Rentals encourage work

**State sets varying minimum bids, annual rentals for Beaufort, North Slope sales**

By KRISTEN NELSON

The Alaska Department of Natural Resources, Division of Oil and Gas, has developed new terms for its annual fall acrewide oil and gas lease sales scheduled to be held Dec. 7.

As described in sale notices published Sept. 27 for the Beaufort Sea, North Slope and North Slope Foothills sales, the different minimum bids and rental rates seem designed to encourage development.

These lease terms are designed to encourage financially sound, responsible operators to join in the accelerated development of the state’s natural resources," Division Director Bill Barron said in a Sept. 28 news release on the sales.

“‘No brainer’ for US administration

Canadian Prime Minister Stephen Harper rates U.S. government approval of TransCanada’s Keystone XL pipeline as a “no brainer” and a host of influential North American newspapers agree with him.

But the prospect of seeing another 500,000 barrels per day of crude bitumen from the Alberta oilsands flowing into the U.S. seems to have aroused the Kingdom of Saudi Arabia, while established opponents of Keystone are stepping up their fight as the U.S. State Department embarks on a fresh round of public hearings.

Harper, in New York for the United Nations General Assembly, joined the chorus of those making a case for oilsands production to play a major role in meeting the U.S. demand for energy and for offering a palatable alternative to imports from Saudi Arabia, Venezuela and Nigeria.

“It’s hard for me to imagine that the eventual decision (by the Obama administration) would not be to build Keystone,” he said.

But he warned the delays in arriving at a decision are “all

**Explorers up from 5 to 7**

Pioneer, Savant plan North Slope exploration wells; season could beat 1969 record

By RAY CASHMAN

Two more northern Alaska oil companies are planning to drill exploration wells in the coming year, bringing the total of on- and nearshore wells to 34, exceeding the record to date, which was 33 in 1969, when 33 exploration wells were drilled after the discovery of the giant Prudhoe Bay field.

The two new explorers are North Slope producers Pioneer Natural Resources Alaska, which is planning two wells in its Nuna development within the Ooguruk unit (see sidebar to this article), and Savant Alaska, which is looking at a well on the crest of its Red Wolf prospect in the Badami unit.

**Apples to apples**

The Sept. 25 issue of Petroleum News reported that Pioneer Natural Resources was planning to drill two Nuna “appraisal wells” this winter, targeting the Tokok formation.

Both Pioneer and the Alaska Oil and Gas Conservation Commission defined the wells as exploratory, which means they were being drilled to discover or delineate a new pool.

Because the bottom holes of both wells were inside an existing producing unit, Petroleum News initially elected not to...
ON THE COVER
Rentals encourage work
State sets varying minimum bids, annual rentals for Beaufort, North Slope sales

Overstating the case?
NRDC commissioned report says that TAPS low flow issues can be easily solved

Explorers up from 5 to 7
Pioneer, Savant plan North Slope exploration wells; season could beat 1969 record

SIDEBAR, Page 1: Apples to apples

Escopeta runs into problems drilling upper Cook Inlet well
Harper calls Keystone approval a ‘no brainer’ for US administration

ENVIRONMENT & SAFETY
6 Aiming to increase Badami production
Savant preparing for another year of development work at the easternmost producing field on the North Slope of Alaska

10 Taking a look at NS shale oil potential
The possibility of unconventional oil development in the North Slope’s world-class source rocks raises some intriguing questions

SIDEBAR, Page 11: USGS starts NS unconventional resource assessment

17 US oil and gas rig count up by 6 to 1,991

EXPLORATION & PRODUCTION
6 Aiming to increase Badami production

10 Taking a look at NS shale oil potential

FINANCE & ECONOMY
5 Land tops production royalties
Think tank urges Western Canadian provinces to rely more on land auctions, less on royalty-raising schemes

SIDEBAR, Page 5: Alberta land tops C$3 billion

PETROLEUM NEWS
WEEK OF OCTOBER 2, 2011
Petroleum News
North America’s source for oil and gas news

GOVERNMENT
4 Hollis French looks to Norway as model
Anchorage Senator calls for state investment in oilfield developments; says Alaska’s oil and gas production tax is not too high

8 Alaska leaders make ANWR case — again
Congressional hearing focuses on coastal plain as a source of jobs, energy and revenue; critic calls it ‘kowtowing’ to industry

LAND & LEASING
15 DOG turns down Cohoe unit application
Division says unitization of some Aurora Gas leases around the Cohoe well on the Kenai Peninsula would not benefit the state

NATURAL GAS
7 Panel discusses gas storage, LNG imports
Construction on schedule for CINGSA gas storage facility; Cook Inlet utilities still expect some imports of LNG will be required

14 Canadian gas producers face tough times

PIPELINES & DOWNSTREAM
9 Exxon signs deal for two new tankers
Double-hull ships to replace two aging tankers hauling Alaska oil; construction agreement with Pa. shipyard worth $400 million

12 Low volumes complicate Alyeska operations
Barrett tells Alaska Oil & Gas Congress pipeline can handle low-flow issues, but lower volumes mean higher chance of shutdowns

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SIDEBAR, Page 6: Aiming to increase Badami production

SIDEBAR, Page 11: USGS starts NS unconventional resource assessment

SIDEBAR, Page 5: Alberta land tops C$3 billion

SIDEBAR, Page 15: DOG turns down Cohoe unit application

SIDEBAR, Page 12: Low volumes complicate Alyeska operations
**Alaska - Mackenzie Rig Report**

