

Comments

Eagle Prospect Exploratory Wells Draft Environmental Impact Statement
Bridger Teton National Forest- Big Piney Ranger District



Chillborne
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250 787 5518

April 28, 2007

Greg Clark, District Ranger
P.O. Box 218,
Big Piney, WY 83113
comments-intermntn-bridger-teton-big-piney@fs.fed.us

Re: Eagle Prospect Exploratory Wells DEIS; File Code 1950.

Dear Sir:

Please allow me to introduce myself. I am a Registered Professional Biologist from Fort St. John in the Province of British Columbia, Canada, who has worked extensively in land use and operational planning in areas where oil and gas industry exploration and development are active. I have a keen interest in the mitigation of impacts in the development of Oil and Gas resources.

My professional experience spans more than twenty years as a public employee and ten years as consultant. I have been involved in the regulation, management and mitigation of the effects of the oil and gas industry on the environment in British Columbia's east slope of the Rocky Mountains (NEBC). Clients for my consulting services have included a variety of Petroleum companies, including Nexen, Veritas, Duke Energy Services, Talisman Energy, Anadarko Petroleum Novagas Canada Ltd & Canadian Hunter Explorations Limited.

My specific experience is with planning and operational practices for deep sour gas plays on east slope of the Rockies, as well as shallower oil and gas plays on the adjacent plains areas. I have considerable experience with evaluating remote exploration programs, have visited remote drilling programs as far away as Ecuador (The Villano Project)¹ and was a co author of The Muskwa-Kechika Management Area Heliportable Drilling Feasibility Study (M-KHDFS)². I was part of the Besa-Prophet Pretecture Plan Phase I (B-PPTP-I)³ Advisory group that documented best available management practices for exploration and development in the Besa-Nevis sensitive area of the Muskwa-Kechika. This area has a semi-primitive designation similar to the area around the proposed Eagle Prospect Wells project. At this time I am Chair of the NEBC Stone's Sheep Science Advisory Committee an industry/interagency research group. My full resume is attached.

I have been asked by the Northern Rockies office of the Wilderness Society to review and comment on the Eagle Prospect Exploratory Wells Draft Environmental Impact Statement (DEIS). I have a keen interest in the management of the environmental impacts of petroleum exploration and development so I have accessed your website and reviewed the documents found there as well as other pertinent information. This letter is to provide my comments on the Eagle Prospect Exploratory Wells DEIS as part of the official administrative record for this project. .

Comment Summary.

The stated purpose of the proposal is to search for and test certain geologic formations for the presence of commercial quantities of natural gas and allow PXP to evaluate through exploration and production

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whether larger-scale development is feasible. My review of the DEIS and my knowledge of drilling and production alternatives in remote locations leads me to believe that the elimination of the Helicopter Access Alternative is a failure to consider a reasonable range of Alternatives and may be contrary to the National Environmental Policy Act and its implementing regulations.

Technology Notes:

Innovative practices for exploration and production of petroleum are used in various parts of the world to meet logistical and environmental challenges. At the Villano wellsite I visited in Ecuador in 1999, two 5,000 meter horizontal wells were drilled from a 9.4 acre wellpad. This wellpad was constructed and serviced totally by helicopter from a site some 22 miles away in an environment that gets about 15 feet of rain per year. Oil production at Villano was ongoing using above ground oil pipeline constructed without road access to preserve the environmental values of the rainforest.

The Muskwa-Kechika Management Area (M-KMA) in NEBC is planning special management to protect the wilderness and wildlife values while allowing resource development. The M-KMA and the BC Oil and Gas Commission reviewed the potential for the use of helicopters and I was a co-author of that review. Our review of helicopter supported drilling potential (M-KHDFS)² indicates “*In a general sense, there does not appear to be any basis for concluding that heliportable drilling in the MK is not feasible and should not be included in the range of low impact options acceptable to the MK managers*”. (Executive Summary, Page xii).

The report further states “*Within the MK it is clear there are likely to be locations proposed for drilling which will have conventional initial access costs exceeding that of heliportable access, where the environmental consequences (primarily landscape aesthetic unless heliportable operations also pursued) of exploration roads will be high and where the potential economic reward of a prospect may be high. Heliportable drilling would appear to be a feasible, environmentally sound and safe approach to petroleum exploration in these cases.*”

The report also details the availability of heliportable drilling rigs in North America, notably the current availability of helicopters and logistic expertise by Columbia Helicopters of Portland Oregon. During the research for this project we reviewed the Environmental Assessment and Finding of No Significant Impact for the Hunter Creek Well project in the Bridger-Teton National Forest (Hunter Creek)⁴ which was approved in 1992.

