

Pinedale Anticline:

Long-term Development Plan

Community

Energy DEMAND

HOW HAVE NATURAL GAS OPERATIONS BENEFITED THE LOCAL COMMUNITY TO DATE?

Every day Sublette County is directly influenced by natural gas development on the Pinedale Anticline through the collected taxes that are used for improved infrastructure and community resources. Companies help send local high school students to the University of Wyoming and Western Wyoming Community College with yearly scholarships to help develop a local workforce that will further contribute to and enhance the Wyoming way of life into the future.

HOW ARE THE COMPANIES INVOLVED IN THE LOCAL COMMUNITIES?

The companies work to be involved in Sublette County by giving back through volunteering time and donating money to organizations that serve the community. The following are some of the organizations that the companies have supported since 2002:

- The Children's Learning Center, Inc.
- Big Brothers and Big Sisters
- Rendezvous Pointe
- Pinedale Fine Arts Council
- Big Piney High School
- Sublette Center
- Green River Valley Land Trust
- Sublette County Sheriff's Office
- Museum of the Mountain Man
- Sublette County Chamber of Commerce
- Sublette County Sexual Assault Family Violence
- Town of Pinedale
- Sublette Hi-Country Senior Citizens, Inc.
- Pinedale Volunteer Fire Department
- Sublette County Rural Health District
- Sublette County Recycling Center



BESIDES GIVING MONETARY DONATIONS, ARE THERE ADDITIONAL WAYS THE COMPANIES HELP TO IMPROVE THE LOCAL COMMUNITY?

All three companies hold their employees and contractors to high standards and encourage them to become active members of the community. The operators regularly give back to the community by volunteering at local events such as Clean up Days, Rendezvous Days and the Winter Special Olympics. It's important to the operators that they continue to positively contribute to the quality of life of Sublette County now and in the future.

Ultra, Shell and Questar will maintain their commitment to the local communities as they continue to operate on the Pinedale Anticline. However, it is difficult for employees and contractors—especially the seasonal, temporary ones—to establish strong roots in the local community due to limited year-round jobs. The operators' long-term management plan will help to minimize the fluctuation cycles that are currently associated with seasonal access and allow the operators to maintain a stable, trained workforce. In addition to creating opportunities for current residents, many of the current seasonal workers may become permanent, active members of the community and further contribute to Sublette County. The operators will work with local community leaders to provide more accurate data, via year-round access, for addressing infrastructure, housing and other needs.

HOW WILL THE DEVELOPMENT OF NATURAL GAS FROM THE PINEDALE ANTICLINE AFFECT THE NATION'S GROWING ENERGY DEMAND?

The Pinedale field was discovered in 1939. Advanced technology and development activity have revealed that the Pinedale Anticline contains an impressive 25 trillion cubic feet of recoverable natural gas, significantly more than originally thought. Due to the tight nature of the rock, more wells are required to recover the resource than originally planned, so Ultra, Shell and Questar are offering a long-term plan that will ensure the field is developed and produced in an environmentally sustainable way. This plan will conserve wildlife, habitat, air quality, and water resources on the Pinedale Anticline while benefiting the local communities.



Consumers, industry and businesses throughout the nation face rising energy prices and tighter supplies of natural gas, most of which is produced here in the United States. The Pinedale Anticline is a world-class natural gas resource; one of the nation's largest, with enough natural gas to supply ten million homes for over 30 years.

Ultra, Shell and Questar currently have limited access which prohibits development in parts of the field for up to nine months each year. Access to the field year-round will allow the companies to more efficiently develop valuable clean-burning, domestic energy resources to meet the country's growing energy challenge.



QUESTAR

Wildlife & LAND USE

HOW ARE THE COMPANIES WORKING TO CONSERVE WILDLIFE?

The Pinedale Anticline hosts a world-class variety of wildlife and the companies are committed to maintaining viable wildlife habitat. The operators regularly coordinate with the Wyoming Game and Fish Department to implement innovative technologies and operational practices that lessen the effect of natural gas operations on the environment.

Questar installed a Liquids Gathering System (LGS) on its leases which reduces truck traffic and human activity in vital habitat areas. Recently, Questar received the Bureau of Land Management's (BLM) Best Management Practices (BMP) Award for its innovative development and implementation of the LGS and multi-well pads. It is estimated that a field-wide LGS including Ultra and Shell acreage would eliminate 165,000 truck trips per year on the Pinedale Anticline. Installing a LGS, in conjunction with year-round access will reduce vehicle and human activity during crucial periods for wildlife in the area.

WHAT STUDIES DO ULTRA, SHELL AND QUESTAR SPONSOR AND HOW WILL THE RESULTS OF THOSE STUDIES AFFECT FUTURE OPERATIONS?

The operators voluntarily fund four ongoing, multi-year wildlife studies. The primary objective of the studies is to understand the interactions between these species, their habitat and Ultra, Shell and Questar's natural gas development and production activities on the Pinedale Anticline.

