reduction when applied across the entire Great Divide development.

Of course, there is no free lunch. Published sources indicate there is an extra cost of 15 percent associated with directional drilling. Questar reports their approach at Pinedale has increased costs by about 12 percent. Is this cost increase reasonable, and can it be sustained by the industry?

The answers to the above questions are "yes," for many reasons.

First, gas drilling in Wyoming is amazingly profitable. Using economic data for a typical Wyoming gas well, drilling and development costs average 90 cents for each thousand cubic feet of gas produced [mcf]. With current gas prices in the \$4 to \$5 per mcf range, this brings in a net cash margin of \$3 to \$4 per mcf to the producer. A modest 15 percent rise in drilling costs decreases these numbers by a paltry 13 cents, or less than 4 percent.

Second, gas prices continue to rise at a much higher rate than drilling costs. Over the past five years, natural gas prices have more than doubled. This gas price increase easily absorbs the extra few cents required for directional drilling.

Third, federal leases are already a bargain. The royalty on federal leases is 12.5 percent while state leases are 16.67 percent. Royalties on private lands are typically even much higher. This amounts to more than 11 cents per mcf for a typical well. With royalty costs factored in, it costs about the same to drill a directional well on federal land as a conventional well on private land.

Fourth, the industry can afford it. Oil companies' cash flow has doubled over the past five years while exploration and production spending rose by only about 10 percent. In 2003, companies spent more money repurchasing their own stock than exploring for oil and gas.

It is clear that directional drilling and multi-well pads can reduce impacts, but by how much? The BLM could dramatically increase the spacing for new well pads. Using readily available technology, typical gas development pads could be spaced every three miles. The appropriate number of directional wells would be drilled from this pad to drain the surrounding nine-section area. For fields requiring a tighter subsurface spacing, a well pad every mile may be more appropriate.

Under the Great Divide EIS, over 55,000 acres would be disturbed. Routine use of directional drilling from multi-well pads could reduce this number to less than 20,000 acres, thereby protecting over 50 square miles from impacts! In addition, to protect especially sensitive areas, well pads could be offset two to three miles away from their bottom hole locations.

Industry can achieve this enormous reduction in impacts to the land and still make excellent profits. The Western Heritage Alternative provides a reasonable blueprint for

developing oil and gas resources with directional drilling while protecting the lands on the surface. Unfortunately, this plan will not be voluntarily embraced by the industry, which exists to maximize profits to their shareholders. Even this trifling cost increase will be resisted. It is up to the BLM, who, as custodians of our federal lands, are in the best position to protect them.

Perhaps Keith Rattie, CEO of Questar, when describing their multi-well pad development at Pinedale, said it best: "But we think there is a better way -- a win-win for the environment, the community, and (the producer)." Shouldn't this "better way" be applied to develop all of our oil and gas resources?

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