Additionally I am aware that drilling technology has evolved considerably in the last two decades with the ability to drill directionally to targets offset from the drilling pad. This ability is identified by PXP. However, the same technology is being used to provide alternates to conventional pipelining techniques where topographic and material constraints make conventional pipelining risky and expensive. The Buckinghorse Project in NE British Columbia is a notable example of where shut in reserves were connected to a conventional gathering system some 2 miles away with a “u shaped” directional drill pipeline with a total length of 3.48 miles. This project has been identified as building on techniques used in Brazil, at costs estimated to be half the cost of a buried pipeline in this very sensitive and unstable environment (Remotely Connected)⁵. This project used the same drilling rigs

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used to directionally drill for offset targets and to drill horizontal wells. Similarly this technology is commonly used in Steam Assisted Gravity Drainage (SAGD)⁶ wells for heavy oil extraction. SAGD includes drilling down then horizontally. SAGD wells have two bores only 16 feet apart paralleling each other for distances of 0.6 of a mile or more.

These technologies could be utilized with the Eagle Prospect Exploratory Wells Project to address issues in this sensitive area of the Bridger-Teton National Forest. As such, I ask that the Bridger Teton National Forest fully review and consider adopting these technologies as a way to lessen some of the surface impacts with the Eagle Prospect Wells project.

Detailed Discussion on the Need for A Helicopter Access Alternative:

According to the Bridger Teton's Draft EIS (DEIS), the helicopter access alternative:

“Would eliminate the effects of surface disturbance associated with road access construction by using a helicopter to transport the drilling rig and other equipment and supplies needed to construct the well pad and drill the exploratory wells” but is dismissed on the basis that, *“the only way produced liquids could be removed would be by using a buried gathering line; however, use of a buried line was eliminated from detailed study.”* (DEIS)

I believe that this dismissal is not supportable.

The Rationale:

“Helicopter-supported drilling costs, which already would be many times higher than the costs for road-supported drilling, would also need to incorporate the considerable cost of designing and constructing a buried gathering line for produced liquids in a landslide-prone area that experiences severe winter conditions.” (DEIS)

This statement does not consider reasonable alternatives to a buried pipeline, should the well be productive and production commence. If the well (s) were shown on testing to be productive a reasonable alternate for transporting sales product and produced liquids by drilled pipeline (possibly at half the cost⁵⁾ to a less sensitive point below the south rim (near FDR 10143) has not been considered. Drilling costs are very predictable and this alternate could be considered as part of the full consideration of helicopter assisted drilling alternate. Using this technique could avoid the upgrading of FDR 30748 in its entirety, avoiding the major environmental risk of working in the identified hazardous Geologic and Geotechnical areas (Figure 3-3 DEIS).

Additional factors cited to contribute to making helicopter-supported drilling not reasonably feasible.

“The proposed access road follows an existing route for much of its length, reducing the cost for road access. Because only one access road and one well pad would be used to drill three wells, the cost of road access could be spread over three wells. However, the cost for helicopter use would continue to accrue during the drilling of three wells, thereby further increasing the cost differential between helicopter- and road-supported drilling as more wells are drilled from the same well pad.” (DEIS)

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This factor apparently overlooks the major cost of helicopter supported drilling is in mobilization and transport of the rig and these costs would be amortized over the three wells. While not documented, the full cycle cost differential of road building and reclamation in geologically hazardous terrain to helicopter supported operations appears to have been overestimated due to unfamiliarity with helicopter projects.

“The proposed project is located within several miles of residential subdivisions. Even if a controlled flight path were established for helicopter operations, the noise from frequent helicopter flights would be a considerable intrusion into the rural lifestyles of nearby residents. The disturbance to wildlife caused by noise from helicopter use would also be considerable.” (DEIS)

While these issues are of concern, the Hunter Creek Project,⁴ a helicopter access exploratory drilling proposal approved by the Bridger Teton National Forest in 1992, appears to have found solutions to similar issues and identifies that the majority of helicopter activity would occur over a 10 day period for deployment of the rig and a similar 10 day period for dismantling the operation once drilling is completed a shorter period than road construction and use. Use of Helicopter access may allow for drilling activities for all three wells to be completed continuously in a shorter time frame. Also, a question that the Forest Service needs to answer through this EIS process is not whether helicopter access would cause some disturbance to wildlife and nearby residents but how this disturbance compares in time length and impact with the disturbance associated with the proposed action and upgrading/building of a major access road into this part of the Forest. A detailed consideration of a helicopter alternative is necessary to provide an acceptable level of information to reasonably assess the impacts of this alternate. Thus, the Forest Service needs to include this information in the Eagle Prospect EIS and develop a full helicopter access alternative that fully considers these concerns.

