

CH2MHILL PERSONAL COMMUNICATION FORM

Information From: Karen Wuestenfeld

Date: April 4, 2003

Information For: Marko Radonich/CH2M HILL

Means of Communication: telephone; email

Subject: RFI 73 – Sourdough prospect commercial analysis

Future Expansion

RFI 73 – Sourdough prospect commercial analysis

Information Needed: Economic study from BP on the Sourdough Prospects

Level of Detail: Economic study showing the feasibility of Sourdough should the Point Thomson gas cycling project come on-line.

Response: EIS team needs to request this information directly fomr BPXA. ExxonMobil does not have access to the BPXA proprietary economic study.

Status: Closed.

Marko Radonich (CH2M HILL) contacted Karen Wuestenfeld (BP) to request information about the feasibility of the Sourdough development should the Point Thomson gas cycling project come on-line. Ms. Wuestenfeld stated that the only information made public by BP was the 1997 press release and that any commercial analysis would be considered proprietary at this point. The press release provided to CH2M HILL was the same press release referred to in *Petroleum News Alaska* (February 23, 2003) titled “ANWR may be best bet to balance state budget.” The text of the press release and the article follow.



FOR IMMEDIATE RELEASE

March 13, 1997

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BP AND CHEVRON CONFIRM DISCOVERY NEAR POINT THOMSON

BP Exploration and Chevron USA have confirmed an oil discovery on their Sourdough prospect in the southern Point Thomson area, about 50 miles east of Prudhoe Bay on Alaska's North Slope.

Oil was discovered with the Sourdough #2 exploratory well in 1994. The Sourdough #3 confirmation well was completed in April 1996. Current information indicates Sourdough could contain about 100 million barrels of recoverable oil.

"BP and Chevron believe the field could be economically developable," said Eric Luttrell, vice president of exploration and new developments for BP Exploration Alaska Inc. "We are in the process of planning further technical work in the area to determine the extent and economic viability of the discovery."

BP has a two-thirds interest in Sourdough and is field operator. Chevron holds the remaining one-third interest. Further exploration and appraisal options, including a delineation well in the winter of 1998, are being considered.

Sutherlin, Steve. "ANWR may be best bet to balance state budget." *Petroleum News Alaska*. Vol. 8, No. 8. February 23, 2003.

ANWR may be best bet to balance state budget

Lease sale in refuge could lead to \$1.2 billion windfall for state
Steve Sutherlin

PNA Associate Editor

The fastest way to break loose a major piece of oil and gas revenue to balance the state budget may be a lease sale in the Arctic National Wildlife Refuge.

Arguably, ANWR could lead to more money in state coffers, faster than a North Slope gas line. While production royalties are more distant on the horizon, lease sale proceeds might flow into state coffers in time to offset the depletion of the constitutional budget reserve. The injection of ANWR lease dollars could give the state breathing room to get the gas line and other new developments on line for support of the state budget into the future.

Under the expected 50-50 revenue split, Alaska would receive half of the \$2.4 billion the Bush administration estimates a lease sale would bring in. The president's proposed budget, released Feb. 3, calls for Congress to open the refuge to oil drilling and begin leasing tracts to oil companies in 2005.

Speaker of the Alaska House of Representatives Pete Kott told the Resource Development Council's annual conference Nov. 21 there would be an \$800 million draw on the constitutional budget reserve in 2003, leaving, at that rate, about a year and a half reserve in the fund.

Roger Herrera, Arctic Power's Washington, D.C., coordinator, said in remarks to the Resource Development Council in Anchorage Dec. 5 that if a bill with a provision to open ANWR is signed this spring, the first lease sale on the coastal plain could occur before the next election. Economically, there is nothing on the horizon for the state with the immediate impact of ANWR, he said.

"In my opinion, from viewing the politics of this issue, the short-term immediate benefits of ANWR to the state of Alaska far exceed any other issue that's on the agenda of Congress, including the gas pipeline," Herrera said. "The sale could bring in hundreds of millions, if not billions of dollars to the state of Alaska."

U.S. Sen. Ted Stevens says opening the Arctic National Wildlife Refuge to oil exploration in 2003 will be tough, but possible.

"That's our job this year — to see if we can get that done," Stevens told the Anchorage Chamber of Commerce Dec. 16.

EIS and seismic needed

Ken Boyd, a former director of the state's Division of Oil and Gas told Petroleum News Alaska the state might see leasing revenue in three years or so from the date Congress authorizes opening ANWR.