- **Mule Deer**
 - Study analyzes if industry activity affects winter usage of Mesa
 - Ongoing monitoring of herd populations and migration
- **Sage-grouse**
 - Mapping of winter habitat selection
 - Determine what, if any, influence year-round development has on sage-grouse
- **Pronghorn Antelope**
 - Collect biological data to understand use of habitat in relation to oil and gas development
 - Track the interactions of pronghorn with oil and gas development
- **Habitat and Vegetation Study**
 - Inventory the quality and quantity of vegetation and habitat
 - Used for habitat management and reclamation-restoration efforts

These studies are ongoing and the operators will use the data collected from them to determine how they can better avoid and minimize impacts in the future, as well as proactively implement mitigation techniques to better conserve wildlife and habitat.

WHAT TYPES OF RECLAMATION AND MITIGATION STRATEGIES ARE IN PLACE TO REDUCE LAND USE AND OVERALL FOOTPRINT?

Currently, Ultra, Shell and Questar use directional drilling on multi-well pads, a recognized best management practice, which allows the companies to drill several wells from just one location. Using these practices with year-round access will result in only about 8% surface disturbance on the Pinedale Anticline. The operators are going beyond what is required by regulatory agencies to conserve land. In 2007, they worked through the Green River Valley Land Trust to help secure a conservation easement on the historic Murdock Family Ranch to maintain open space in an area that boasts some of the county's prime wildlife habitat.

The operators focus on avoiding and minimizing surface disturbance wherever possible. Year-round access will allow them to further this commitment to preserve migratory paths by suspending development on the flanks of the Pinedale Anticline and identifying certain areas of No Surface Occupancy.

Where operations do occur, the operators use on-site mitigation activities, including reclamation. Shell received a BLM BMP Award in 2006 for its enhanced reclamation and reseeding program, which has become a standard on the Pinedale Anticline. Shell's work has shown that reclamation can be done in a faster, more efficient manner using new seed mixtures. Year-round access will allow for predictable drilling patterns, reduce the number of unreclaimed pad locations and allow for earlier reclamation at individual pad sites.



Air & Water QUALITY

WHAT IS INDUSTRY DOING TO ADDRESS CURRENT AIR QUALITY CONCERNS IN THE AREA?

In order to address elevated ozone levels sometimes seen in late winter in Sublette County, operators in the Pinedale and Jonah fields are working with regulatory agencies and industry to understand ozone formation and related issues, like modeled visibility impacts. Ozone and visibility impacts can occur through a combination of local emissions, weather conditions, and regional emissions transported via wind. Industry will continue to fund Wyoming Department of Environmental Quality (WDEQ) to monitor air quality. A notification system alerts operators of a potential ozone event so that they can defer non-essential traffic and activities to reduce emissions.

Ultra, Shell and Questar have already implemented several voluntary mitigations that exceed current Environmental Protection Agency (EPA) and WDEQ requirements. The companies are expanding efforts to reduce emissions by controlling older facilities that are not currently regulated, controlling gas-driven pumps ahead of WDEQ schedule, reducing truck trips and increasing control system operating efficiencies by using remote well monitoring. State-of-the-art diesel and natural gas rig engines have already been installed on a portion of the rigs operating on the Pinedale Anticline and year-round access will allow the operators to expand long-term rig commitments across the fleet. Testing on new technology is proceeding so that the operators can evaluate ways to accelerate emissions reduction.

HOW WILL THE AREA REMAIN IN COMPLIANCE WITH STATE AND FEDERAL AIR STANDARDS?

Each company has a slightly different set of operating processes based on current equipment and existing permits. They have upgraded many of their rig engines to reduce emissions and are using lower sulfur diesel fuel. The companies are pursuing testing

of advanced rig engine and catalyst technology that is necessary to reduce the largest share of NOx by as much as 80%. This technology is being developed and field tested for this application.

With a planning framework that minimizes rig moves and LGS that reduces liquids hauling and handling, roughly 450 truck trips will be eliminated each day or about 165,000 truck trips each year at peak production. A field-wide LGS is not feasible without a predictable development sequence provided by year-round access. The Supplemental Environmental Impact Statement (SEIS) provides certainty of access and details committed mitigations to reach air quality goals.

HOW ARE THE COMPANIES MAINTAINING SAFE WATER SUPPLIES ON THE PINEDALE ANTICLINE?

Clean water resources are critical for the wildlife and the residents that call the Pinedale Anticline home. The operators and regulatory agencies currently monitor water sources and are in compliance with all regulations and standards. The companies constantly review their designs and procedures to ensure the safety of the surface and ground water sources.

Ultra, Shell and Questar will continue to improve technology and invest in maintaining water quality.

HOW ARE ULTRA, SHELL AND QUESTAR WORKING TO REDUCE WATER USE ON THE PINEDALE ANTICLINE?

The operators have significantly reduced their overall use of water in operations. The operators recycle and reuse produced water for fracturing operations. This water is piped or trucked for treatment and is reused in the fracturing process. The operators reused three million barrels of produced water in 2007 which reduced trucking and the need for additional water wells.