Exploratory wells have a low likelihood of success, require significant expenditure, and involve uncertain subsurface conditions. Risk management is an important consideration for exploratory wells. A number of risk and cost factors would be difficult to control for helicopter-supported drilling, making helicopter use even less reasonable and less feasible. These factors include response to potential well control problems (such as a loss of circulation or well blowout), a medical emergency, or a wildland or operations fire. (DEIS)

Exploratory wells are prime candidates for helicopter alternatives as the environmental risk of building roads in sensitive geological terrain, road impacts on wildlife and social costs of increased access are avoided for a speculative exploratory endeavor. The M-K HDFS² addresses the operational issues of well control, medical emergency and fire and a detailed consideration of a helicopter alternative with this background would likely address these concerns sufficiently. On balance addressing known environmental impacts of road construction in identified geologically hazardous areas may be superior to potential risks of accidents that are uncommon in the highly efficient drilling industry. Thus, the Forest Service needs to carefully review this information and develop a full helicopter access alternative as part of the Eagle Prospect EIS that fully and accurately evaluates these concerns.

“The successful completion and testing of the Eagle Prospect could be jeopardized by not having adequate supplies or facilities on-site during well completion and testing. For example, the

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sophisticated computer operations trailers used to monitor well stimulation would be infeasible to transport by helicopter or OHV and set up onsite. (DEIS)

Helicopter supported drilling was carried out flawlessly in the Amazon jungle hundreds of miles from reliable sources of supplies. Columbia Helicopters has shown us how logistics planning ensures this concern is not greater for helicopter supported projects than conventional projects; in fact it may be less of a concern. The Geophysical exploration programs employ the most sophisticated computer technology and routinely transport their computer equipment by helicopter. The large helicopters used can move all truck sized computer trailer units. A detailed consideration of a helicopter alternative should show that the concerns are easily overcome.

“In addition, water used for drilling, well completion and stimulation would have to be supplied from water well for helicopter-supported drilling operations. However, it appears that several different surface water and groundwater sources would need to be used to ensure adequate water supplies for the proposed project without noticeable impact to any source. All water sources used, other than a well drilled on location, would require use of a road to haul water to the drill pad or a helipad at the source. Transporting even a portion of the water needed to the drill pad by helicopter would require considerable helicopter use. (DEIS)

Small drilling rigs of sufficient size to drill water wells are commonly transported by helicopter. A helicopter alternative would allow the drilling and testing of the water well or wells to establish water supply in advance of main drilling operations so the proper evaluation and permitting can be completed by Wyoming State Engineer’s Office (WSEO). The commitment to use a closed drilling system as identified on page 2-9 of the Chevron Hunter Creek project⁴ would ensure that water needs were minimized. Logistics planning and water storage on site (storage tanks at the site are already identified as a possibility for produced liquids) would ensure the water supply was available. Additionally if some water transport by helicopter was required (as has been done in the Ladyfern development in NEBC where ground access was only available in winter) the source of water could be from a remote source outside the national forest where water is more plentiful and impacts on the forest environment less. This water could be trucked to a suitable staging area on either Hwy 181-189 or FDR 1043, reducing environmental impacts in the National Forest. The payload of the Chinook helicopter supplied by Columbia helicopters is 22,500 lbs, this would allow the transport of nearly 2000 gallons at a time if necessary. Even larger MI-26 helicopters are being used in Canada’s petroleum industry today (Airborne Energy Solutions)⁷. This larger helicopter, available for lease, has a payload of 20 tons nearly 4000 gallons more than a full 100bbl tank or a standard solid-body truckload.

A detailed consideration of a helicopter alternative would document these above described options for meeting the water supply needs. Thus, the Forest Service needs to include this information in the Eagle Prospect EIS and develop a full helicopter access alternative that more fully analyzes the logistics, possibilities, possible concerns, and possible relative benefits including contingency planning of provision of water using helicopter support.

“The increased requirements associated with 24-hour on-demand helicopter service would add a substantial cost to the drilling operations, and services would still not be available when no-fly atmospheric conditions (bad weather, high winds, or at night) exist. Although 24-hour service would

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be available for assistance in a medical emergency, reliance on a helicopter for response to a fire could reduce the effectiveness of initial attack and increase the amount of time required to bring in equipment to build fireline. Initial attack for a wildland or operations fire could be limited based on the ability of the helicopter to land where needed. A functional access road would likely provide increased opportunity for ground attack and fireline construction by available crews and equipment. Additionally, the helicopter could be diverted from project operations for local firefighting use in another area. Considerations associated with fire suppression are significant because the proposed project would be located within several miles of residential areas. (DEIS)

Most initial fire attacks are in fact helicopter operations and the availability of large helicopters to transport fire equipment and crews would likely enhance fire response rather than decrease it. A detailed consideration of a helicopter alternative should address these concerns.