**Alaska Rig Status**

<table>
<thead>
<tr>
<th>Rig Owner/Rig Type</th>
<th>Rig No.</th>
<th>Rig Location/Activity</th>
<th>Operator or Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North Slope - Onshore</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doyon Drilling</td>
<td></td>
<td></td>
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<tr>
<td>Doyon 1270 UE</td>
<td>16 (SCR/TD)</td>
<td>Prudhoe Bay Z-65</td>
<td>BP</td>
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<tr>
<td>Doyon 1000 UE</td>
<td>16 (SCR/TD)</td>
<td>Prudhoe Bay 5-090H</td>
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<tr>
<td>Doyon 12000 LEID</td>
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<td>Alpine, Maintenance ConocoPhillips</td>
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<td>AC Mobile</td>
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<td>Kuparuk Standby ConocoPhillips</td>
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<td>CSM 7000</td>
<td>Arctic Wolf #2</td>
<td>In Nikiski, AK</td>
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<td><strong>Kuskokwim</strong></td>
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<td>Nabors Alaska Drilling</td>
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<tr>
<td>Trans-ocean rig</td>
<td>CDR-1 (CT)</td>
<td>Stacked, Prudhoe Bay</td>
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<td>AC Coil Hybrid</td>
<td>CDR-2</td>
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<td>Doyon 1000 UE</td>
<td>2-ES</td>
<td>Prudhoe Bay Stacked out</td>
<td>Available</td>
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<td>Doyon 1000 UE</td>
<td>7-ES (SCR/TD)</td>
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<td>9-ES (SCR/TD)</td>
<td>Has been released by Brooks Range</td>
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<td>Oilwell 2000 Hercules</td>
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<td>DeadRig Point D06-05</td>
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<td><em>Nabors 27-E will be under contract at Oooguruk/Kuna for Pioneer this winter</em></td>
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<td>Nordic Calista Services</td>
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<td>Superior 700 UE</td>
<td>1 (SCR/TD)</td>
<td>Prudhoe Bay Drill Site H-04B</td>
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<td>Prudhoe Bay Drill Site C-108</td>
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<td>Superior 700 UE</td>
<td>19-E (SCR)</td>
<td>Prudhoe Bay Final construction and commissioning</td>
<td>BP</td>
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<td>26-E (SCR/TD)</td>
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<td><strong>North Slope - Offshore</strong></td>
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<tr>
<td>BP (rig built &amp; being assembled by Parker)</td>
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<tr>
<td>Top drive, supercritical</td>
<td>Liberty rig</td>
<td>Endicott SDI for Liberty oil field</td>
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<td>Nabors Alaska Drilling</td>
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<td>Sky Top Brewster NE-12</td>
<td>15 (SCR/TD)</td>
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<td>Aurora Well Service</td>
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<td>Frank’s 300 Ers. Explorer III</td>
<td>AWS 1</td>
<td>Rigging up on Three Mile Creek #3</td>
<td>Aurora Gas</td>
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<tr>
<td>Cook Inlet Basin - Onshore</td>
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<tr>
<td>Atlas Copco RD20</td>
<td>34</td>
<td>Undergoing winterization at W. McArthur River Unit</td>
<td>Cook Inlet Energy</td>
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<td>TSM 7000</td>
<td>Arctic Fox #1</td>
<td>Beluga 224-23T</td>
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<td><strong>Marathon Oil Co. (Inlet Drilling Alaska labor contractor)</strong></td>
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<td>Taylor</td>
<td>Glacier 1</td>
<td>Kena Loop #3</td>
<td>Buccaneer Alaska</td>
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<td>Frank’s 26</td>
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<td>Kenaal KLL4</td>
<td>CINGSA</td>
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<td>Rigmaster STX</td>
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<td>Kenaal Stacked out</td>
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<td><strong>Cook Inlet Basin - Offshore</strong></td>
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<tr>
<td>Chevron (Nabors Alaska Drilling labor contract)</td>
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<tr>
<td>XTO Energy National T320</td>
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<td>Coiled tubing cleanup planned off Platform</td>
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<td>National T320</td>
<td>C (TD)</td>
<td>Title</td>
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<td>Spartan Drilling</td>
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<td>Baker Marine IGC-Skidoff, jack-up</td>
<td>Spartan 151</td>
<td>Upper Cook Wet KLLU1</td>
<td>Escapata</td>
</tr>
</tbody>
</table>

**Mackenzie Rig Status**

**Canadian Beaufort Sea**

| SDC Drilling Inc. | 55DC CANNAR Island Rig #2 | SDC | Set down at Roland Bay | Available |

**Central Mackenzie Valley**

| Akita/SAHTU | Oilwell 500 | 51 | Has left the NAV | Available |

The Alaska - Mackenzie Rig Report as of September 29, 2011. Active drilling companies only listed. TD = rigs equipped with top drive units  WO = workover operations  CT = coiled tubing operation  SCR = electric rig

This rig report was prepared by Marti Reeve

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**Baker Hughes North America rotary rig counts***

<table>
<thead>
<tr>
<th>September 23</th>
<th>September 16</th>
<th>Year Ago</th>
</tr>
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<tbody>
<tr>
<td>US</td>
<td>1,991</td>
<td>1,985</td>
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<tr>
<td>Canada</td>
<td>505</td>
<td>502</td>
</tr>
<tr>
<td>Gulf</td>
<td>31</td>
<td>30</td>
</tr>
</tbody>
</table>

Highest/Lowest

US/Highest | 4530 | December 1981
US/Lowest | 488 | April 1999
Canada/Highest | 558 | January 2000
Canada/Lowest | 29 | April 1992

*Issued by Baker Hughes since 1944

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Anchorage Senator calls for state investment in oilfield developments; says Alaska's oil and gas production tax is not too high

By STEFAN MILKOFSKI
For Petroleum News

A group of about three dozen Alaskans, including state lawmakers, federal, state and local officials, and private sector representatives travelled to Norway at the end of August to study the northern country’s approach to oil and gas development.

