Dismissing high-tech solutions

Geoffrey O'Gara
Dan Whipple
DUE WEST

The oil industry has made enormous improvements in drilling technology over the last several decades, technology that improves resource recovery and protects the environment.

Among these innovations are improvements in directional drilling, which permits a surface rig to drill several wells from one spot, snaking pipe along a sinuous subsurface path to hit a distant petroleum pocket.

An example of the technology's outer edges was offered at a directional drilling workshop sponsored by the Natural Resources Law Center at the University of Colorado. BP Amoco recently drilled a horizontal well from onshore Britain 6.3 miles into the English Channel.

A report from the U.S. Department of Energy's Office of Fossil Energy said, "Smaller, lighter rigs and advances in directional and extended-reach drilling shrink the footprint of oil and gas operations and reduce surface disturbance."

This technology can help solve one big problem associated with petroleum development in the Rockies, the fragmentation of wildlife habitat. According to the report "Drilling Smarter" by the Laramie, Wyoming-based Biodiversity Conservation Alliance, drilling, associated roads and impacts, "can have serious effects even on relatively small, mobile wildlife." The effect on large wildlife, especially predators like bears, is verified by many studies.

Erik Molvar, a biologist with BCA, said, "Directional drilling allows sensitive habitats to be protected. It can move impacts away from sensitive habitats ... Directional drilling should be the primary method of doing business."

And for once the Bush administration, which habitually invents magical technological breakthroughs to avoid addressing environmental problems, agrees. The federal energy plan relies on directional drilling to alleviate the impacts of its expanded oil and gas drilling program.

Plus, Americans love whizbang, high-tech gizmos. Anyone who sits through a semi-technical explanation of directional drilling cannot but agree that this is super stuff.

Why, then, is the industry reluctant to deploy this gee-whiz technology in the Rockies?

BP Amoco engineer Rusty Riese fairly dripped with the disdain that engineers have for the woolly-headed sciences like biology, saying, for coalbed methane, at least, "From a practical and financial point of view, it is wholly inappropriate."

This is not to say that there aren't technical problems. There are. But the ingenious ways the industry has addressed these issues when they come up is one of the things that makes the enterprise so impressive.

The real issue, you've probably guessed by now, is money. Bill Eustes, a professor of petroleum engineering at the Colorado School of Mines, said that directional drilling for oil or gas can cost an additional $10,000 a day beyond the usual cost for a vertical well.

John Moran, a petroleum engineer for EnCana Oil and Gas Company, said that his company "typically sees an increased well cost of $100,000 over a vertical well." That represents about 10 percent of the total cost. Moran has supervised over 300 S-shaped wells in Colorado.

It is cheaper to drill traditional vertical wells. Economically, the directional wells require a big payoff. That six-mile BP Amoco well mined a pay zone of 15,000 barrels a day. A Rocky Mountain well might deliver 50 barrels a day, Eustes said.

But the cost of habitat fragmentation is not calculated into the well costs. It is treated as a "free good" that the industry uses up, lost to the population at large. We haven't done a survey, but we'll wager that there is more oil in the world than there is wildlife habitat. If you incorporated the value of that habitat into well pad spacing, we submit directional drilling would look more economical.

We are not among those people who consider the oil industry the devil incarnate. Its efforts to improve environmental performance have been sincere. They've paid off.

That DOE report mentioned above said, "The industry has come to recognize that high environmental standards and responsible development are good business, and it is demonstrating its commitment to protecting the environment in research and technology investments, policies and practices, and participation in a host of voluntary environmental protection programs."

So here is an environmental problem — habitat fragmentation — for which there is a solution: directional drilling. Simply pointing at the dollar signs and arguing that it is uneconomic, especially when that accounting doesn't consider all of the true costs, does not demonstrate much commitment to environmental protection. In an era when the energy industry has often been painted as rapacious and greedy, the industry would be foolish not to grab this opportunity to win a few environmental gold stars.