General Concluding Comment:

The dismissal of the helicopter alternate focuses the DEIS on one potential wellpad due to a suitable site in proximity to FDR 30748. A detailed consideration of a helicopter alternative provides the flexibility to consider alternate wellpads that may have superior characteristics geologically for exploring the prospect with directional drilling and also be superior in addressing wildlife, environmental, visual and land use concerns. In my opinion the failure to provide a detailed consideration of helicopter alternatives has constrained the DEIS unnecessarily and requires reconsideration.

A handwritten signature in black ink, appearing to read 'Brian Churchill', with a long horizontal flourish extending to the right.

Brian Churchill, R.P.Bio.
Chillborne Environmental
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Cc: Governor Dave Freudenthal
Regional EPA Administrator Robbie Roberts

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Citations:

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2. Muskwa-Kechika Management Area Heliportable Drilling Feasibility Study Prepared for: BC Ministry of Sustainable Resource Management, Muskwa-Kechika Advisory Board, BC Oil and Gas Commission: Randal Glaholt and Lois Pittaway TERA Environmental Consultants; Brian Churchill Chillborne Environmental; Harris Wheeler AAEA Ltd. 2001
<http://www.ogc.gov.bc.ca/documents/scek/MKMA%20Heliportable%20Drilling%20Feasibility%20Study.pdf>
3. Besa-Prophet Pre-Tenure Phase I; August 2002, Ministry of Sustainable Resource Management, Victoria BC <http://srmwww.gov.bc.ca/rmd/srdb/mog/docs/bpptp-Phase1-Aug02-Final.pdf>
4. Chevron U.S.A. Inc. Hunter Creek Exploratory Well Environmental Assessment Finding of No Significant Impact, 1992. Charles G. Jones District Ranger, Jackson Ranger District, P.O. Box 1689, Jackson, Wyoming 83001 FS-6200-28b(4/88)
5. Remotely Connected, Anadarko Digs Deep to Circumvent A Treacherous Gorge Crossing, M. Smith, December 2004, New Technology Magazine. <http://www.tabpi.org/2005/f9.pdf>
Anadarko press release
http://www.anadarko.com/investor_relations/news_release_detail.asp?selectedcompany=0&id=650663&compid=0 or Tesco Case Studies
http://www.tescocorp.com/data/1/rec_docs/453_05%20CS%20050331-TD-CDS%20Web.pdf
6. Guide to SAGD (Steam Assisted Gravity Drainage), Centre for Computational Geostatistics (CCG)Guidebook Series Vol. 3<http://www.uofaweb.ualberta.ca/ccg/pdfs/Vol3-IntroSAGD.pdf>
7. Airborne Energy Solutions. Hanger #1, Whitecourt Airport Whitecourt, AB T7S 1P1 **Toll Free 1-888-496-3222** Phone: (780)778-3080 Fax: (780) 778-6652 MI26 Picture taken April 21,2007





BRIAN CHURCHILL, B.Sc., M.Sc., R.P.Bio.

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SUMMARY:

Brian Churchill is a Registered Professional Biologist (#128, 1988) in the Province of British Columbia with extensive experience in Wildlife, Wildlife and Fish Habitat and Land Use in Northern British Columbia. Brian's experience includes 20+ years as a management/habitat biologist/section head with BC Fish and Wildlife and ten years as an independent consultant.

Education:

- Bachelor of Science in Biology with specialization in Terrestrial Ecology and Physical Geography, University of Victoria.
- Master of Science Faculty of Forestry (Wildlife Management), UBC.
- Canadian Environmental Assessment Act Training
- Applying DNA Methods to the Study of Wildlife Distribution and Abundance.