“It was” sort of a weeklong, graduate-level seminar in how that country operates,” said Sen. Hollis French, one attendee.

The trip was organized by the Institute of the North, a nonprofit research and advocacy group founded by former Gov. Wally Hickel, and included visits with officials from Norway’s ministries of foreign affairs, petroleum, and finance.

Twelve state lawmakers made the trip:

Sens. Johnny Ellis, Lyman Hoffman, Linda Menard, Donny Olson, Gary Stevens, Joe Thomas, Tom Wagoner and French; and Reps. Bryce Edgmon, Neal Foster, Bob Percman and Paul Seaton.

Larry Persily, the Federal Coordinator of Alaska Natural Gas Transportation project, also attended.

Petroleum News spoke with French on Sept. 23.

FRENCH: We were a member of the Senate Resources Committee, a committee of referral for Gov. Sean Parnell’s oil tax legislation.

The trip, set up the agenda, and did all the logistical work. First of all, hats off to them for doing a fantastic job. There were 30 of us that went over — legislators, state and municipal officials, and private sector representatives. There was a big group of people. Their name for the Norway trip was Exploring the Norway Model.

We were looking at a series of issues, including development of offshore oil and gas; meeting community needs; how does their state-run oil company, Statoil, work? How do they do their government pension fund — their permanent fund — work? How do they meet their internal energy needs? What’s Norway’s role in the Arctic? And so forth.

So it had the potential to be — and in fact was — sort of a weeklong, graduate-level seminar in how that country operates.

My takeaways were several. First — I guess the issue that’s probably uppermost on the minds of a lot of legislators right now — is, What do we do with this oil tax debate that is raging in Juneau? For me it was refreshing to see a country that frankly taxes higher than we have, done so for a long time, and doesn’t have this raging debate because they’re not changing — they’re not budging, they’re not moving.

If you want to do business in Norway — and many, many oil companies do — they know what the rules are going in.

The Norwegians are not going to change the rules, and so the debate isn’t happening. It’s just a business-like arrangement. Everybody knows the rules, and industry is strong and healthy there.

Petroleum News: It seems like there’s a fundamental difference in that Norway doesn’t rely as heavily as Alaska on oil revenues.

FRENCH: That’s a good point. It is a huge difference. Like us, Norway made their big find in 1969. Unlike us, Norway did not eliminate its income tax and other taxes when oil was found. The people of the country of Norway continued to pay their income tax and other taxes when oil was found. The is strong and healthy there.

That left them in a position of having them the luxury of not depending so much on oil wealth.

Petroleum News: Why did you want to go on this trip?

FRENCH: It looked to me like a great opportunity to see how another northern country has managed its relationship with the oil industry and how it’s managed its oil wealth.

Petroleum News: What did you learn?

FRENCH: We learned a lot. The Institute of the North was the entity that organized the trip, set up the agenda, and did all the logistical work. First of all, hats off to them for doing a fantastic job. There were 30 of us that went over — legislators, state and municipal officials, and private sector representatives. There was a big group of people. Their name for the Norway trip was Exploring the Norway Model.

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Petroleum News: Were you spreading it amongst more financial partners. It’s a way to increase the number of projects done, because access to capital is always a problem — we hear that frequently in our conversations with industry people, and it’s an argument we hear from the other side of the oil tax debate: Hey, capital can go anywhere it wants. Well, if the state puts some of its capital up to work, it’ll be done here in Alaska on projects. So I think you’re going to hear a lot about SDFI during the next legislative session.

Petroleum News: Because you’ll be proposing something?

FRENCH: Yes.

Petroleum News: Why is that better than giving tax credits for oilfield developments?

FRENCH: Well, the industry’s telling us that isn’t enough. So if you believe industry, then you think, Okay, we need to do something to make projects more enticing. You know, ExxonMobil’s CEO Jim Mulva came down to Juneau and said, Look, if you reduce oil taxes, here’s a project that’s right on the cusp, this big drill site full of wells would handle a lot more gas. Frankly, the state could take a financial position in that project, make it happen, and thus increase the gas-handling abilities on the North Slope and thus produce more oil.

So that’s a way for the state to help make projects happen. Instead of sort of pushing oil tax money across the table and hoping that that project takes place, you become a financial partner. That’s partly — you get more projects and the projects are in Alaska.

Two, you reap the financial rewards. If see FRENCH Q&A page 15

Hollis French looks to Norway as model
Land tops production royalties

Canadian think tank urges Western Canadian provinces to rely more on land auctions, less on royalty-raising schemes like Alberta’s

By GARY PARK
For Petroleum News

S till reeling from the aftershocks of its failed attempt to hike royalty rates to 2007, the Alberta government — along with neighboring British Columbia and Saskatchewan — is again being urged to rethink its methods of taxing oil and gas development.

The C.D. Howe Institute, a respected independent think tank, has recommended changes it believes would result in greater fiscal certainty for industry and higher returns for the provincial governments, which, under Canada’s Constitution, own the natural resources within their borders.

A report by the institute argues the traditional collection of royalties from oil and gas production, rather than maximizing resource revenues, may actually discourage development of unconventional oil and natural gas.

And it cautions against temptations to stage a revenue grab by taking advantage of the rise in oil prices.

Emphasis on auctions

Instead, it says the provinces could increase their total resource revenues by increasing their reliance on auctions to explore and drill for resources, resulting in more predictable revenues and reducing the “economic distortion caused by royalties.”

The report noted that in response to Alberta’s 2007 royalty hike, the average auction bids for exploration licenses fell 59 percent in average value and the number of bids declined “because producers stopped making bids on otherwise marginal reserves.”