A North Slope gas line needs an energy bill to proceed, and possibly state financial incentives as well, whereas ANWR probably would fly on its own merits, Boyd said, but, he added, once congressional approval is obtained there are a number of other issues to be worked out.

"We've got to think about some things," he said. "Will the whole 1002 area be leased at once?"

Areawide leasing has worked better for the state as opposed to nominated leasing, he said. Areawide leasing allows bidders to lease entire prospects at once.

"You don't cut prospects in half," Boyd said.

Areawide leasing also eliminates the uncertainty of when the next sale will be, he said.

Making the entire exploration area available at once would likely return the highest amount from bids, but there is more to it than just holding a sale. An updated environmental impact statement is needed, for instance.

"I can't imagine you could have a lease sale until you know what the rules are," Boyd said, adding that refreshing the EIS is probably an 18-month process. The EIS could affect the amount of the lease proceeds. "Hopefully, the EIS doesn't produce onerous stipulations that are costly," Boyd said.

After the EIS, the next issue is how and when to gather seismic data on the coastal plain. "Do you lease right now or allow a season of seismic?" Boyd said. "Seventeen year old 2D is all that's out there. Everybody has the same seismic — that's sort of interesting."

Boyd, who participated in planning the shoot of existing seismic data, said there needs to be a strategic plan to approach seismic data gathering.

"I imagine there would be a group shoot — a consortium," he said. "Everyone would have to decide what to shoot, otherwise the players with the most money buy up all the views."

It isn't an automatic assumption that the findings of a seismic program in ANWR will result in higher bids, although 3D almost always benefits lease proceeds, Boyd said.

Fresh 3D seismic could give the companies confidence to make higher bids on more leases, he said, but seismic is a two-edged sword.

"People think 3D seismic makes rocks better," Boyd said. That's not true.

"Sunfish (Cook Inlet) is an example of how 3D seismic can kill a project. It wasn't as good as they thought."

When does the state get the money?

When does the state get the money from ANWR? First Congress must open it, Boyd said. After that, refreshing the EIS could take 18 months, followed by 18 months, more or less, to shoot seismic.

Assuming the feds hold a bonus bid sale, there will be proceeds coming in at the time of the sale, but the money probably won't be delivered in one chunk, Boyd said. In state sales, the state usually gets a 20 percent deposit and then gets the rest when the lease is issued. Delays of six months or more to process leases are common.

Once leases are issued, the government will collect annual rents on the leases, but rentals by comparison to bonus bids aren't blockbuster revenue, Boyd said. The next major income would be the royalty stream, at least five years from approval of exploration. It takes time to drill wells and delineate the finds. Infrastructure must be built to carry the oil and gas to market before royalties puff up state coffers.

Sourdough — ANWR's first oilfield?

The Sourdough prospect lies 50 miles east of Prudhoe Bay, along the western boundary of ANWR's coastal plain. BP Exploration (Alaska) Inc announced a discovery there in 1997.

Some geologists think the Sourdough reservoir extends east into ANWR. If Sourdough is developed, producing wells on state lands might cause a pressure decline, causing oil and gas fluids to migrate across the border from acreage in ANWR.

Sourdough's wells, Yukon Gold No. 1, Sourdough No. 2 and Sourdough No. 3 are on the state's extended confidentiality list, however, BP said in its 1997 press release announcing the discovery that the field might contain about 100 million barrels of recoverable oil.

"BP and Chevron believe the field could be economically developable," said Eric Luttrell, then BP's vice president of exploration and new developments, in the 1997 statement. "We are in the process of planning further technical work in the area to determine the extent and economic viability of the discovery."

Sourdough is part of the Point Thomson unit. As a condition of recent expansion of the unit, the state is requiring development of the Sourdough prospect by 2010. Under the expansion agreement, development drilling in the unit must begin in the unit by June 15, 2006. Seven development wells must be complete by July 1, 2008. Point Thomson output will flow to the

Badami field 20 miles away, bringing infrastructure within 10 miles of Sourdough. Once the lines reach Sourdough they are on the doorstep of ANWR.

By contrast, the KIC well, inside the refuge on Kaktovik Inupiat Corp. lands, is another 80 miles east of Point Thomson. KIC is the only well inside the boundaries of ANWR. Its distance from infrastructure poses a unique transportation challenge.