Professional experience includes:

- Chair NE BC Stone Sheep Science Committee *Research and Inventory project, ILMB.*
- Integrating First Nations Values in Land Use Planning, Wildlife and Industrial Development *MOELP (Peace Region) 1985-1997 Consultant 1997-2007*
- Management/research of Populations and Habitat of Moose, Elk, Caribou, Mountain Goats, Grizzly Bear, Birds, Stone and Bighorn sheep Deer and a emerging list of Listed Species, *MOELP (Peace Region) 1985-1997 Consultant 1997-2007*
- Wildlife Habitat Connectivity and Conservation of Peace River Lowlands, A Conservation Plan For The Security Of Wildlife Habitat *Peace Habitat and Conservation Endowment Trust 2002-2003.*
- Pre-Tenure Planning for Oil and Gas Tenures (Upper Sikanni Management Plan, Besa Prophet Phase 1 and four results based Pre Tenure Plans, Sulphur/8 mile Plan), *MOELP (Peace Region) 1977-1997, Consultant 1997,2001-2007)*
- Habitat assessments for forest planning *Slocan/BC Timber Sales 2004*
- Heli-drilling Suitability Assessment *Muskwa-Kechika Trust Fund 2002*
- Environmental Management of Industry (Oil and Gas, Forestry, Coal Mining, Agriculture) in North-eastern British Columbia including the Muskwa-Kechika *MOELP (Peace Region) 1977-1997, Consultant 1997-2007.*
- Oil and Gas Regulation and Environmental Management for Roads, Leases, Pipelines, *MOELP (Peace Region) 1977-1997*

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- Mitigation of Wildlife Impacts Oil and Gas Proposals (Roads, Leases, Pipelines), MOELP (Peace Region) 1977-1997 Consultant (1997-2007).
- Land Use Planning, Land and Resource Management Plans (Ft. Nelson, Ft. St. John & Dawson Creek) MOELP (Peace Region) 1992-1997.
- Planning, facilitation and coordination (Co-ordinator Muskwa-Kechika Advisory Board) Consultant (1998-2000).
- Expert Witness s (Wildlife and fish habitat, pesticides, ecosystem, vegetation) Consultant (1997-2007).
- Habitat Assessments for Pesticide applications Consultant (1997-2007).
- Wildlife habitat model and assessment reports (moose, elk, bison, caribou, mule deer, mountain goat) Consultant (1997-2007).
- Fish habitat assessments, MOELP (Peace Region) 1977-1997 , Consultant 1997,2001
- Terrestrial Ecosystem Mapping (TEM) projects. MOELP (Peace Region) 1977-1997 Consultant (1997-2007)
- Wildlife and Fish Habitat Protection MOELP (Peace Region) 1977-1997
- Wildlife Habitat Enhancement MOELP (Peace Region) 1985-1988(full time) 1988-1997.
- Vegetation Sampling for Wildlife Habitat 1974 - 1977 East Kootenay. 1981-1997 Peace Region) MOELP, Consultant (1997 -2007.
- Contract Management and staff supervision MOELP 1979-1996.
- Liaison with First Nations MOELP 1992-96, MK Board 1998-2000 Consultant 2001-2007

Managerial Experience:

- Board of Directors, Association of Professional Biologists 2001-2007
- Councillor, College of Applied Biologists of BC 2003-2007
- Principle and project manager of Chillborne Environmental from 1997 to Present.
- Councillor, City of Fort St. John, 1996--2004
- Wildlife and Habitat Section Head Ministry of Environment 1987-1997, Responsible for program delivery and management, supervision of up to nine staff, contract and budget management.
- Board of Directors of School District 60, Peace River North 1987-1992
- Member and often executive member of a number of local conservation organizations, Charlie Lake Conservation Society, Ducks Unlimited, Peace Valley Environmental Society, Peace Habitat and Conservation Endowment Trust, North Peace Rod and Gun Club, Chetwynd Environmental Society, North Peace Naturalists.

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EDUCATION:

M.Sc.

Faculty of Forestry, University of British Columbia

Discipline: Wildlife Management, Course work in Animal Ecology, Wildlife Management, Mammology, Biometrics and Forestry

Supervisors: Dr. F.L. Bunnell Dr. David Shackleton, Dr. Ian McTaggart Cowan

Thesis Topic: *Elk Habitat Selection and Use of Clearcuts in SE British Columbia*, (White River near Whiteswan Lake).

B.Sc.

Faculty of Arts and Science, University of Victoria

Discipline: **Biology/Terrestrial Ecology**

Course work in Animal Ecology, Population Ecology, Plant Ecology, Physical Geography and Physiology. Directed studies in Hibernation of Ground Squirrels

Canadian Environmental Assessment Act Training

Course and Cumulative Effects Assessment Workshop, 2000 Canadian Environmental Assessment Agency, Calgary

DNA Technology

Applying DNA Methods to the Study of Wildlife Distribution and Abundance Course and Workshop, Nelson BC, November 2003; Columbia Mountains Institute, Revelstoke, BC

Statistics

Statistics Refresher Course for Biologists Course and Workshop, Revelstoke May 2004 Columbia Mountains Institute, Revelstoke, BC.