C.D. Howe said that although it is “not able to point to a specific optimal royalty rate,” its analysis does indicate the “superiority of lower royalty rates and the substantial effect that gross royalty rates have on distorting investment decisions.”

As a result, it calls for the provinces to lower royalties on new, conventional oil and gas and shale gas production, regard- less of whether those plays are mature or emerging, such as the shale gas fields in British Columbia and Quebec.

Impact of global downturn

Co-author Bev Dahlby, an economist with the University of Alberta, said that what the Alberta government failed to take into account in launching its first royalty increase in 30 years was the impact of a global financial downturn.

The combined recession and an industry backlog against higher royalties forced the Alberta government to backtrack by reducing rates seven times over two years before effectively returning to square one.

Alberta Energy Minister Ron Liepert, who was not in the post during the royalty overhaul, credited an incentive program introduced in 2009 with restoring “trust” between government and industry and Alberta’s standing as a competitive place for investment.

The C.D. Howe report actually concluded that during the royalty debacle Alberta saw its land sales and other fees in the face of reduced drilling and well counts drop by about the same C$2 billion it anticipated collecting from higher royalties.

Dahlby said auctions of public land are a better way to gauge the speculative value of natural resources and stimulate higher levels of industry activity.

Increasing reliance on land auctions “could make government revenues more predictable and help policymakers better understand that resource revenues are akin to asset sales,” he said.

Dahlby said the current heavy reliance on royalties impedes resource exploitation and development, while a shift in emphasis to auctions would ease govern- ment revenue volatility that results from short-term energy price shocks.

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• Line freezing
• Field machining
• Mobile machining
• Technical bolting
• Valve repairs
• Heat treating hardware and products
• Emissions control services
• Pipe isolation and weld testing
• Pipe repair clamps and enclosures
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Aiming to increase Badami production

Savant preparing for another year of development work at the easternmost producing field on the North Slope of Alaska

By ERIC LIDI
For Petroleum News

Savant Alaska LLC plans to continue its attack on production problems at the Badami unit this coming year by drilling as many as three coil tubing sidetracks on existing wells into the Badami sands.

The goal is to increase output at the eastern North Slope field by bringing new technology to bear on a complex geology of the reservoir. After three years of renewed operations, Badami is producing 1,300 barrels of oil per day for the year, according to Savant Alaska President Greg Vigil. “We just want to increase production, period,” Vigil told Petroleum News on Sept. 21. “We don’t have a production target, if you will.”

Unit operator BP Exploration (Alaska) Inc. brought the local subsidiary of Denver-based independent Savant Resources LLC on as a partner at Badami in mid-2008 in the hopes of re-starting and ultimately sustaining production at the troubled field using horizontal drilling and hydraulic fracturing. ASRC Exploration is a minority partner on the project.

Under a ninth plan of development submitted to the Alaska Department of Natural Resources in late August, BP proposed work on four existing development wells, as detailed plans for an future exploratory well. That plan is still awaiting approval.

Proposed workload for Savant

Savant would be the company to do that work. The plan calls for Savant to stimulate the B1-18A well to “determine the economic viability of additional application of stimulated horizontal well construction in the Badami Sands interval.” Savant would use coiled tubing frac technology, propellant frac technology or hydraulic fracture treatment technology to stimulate the well.

Savant drilled the B1-18 sidetrack in 2010 into the Badami sands targeted in a previous seismic survey. That work could lead to future horizontal wells and a participating area for the Killian Sands Pool.

So far this year, Savant’s Badami wells have produced a total of 9,946 barrels of oil, reducing by about 3,200 barrels the company’s own estimate of the Badami unit’s reserves. But Savant is trying to get back to that level and maintain production at the troubled field.

The plan also calls for Savant to drill an exploratory well from a “remote ice pad to the crest of the Red Wolf (Kekiktuk) prospect,” subject to rig availability. The plan calls for Savant to sidetrack the B1-16 and B1-28 wells using a coiled tubing drilling rig to further evaluate the impact of horizontal drilling on the Badami Sands.

B1-16 and B1-28 are existing wells at the Badami unit.

Finally, the plan calls for Savant to continue producing at all wells currently online, and to continue using a chemical paraffin inhibitor program implemented over the past year to improve productivity and reduce operating expenditures by keeping wells online.

The ninth plan of development would run from Nov. 15, 2011, to Nov. 15, 2013. Over the period covered by the eighth plan of development — Nov. 15, 2010 to Nov. 15, 2011 — Savant produced from the B1-18A, B1-38 and B1-36 wells, but abandoned plans to convert the B1-21 production well into a gas injection well and later shut-in the well.

Contact Eric Lidi at ericlidji@mac.com

Laptops for Foster Kids

Do you have an extra laptop you’d be willing to part with? No, I’m not adding to my own stockpile of consumer electronics or trying to strike it rich on the pawn shop circuit. Rep. Les Gara is working with Facing Foster Care Alaska to collect laptops for foster youth. Laptops are a critical tool for foster youth to keep up with schoolwork and stay connected with family and friends while they are moved to different homes and schools.

If you are interested in donating a laptop, please make sure it is

- fully functional and meets the following standards:
  - In excellent working order;
  - Is no more than 4 years old;
  - Has a word processing program;
  - Does not need any repairs.

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Panel discusses gas storage, LNG imports

Construction on schedule for CINGSA gas storage facility; Cook Inlet utilities still expect some imports of LNG will be required

By BILL WHITE

Researchers/writer for the Office of the Federal Coordinator

Construction is on schedule for an estimated $180 million natural gas storage facility in Alaska’s Cook Inlet region. That local utilities think liquefied natural gas imports still might be necessary in a few years, even after storage smooths the flow of gas supply.