Sourdough needs a big brother

Sourdough, at 100 million barrels, probably isn't big enough to warrant development by itself, given the distance from existing infrastructure, Bill Van Dyke of the Division of Oil and Gas told PNA, but it could be attractive as a secondary development to a larger field, such as Point Thomson, with a potential 300 million barrels recoverable. The economic equation also depends on what sort of production rate could be expected from the prospect — would it be 20,000 barrels a day or 5,000?

"Once the gas cycling project (at Point Thomson) is on line and the kinks are worked out of it, then it would make sense to look at smaller pools around the edges," Van Dyke said.

Boyd agreed. "The main target is the Thomson sands," he said. The geology of Sourdough has been explored, but less is known about what part of the reservoir may lie to the east, in ANWR. Ideally, the ANWR portion of the prospect would be assessed, and if oil is there, the entire play could be unitized and drilled for maximum recovery from the structure. But the ideal case would require opening the refuge to leasing.

"Sourdough was shot in 3D from stem to stern, but (in the 1002 area), less than 1500 miles have been shot in the whole 1.5 million acres," Boyd said.

The most exciting part of the story may well be what lies across the ANWR boundary. Based on the most recent assessment by the U.S. Geological Survey, most of the oil in the 1002 area lies north of the Marsh Creek anticline, adjacent to Sourdough. The 1998 assessment involved three years of study by 40 USGS scientists, who coordinated work with federal and state agencies, and several universities, the agency said. New field studies were conducted, new well and sample data were analyzed, and new geophysical data were acquired. All 1,400 miles of seismic data collected by a petroleum industry consortium in 1984 and 1985 were reprocessed and reinterpreted.

Sourdough might be the gateway to a great deal of oil, but until ANWR is explored, its contents remain a mystery.

"They say the northwest corner is where the oil is," Boyd said. "I think their science is sound, but it doesn't make it right."

Congress didn't say yes or no to ANWR work

Allen Baker, PNA contributing writer

The new spending bill approved by Congress doesn't include money to start the process that will culminate in a lease sale in the Arctic National Wildlife Refuge. But it doesn't ban spending on such work, either, which the original House blueprint for the bill did.

Nevertheless, nothing is going to get done on the ground until the lawmakers in Washington give their approval to open the coastal plain to drilling.

“The big kahuna is still opening ANWR,” said Cam Toohey, the Interior Department’s top official in Alaska, in a Petroleum News Alaska interview. Interior’s Bureau of Land Management will be in charge of doing the work if it’s approved.

Appropriations bills in recent years have included provisions that barred any spending on pre-lease work in ANWR. Supporters of ANWR didn’t make a big effort to get that language removed, said a staff member for Alaska Sen. Ted Stevens, because it really didn’t have an impact as long as leasing hasn’t been authorized. They saw it as simply a political ploy that played well back home.

This year, U.S. Rep. David R. Obey, a Wisconsin Democrat, tried to insert a similar provision in the 2003 spending bill.

But that language was rejected in the final version of the legislation that was sent to President Bush for his signature, said Chuck Kleeschulte, an assistant to U.S. Sen. Lisa Murkowski.

“The bill is neutral on ANWR. There’s nothing that says you can — and nothing that says you can’t now that the Obey language has been taken out — redirect money for field work in ANWR,” Kleeschulte said.

But there’s no money earmarked for such work either, he noted.

Obey submitted language that would have prohibited spending.” Kleeschulte said. “Once he took that out, it didn’t make the positive occur.” If exploration is approved, “I assume they’ll have sufficient money in various accounts to do this work,” he said. “They might want to begin doing work this summer (on environmental assessments) to speed things along rather than wait until next summer.”

According to Toohey, the process went like this: “In the House conference report for the 2003 budget (basically the House blueprint for a compromise bill), there was a provision that said no dollars could be used for ANWR pre-leasing activities.

“But the Senate conference report said, ‘We do not agree with the House language. And if leasing is authorized by Congress, the BLM may spend dollars for a lease sale in ANWR.’”

The Senate language won out.

But it’s still not really a big deal, since Congress could easily allocate money for new environmental studies and other pre-leasing work if it gets over the big political hurdle — actually approving oil exploration in the coastal plain.

And Toohey made it plain that the Interior Department wasn’t going to get out ahead of their ultimate bosses in the halls of Congress: “It allows us in May, if Congress authorizes ANWR, to do some work. But we are totally dependent on congressional activity,” he said.

“At this point, Congress is in the driver’s seat on whether there will be development on the coastal plain.”