Southeast Wyoming Oil Impact Workshop, October 29, 2010

Information about Industry Operations:

- Much of the current interest is focused on an area close to Cheyenne, running south into Colorado and north to about Chugwater, and perhaps from 15 miles west to 30 miles east of Cheyenne. This is an area where the Niobrara formation is believed to have been subjected to the pressures and temperatures needed to create hydrocarbons – a suitable source rock.
- The hydrocarbon is expected to be almost all oil, with very little natural gas.
- At least two operators plan, at a minimum, to keep one drilling rig in steady operations for a year. One rig can drill 16-20 wells in a year. Other operators will have additional rigs running. There are about 120 approved drilling permits in Laramie County. It would not be unreasonable to have 50-60 wells drilled in the next year. ***This experience will be very significant in determining if this play will become a high impact development.***
- One possible design for the layout of wells would be three wells (wellbores) drilled from each pad, in a generally NW-SE direction, with one pad per section (640 acres).
- In North Dakota wells are being drilled and completed in two formations, the Bakken and Three Forks. For SE Wyoming, nothing has been said about potential producing formations other than the Niobrara.
- Drilling a well requires 20-30 days. Completion operations are somewhat intermittent and may span another 45 days.
- Productive wells should have a life of 25-40 years
- Surface casing will typically be set and cemented at a depth of 1,000-1,200 feet, providing secure protection for fresh water aquifers.
- Approximately 7,000' of 7" casing will be set, a little past the point where the well is turned to become horizontal. The horizontal length ranges from 4,000-5,000 feet. Well pads for the long lateral horizontal wells are 6-10 acres, quite a bit larger than well sites have been in the past for other types of wells. This is due the very large (eighteen stage, three million gallon) frac jobs. A job that size would need more than 140 five hundred barrel frac tanks on the location.
- Frac jobs typically take three days. Pumping the frac fluids is expected to be limited to daylight hours, but the pumping equipment does make a lot of noise.
- The water needed for frac jobs must be of reasonably good quality, so it will often be true that municipal water is the best source. The typical quantity, 3 million gallons, is 9.2 acre-feet, and should not present a big problem for most municipal water systems. The quantity of water needed for drilling operations is much less.
- Hauling the required water to the location requires more than 700 loads with 100-barrel trucks, or 550 loads with 130-barrel trucks.
- If water supply becomes a critical challenge, there are technologies that might be economical for reusing water from drilling, completion and producing operations.
- Once a well is completed, much of the location can be totally reclaimed, leaving a much smaller working area. The producing equipment is quite small, presenting very little if any conflict with agricultural operations, including center pivot irrigation systems.

- Exploratory wells will cost $4.5-5.5 million. Cost of development wells should be somewhat lower
- Approximately half of the cost of each well will be subject to sales tax. If that taxable amount is $2.5 million, the local tax revenue per well will be about 3.2¢ per $1, or about $80,000. This includes the local share of the 4¢ tax plus the local option taxes, both general and specific purpose. This is a very rough estimate and the actual amount could be quite different.

Information about Impacts on City, Town, and County Governments:

- Successful wells will require artificial lift equipment. The usual power source is electricity, so there could be a large increase in demand for electric power in the area. That could require expansion of the electric power distribution system, and possibly a new coal-fired power plant, and a rail system for the coal supply.
- Information from North Dakota indicates that one drilling rig in an ongoing drilling program results in 120 full time jobs. Some of these jobs are directly involved with the oilfield operations and some are indirect. However, during the early stages of a play in SE Wyoming, many of the services will come from established oil field centers such as Greeley and Casper. The initial employment in SE Wyoming would be less than the 120 jobs.
- Some oilfield businesses such as trucking, welding and storage are easily accommodated in or near small towns. Some of the large service companies tend to operate from their established locations. If these companies open new locations in SE Wyoming, they are likely to be in the larger communities.
- Once the development wells are in producing status, there would be a permanent workforce needed, but it will be much less than during the height of the drilling activity.
- In North Dakota, a few small towns have doubled or tripled in population. If the SE Wyoming play is successful, the same thing might happen here, if towns have housing opportunities and adequate water and sewer systems.
- Every “boom” seems to attract a few unscrupulous individuals and businesses. Hence there is a need for adequate regulation and enforcement, and for encouraging residents to exercise caution.
- People and companies new to Wyoming and to the area will be unfamiliar with our laws and regulations. Even with a vigorous effort to educate everyone, there will be violations, misunderstandings, and some level of conflict.
- If there is a substantial increase in employment locally, child care could be a problem.
- Workers parking campers and trailers in improper locations are a potential problem.
- Transportation will be a significant impact. If industry and counties create a joint plan, the impacts can be handled much better. We need to be prepared for trucking loads that exceed normal limits for weight and size. Dust is another potential problem.
- There will be impacts on social services, recreation and public health, and new and greater human needs. There are reports from the Pinedale area that are good examples of the kinds of impacts that can occur. Getting good data, baseline as well as ongoing, is important for understanding these impacts.

- If there is a big boom, all local employers will be impacted by the competition for workers. Wages, especially in the minimum wage range, are likely to increase.
- There could be a need for an EMT station at a rural location. Be prepared for an increased need for emergency services.
- There may be a need for more law enforcement. There may be more drug and alcohol problems.
- There could be a problem with people who come to the area without any solid job prospects. These people may have little or no means to support themselves and may seek support from community resources.

Advice/Suggestions for Addressing Impacts:

- Maintain a central list with names and contact information for all operators, service companies, regulators, government officials.
- Investigate possible legislation to provide for a state loan fund to address impacts, with the pay back to come from the delayed gross products tax revenue.
- Keep up to date on current and anticipated future revenues – understand the revenue picture thoroughly at all times.
- Have the industry hold a press day, including tours of well locations.
- Industry is being asked to participate in a variety of informational meetings. It would help industry if this can be consolidated into fewer meetings.
- Industry welcomes suggestions on the hot button items – roads, water, landowner relations. It may be good to form committees to address specific areas of concern.
- Consider using social media as a way for industry to provide updates on current developments.
- Local government could take the lead in providing information to the public. The better the level of public understanding, the fewer problems there will be. Local government can also be the catalyst in getting all the players involved in the communications effort.
- If there is a significant increase in new infrastructure, and new housing, maintain current development standards – do not reduce or relax your requirements.
- Employers need to make sure their employees understand that higher paying oil boom jobs have a history of often being short-lived.
- Work with industry to make sure that sales transactions occur in the impacted counties as much as possible, so that sales taxes are credited to those counties.
- If there is a big increase in the demand for housing, encourage that some new housing be multi-family. Be prepared for additional commercial development also. Try to avoid overbuilding.
- Be prepared for man camps and do not discourage them. Done properly, they are a very good way to accommodate a short term work force.
- Be prepared to accommodate a need for industrial business sites. Anticipate a need for new zoning actions.

Future Preparatory Work for SE Wyoming Local Governments:

- Monitor activity in the oil play
- Consider forming issue-specific committees if needed
- Consider future workshops if needed