These were among the messages delivered by panelists Sept. 22 at an Alaska State Energy Supply Summit in Anchorage, an adjunct event to the annual Alaska Oil & Gas Congress held earlier in the week.

The new Kenai Peninsula storage site should be ready to take injection of its first natural gas in April 2012, said Colleen Starring, chief executive of Enstar Natural Gas Co., an Anchorage-based utility. Withdrawals could start in November or December that year, as winter demand picks up from utilities such as Enstar, she said.

Enstar’s parent company, Michigian-based Northern Natural Gas, owns 45 percent of the venture, called Cook Inlet Natural Gas Storage Alaska. Iowabased MidAmerican Energy holds a 26.5 percent interest. The partnership is expected to announce soon that two Alaska investors have taken 4 percent stakes each, Starring said. Spending has totaled $57 million so far, with one of the five wells completed, two more under way and a fourth expected to be started during the week of Sept. 26. The wells bore down 4,200 feet, then out horizontally for a total length of 8,600 feet, she said. Gas will be injected and withdrawn via the wells.

First third-party storage

The project is the first independent, third-party-owned storage site in Alaska — some Cook Inlet gas producers own storage they use themselves to ensure steady flows to their customers. Starring said the storage will provide multiple benefits:

It will smooth the seasonal supply-demand imbalance for Southcentral Alaska utilities. At present, Cook Inlet area gas fields produce more gas than utilities need in summer and less than is used in the cold of winter.

It will provide a stockpile of gas — an insurance policy. Starring called it — should local supply be disrupted by a production platform shutdown or pipeline maintenance.

It could store gas piped from the North Slope to Southcentral, whether via a spur pipe off the proposed 1,700-mile mainline linking North Slope fields with the North American pipeline network in Canada, or via an in-state gas line from Prudhoe Bay.

Four customers

Four customers have signed up to use the storage. Enstar wants 5 billion cubic feet of storage initially, ramping up eventually to about 9 bcf. Chugach Electric Association in Anchorage has reserved 2.4 bcf of space. Municipal Light & Power in Anchorage has 500 million cubic feet of space. Homer Electric Association has 125 million cubic feet of storage. The utilities will pay a fee for the storage service, a cost they will pass through to consumers.

In all, the storage capacity will be 11 bcf, expandable to 17 bcf, Starring said. She mentioned talk of investors eventually adding an additional 20 bcf of storage in Cook Inlet, enough to ease for many years the utilities’ worries about reliable supply.

Gas storage is commonly used in the Lower 48 to balance steady-year round gas production with wild seasonal swings in consumption.

But Southcentral generally utilities have avoided winter supply shortages since the first Cook Inlet fields began production in the 1960s. Cook Inlet historically has had so much production that excess supply was exported as liquefied natural gas or fertilizer. But local electricity and heating demand has risen with population growth, and Cook Inlet production has fallen, so much that the fertilizer plant closed a few years ago and the last tanker is expected to sail this fall from the LNG plant, which is closing for lack of reliable, affordable gas supply.

Utilities discussing import

Now a region that has exported LNG for 42 years might become a place that imports it.

Enstar, Chugach Electric and ML&P are studying whether to start importing LNG if local gas demand outstrips local production. In June, they told state regulators they might need their first LNG imports in 2014. In presentations at the Energy Supply Summit, they pushed that date back to 2015.

Starring said the utilities think they’ll need 2 billion to 3 billion cubic feet of LNG imports a year initially. That’s not much — a 10- to 15-day supply at today’s consumption rate. But, utility managers said, the power companies could need those imports to avoid the doomsday option: rolling blackouts for their customers.

No decisions have been made whether to proceed with LNG imports or any of the details, such as where to receive the LNG, how to regasify the liquid, and whether to ship foreign LNG to Alaska or truck it in from the North Slope.

LNG expensive option

LNG is an expensive option for consumers, noted Joe Griffith, general manager of Matanuska Electric Association in Palmer. The region’s electric utilities now pay an average $6.84 per million Btu of gas. Price estimates for imported LNG are $16 per million Btu from Russia’s Sakhalin Island, $12 to $15 for Canadian LNG, and $12 for trucked Nord Slope LNG, he said.

Trucked LNG already is an option being chased in the Fairbanks area. Golden Valley Electric Association and the Flint Hills oil refinery announced in August a $200 million plan to start trucking LNG from the North Slope. Between them they plan to replace the expensive oil they burn now with about 7 bcf a year of gas. Brian Newton, CEO of Golden Valley, said he hopes his utility will save $1 million a month in fuel costs by buying the LNG.

Utilities pursue other options

Meanwhile, the electrical utilities are taking a variety of steps to ease their appetites for Cook Inlet natural gas, especially in light of concerns that production might fall short of demand within a few years.

Two small wind farm projects are in play, one in Anchorage and the other at Eureka Creek south of Fairbanks. The two Anchorage power companies, Chugach and ML&P are jointly building a 183-megawatt gas-fired plant in Anchorage; the three new turbines will burn 25 percent less gas than the turbines they’ll replace, said Tim Posey, ML&P general manager.

The electric companies also are urging the state to pursue a multibillion-dollar Susitna River hydroelectric dam that would meet some of the region’s electricity demand in lieu of fueling turbines with natural gas.

The utilities also are hopeful that revived interest in drilling exploration wells in Cook Inlet will find fresh reserves of gas, and that a North Slope gas pipeline eventually will get built. But those efforts might not deliver gas soon enough.

“My guess is we’re going to import LNG before we ever get additional supply,” Griffith said.

Editor’s note: This is a reprint from the Office of the Federal Coordinator, Alaska Natural Gas Transportation Projects, online at www.arcticgas.gov/Southcentral-Alaska-Gas-Storage-LNG-Imports-Discussed.
Alaska leaders make ANWR case — again

Congressional hearing focuses on coastal plain as a source of jobs, energy and revenue; critic calls it ‘howtowing’ to industry

By WESLEY LOY
For Petroleum News

It’s long been the case that Alaska’s top elected officials, regardless of party, have supported opening the coastal plain of the Arctic National Wildlife Refuge to oil and gas development.

The state’s current crop of leaders again demonstrated that stance during a Sept. 21 congressional hearing to discuss ANWR in the context of jobs, national energy supply and reducing the deficit with leasing and royalty revenue.

The witness list was stacked with supporters of opening the coastal plain to drillers. They included Alaska’s three-member congressional delegation, Gov. Sean Parnell, a prominent resident from a village along the ANWR coast, and a truck driver who hauls freight to the North Slope oil fields.

They said opening the coastal plain could sustain or create scores of jobs and work economic wonders for the state and nation.

Murkowski ’insulted’ Alaska’s senators, Democrat Mark Begich and Republican Lisa Murkowski, each expressed support for opening the coastal plain.

With gasoline prices averaging $3.65 in the lower 48 states and unemployment around 9 percent, Alaska is here to help,” said Begich, according to the text of his testimony. “We can offer relief to consumers at the pump, provide well-paying jobs in Alaska and the Lower 48 and help reduce our $14 trillion deficit.”

Murkowski focused on the Obama administration’s consideration of designating practically all of the refuge— including the potentially oil-rich coastal plain— as wilderness. Such a move, which would take the consent of Congress, would pretty much foreclose the possibility of drilling.

“I find it to be both misguided and, as an Alaskan, somewhat insulting when federal agencies continue to look for ways to lock up additional wilderness in Alaska when Alaska doesn’t want it and when the law says, plainly, ‘no more,’” Murkowski’s written testimony said.

She was referring to the U.S. Fish and Wildlife Service effort to write a new “comprehensive conservation plan” for ANWR. Murkowski argues the Alaska National Interest Lands Conservation Act of 1980 prohibits agencies from undertaking studies for new wilderness areas without congressional authorization.

“When an agency’s response to our North Slope oil fields shows it can be done.”

A villager and a trucker

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“When an agency’s response to our oil and gas activity would compromise what has been described as ANWR’s pristine character.

“We have supported opening the coastal plain to oil and gas development.

It’s long been the case that Alaska’s top elected officials, regardless of party, have supported opening the coastal plain of the Arctic National Wildlife Refuge to oil and gas development.

The state’s current crop of leaders again demonstrated that stance during a Sept. 21 congressional hearing that one panned as “political theater.”

The House Natural Resources Committee and its Republican chairman, Rep. Doc Hastings of Washington state, convened the hearing to discuss ANWR in the context of jobs, national energy supply and reducing the deficit with leasing and royalty revenue.

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“While let’s be honest and say that there will be some consequences to exploring and producing in ANWR,” said Young’s written testimony. “But let’s also be honest and say if we are able to produce it we will arrive in the U.S. in foreign ships that sometimes are not up to our standards. And our environmental safeguards for oil production are much more stringent than theirs are. So if you are really concerned about the environment you should prefer oil to be produced here rather than somewhere else in the world. Just a few short weeks ago news broke of a deal that will partner Exxon and Russia to drill in the Arctic. Do we really trust that Russia can protect the Arctic better than we can?”

Gov. Parnell, a Republican, spoke to the committee via video conference.

“Look at the states doing relatively well in this economic downturn—they are America’s major energy producers,” he said. “And Alaska is one of those states. Yet we are held back from contributing more affordable energy to other Americans by federal regulators who want to keep federal lands off-limits to oil and gas exploration.”

Parnell told the committee the viability of the trans-Alaska pipeline is threatened by declining oil production. His goal is to boost throughput to 1 million barrels a day, well above the current level of around 600,000 barrels.

With modern technology, the governor said, the oil industry’s “footprint” could cover less than 2,000 acres of the refuge, which is nearly the size of South Carolina.

“For most of the year, the coastal plain is frozen. It has low biological activity,” Parnell said. “Experience with other North Slope fields shows it can be done.”

A villager and a trucker

A villager and a trucker who hauls freight to the North Slope fields shows it can be done.”

The U.S. Geological Survey, in a 2005 paper, estimated the coastal plain’s undiscovered, technically recoverable crude oil at 5.7 billion to 16 billion barrels, with a mean of 10.4 billion.

Fenton Rexford, a member of the Kaktovik City Council and a candidate for mayor of the North Slope Borough, told the committee that people in his village support responsible development on the coastal plain.

“I am a life-long resident of Kaktovik and I intend to grow old there,” his written testimony said. “I can compare what ours is frozen. It has low biological activity,” Parnell said. “Experience with other North Slope fields shows it can be done.”

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**NEW TANKERS**

**By WELEY LOY**

Exxon signs deal for two new tankers

Double-hull ships to replace two aging tankers hauling Alaska oil; construction agreement with Pa. shipyard worth $400 million

Exxon Mobil Corp.’s U.S. shipping affiliate, SeaRiver Maritime Inc., on Sept. 29 signed a deal for construction of two double-hull tankers to carry Alaska North Slope crude oil.

The agreement with Aker Philadelphia Shipyard in Pennsylvania is worth $400 million and will create more than 1,000 direct jobs, an ExxonMobil press release said. The new Liberty Class tankers will replace two existing double-hull tankers now working in the Alaska trade. The ships to be replaced are the Kodiak and the Sierra, a SeaRiver spokesman told Petroleum News in July, when a letter of intent with Aker was announced. The Kodiak and the Sierra were built in the late 1970s. ExxonMobil in 2005 acquired the tankers, which were

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**ANWR**

life in Kaktovik was like prior to oil development on the North Slope to the quality of life we have today because of my personal experience.”

He said ANWR development means a continuation of modern life for villagers: running water and flush toilets, a local school, police and fire services. The Inupiat villagers wouldn’t favor development, Rexford said, unless they were confident development wouldn’t hurt their subsistence way of life.

The committee also heard from Carey Hall, a truck driver for Carlile Transportation Systems. He said he works on the “ice roads” hauling freight to and from the North Slope.

Finding new oil in places such as ANWR is crucial, he said.

“The oil and gas industry represents the cornerstone of our business,” he said. “It is not only important to contractors and vendors such as trucking companies but to all our citizens in the state of Alaska and as a nation. It produces jobs, lots of jobs, and we need jobs.”

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**Ships will create jobs**

“This project is a reminder of the importance of America’s energy industry during the current challenging economic times,” Andrew P. Swiger, ExxonMobil senior vice president, said at a ceremony in Philadelphia. Pennsylvania Gov. Tom Corbett attended the event.

Swiger continued: “The jobs and other benefits generated by the construction of these ships will be in addition to the thousands of jobs and millions in government revenue our industry has already created in Pennsylvania through development of Marcellus shale gas, which is also providing new, affordable supplies of energy to fuel our nation’s economy.”

Aker Philadelphia Shipyard will build the U.S.-flag tankers “in partnership with Samsung Heavy Industries, a leader in shipbuilding technologies,” the ExxonMobil press release said.

“All before the first cut of steel, the project will contribute to the ongoing growth and development of the economy and Aker Philadelphia Shipyard,” said Will Jenkins, president of Houston-based SeaRiver. “It will support jobs for the shipyard workforce, for the steel industry, and for countless material, equipment and service vendors such as trucking companies providing new, affordable supplies of energy to fuel our nation’s energy security or reduce gasoline prices, Jenkins said.

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**The critics**

Two witnesses invited by the committee minority had a markedly different view on using ANWR as a tool for creating jobs and fighting the national debt.

Gene Karpinski, president of the nonprofit League of Conservation Voters, said he is fighting for permanent protection of the coastal plain. He characterized the hearing as “nothing more than political theater.”

“Drilling in the Arctic Refuge is and always will be a political hot potato that has been voted on 20 times in the past 30 years, in the House of Representatives alone,” said the written text of Karpinski’s testimony.

“Over and over again, pro-drilling members of Congress have trotted out our nation’s last great wilderness place as a panacea for everything from the budget deficit and high unemployment to providing heat for the poor, relief to hurricane ravaged states, support for our troops and health benefits to coal workers.”

“Throughout it all, every attempt to drill the Arctic Refuge has ultimately failed because of the continued strong support of the American people who see this never-ending political spectacle for what it is—a kowtow to the wealthiest corporations in the world, the only ones who will actually benefit from opening the Arctic Refuge to drilling.”

David Jenkins, of Republicans for Environmental Protection, questioned the idea of the industry disturbing only 2,000 acres. Citing the USGS, he said any oil is likely to be scattered in small pockets across the entire plain.

“Oil development would necessitate a massive spider web of pipelines throughout the area,” he testified. Roxy job projections on ANWR’s unproven oil reserves are overblown, and even a major oil find would be unlikely to significantly improve the nation’s energy

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**Contact Wesley Loy**

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**PIPESLINES & DOWNSREAM**

continued from page 8
The possibility of unconventional oil development in the North Slope’s world-class source rocks raises some intriguing questions

By ALAN BAILEY

Petroleum News

Having purchased about 500,000 acres in leases to the south of Alaska’s Prudhoe Bay field in a 2010 lease sale, Alaska newcomer Great Bear Petroleum is moving forward with plans to drill some wells to test the production of oil direct from the prolific source rocks of the North Slope. This “unconventional” type of oil play, sometimes referred to as shale oil or source reservoired oil, has become a major growth area for the Lower 48 oil industry but is new to Alaska.

At a meeting of the Alaska Geological Society on Sept. 15 geologist Paul Decker from Alaska’s Division of Oil and Gas described the ins and outs of source reservoired oil development, and overviewed the potential for this type of development in northern Alaska.

Unconventional oil resources tend to be distributed continuously across quite wide areas within relatively impermeable rock units that have both generated and trapped the oil, Decker said. This relatively wide, continuous distribution of oil trapped in known oil source rocks renders the geologic risk of finding source oil relatively low compared with the search for oil in the isolated hydrocarbon accumulations of conventional oil reservoirs and traps.

But an unconventional play usually entails a higher engineering risk than a conventional play, because the feasibility of stimulating the rock into releasing oil in viable quantities and at viable rates is often unknown until the play is tested, Decker said. The stimulation of the rock, done using hydraulic fracturing, or fracing, has to be both massive and successful, he said.

Three source rocks

There are three primary oil source rocks on Alaska’s North Slope, each of which may have potential for exploitation in a source reservoired oil play. The oldest and deepest of these, the Shublik formation, is of late Triassic age and consists of interlayered limestones, shales, sandstones and siltstones. Deposited on an ancient marine shelf in a situation where the upwelling of seawater caused an influx of rich organic nutrients, the rock contains large quantities of organic material appropriate to the generation of oil when heated. The Shublik is the presumed source of the oil in the huge Kuparuk River field, Decker said.

The second prime source rock is the slightly younger and shallower lower Kingak formation of lower Jurassic age. This rock consists essentially of shale, formed from clay and deposited on a marine platform in a situation where oxygen depletion in the water enabled the preservation and accumulation of large quantities of organic material. The Kingak sourced the relatively light oil of the Alpine field, Decker said.

Hitting the target? Great Bear Petroleum’s North Slope leases lie over the fairway (colored green) where the late Triassic Shublik formation has been interpreted to have been exposed to subsurface temperatures conducive for oil formation. High hydrogen index values (colored brown) indicate the likely oil-prone source potential of the Shublik in the lease area.

The 2011 APICC Meeting and Conference is focused on developments in Alaska’s process industries, related training and career/job opportunities for Alaskans. As Alaska enters its second fifty years of Statehood, economic vitality will be driven by our people and our resources. Come and learn from Alaska’s business and industry what the future holds.

Register at www.apicc.org
Key factors

The productivity of any of these source rocks in a source reservoired oil play will depend on four key factors: the rock’s organic content; the manner in which the rock has been heated, stressed, deformed at depth; the physical properties of the rock, in terms of the rock’s ability to hold and flow fluids; and the ease with which the rock tends to fracture under stress, rather than bend or flow, Decker explained.

Assessing these four factors in any particular oil play can involve the use of several techniques, including rock sampling and testing from surface exposures and subsurface well cores; the chemical analysis of rock samples; testing the desorption of oil or gas from rock samples; using well log data to obtain information about rock fracture systems and areas likely to be rich in organic material; and the use of sophisticated seismic data analysis techniques to assess how brittle the subsurface rocks are, and the likely orientations of natural fracture patterns, Decker said.

And although the North Slope source rocks have promise as targets for source reservoired oil development, understanding their true potential will depend on drilling and testing, to tease out information about those four key oil productivity factors.

The Shublik

The Shublik, for example, is seen in surface outcrop in the western part of the North Slope and in the Brooks Range foothills but has been penetrated by just two wells on Great Bear’s acreage, in the area thought to be prospective for a source reservoired oil play. However, some years ago a well test in the undeveloped Kemik gas field, in the foothills immediately west of the Arctic National Wildlife Refuge, showed a natural gas flow rate of about 12 million cubic feet per day from the Shublik, a promising indication of the Shublik’s potential. And two wells on the northern side of the Prudhoe Bay field exhibited oil flow rates of 1,100 to 2,500 barrels per day from the Shublik, although oil had probably migrated into those locations from elsewhere, Decker said.

Studies of various indicators of the thermal history of the North Slope rocks point to a zone in which the rocks have at some point been heated sufficiently to generate oil without being heated to the point where all the hydrocarbons would have been baked into natural gas. A plot of this zone indicates that the Shublik would have reached temperatures conducive to oil formation along a swath of territory running west to east under the Slope, a few miles inland, and right under the locations of Great Bear’s leases to the south of Prudhoe Bay. And a plot of what is known as the “hydrogen index,” an indicator of the oil potential of the rock, also suggests that Great Bear’s leases are well located, Decker said.

Eagle Ford analogy

There are also some quite close analogies between the rock characteristics of the Shublik and those of the Eagle Ford shale, a rock unit that has been the successful target of shale oil development in Texas: Both rocks contain similar quantities of organic carbon; both contain organic material appropriate for oil formation; and both contain abundant limestone, brittle enough to readily fractured. The Eagle Ford does contain some regions of relatively high fluid pressure that help push oil into production wells, but if the Shublik has an analogous zone of high subsurface pressure, it has not yet been drilled.

North Slope well log data indicate that zones containing differing rock types within the Shublik are fairly continuous and consistent across wide areas of the North Slope, a feature that should aid with development predictability, as new wells are drilled, Decker said.

Very little is known about the source reservoir characteristics of the lower Kingak formation, above the Shublik, Decker said. However, as with the Shublik, the Great Bear leases appear to be well located, over the fairway where the Kingak has reached subsurface temperatures that are appropriate for oil formation. And there may be potential for the simultaneous development of the closely spaced Shublik and Kingak, as a kind of “shale sandwich.”

The carbon content, temperature and rock thickness distributions of the Hue shale/GRZ also point to the Great Bear leases being in a favorable position for that oil source, Decker said.

Development challenges

However, assuming that northern Alaska source rocks have the appropriate properties for shale oil production, there will be some significant technical and economic challenges along the route to viable development. In essence, hydraulic fracturing involves pumping huge volumes of a slurry of water and sand down a well bore that

USGS starts NS unconventional resource assessment

The U.S. Geological Survey is conducting an assessment of unconventional oil and gas resources on the Alaska North Slope and has scheduled a meeting in Anchorage on Oct. 25 to solicit feedback from the Alaska geological community on the geological framework that the agency plans to use.

Assessing technically recoverable oil and gas volumes from an unconventional play involves very different techniques from a conventional assessment, in which estimates are usually made of the sizes and probability distributions of potential oil and gas prospects.

In an unconventional play, oil and gas resources are assumed to be distributed continuously across a relatively wide area, so that the critical components of an assessment consist of estimating the total area of hydrocarbon source that can be accessed from a single well, and estimating the total ultimate oil or gas production from each well, geologist Paul Decker from Alaska’s Division of Oil and Gas told the Alaska Geological Society on Sept. 15.

The total area of the play is divided into cells, with each cell representing the area of hydrocarbon source accessed by a single well. The statistical range of possible ultimate production from each well is multiplied by the total number of cells in the play to derive an estimate of the potential range of feasible total production from the entire play, Decker said.

—ALAN BAILEY
Low volumes complicate Alyeska operations

By KRISTEN NELSON

The trans-Alaska oil pipeline has been in operation for 34 years and it’s “a great asset,” “in pretty good condition” with “a great workforce,” Alyeska Pipeline Service Co. President Tom Barrett told the Alaska Oil and Gas Congress Sept. 20.

But, Barrett said, he wants more oil moving through the line, which was designed for 1.5 million barrels per day, peaked at 2.1 million bpd in the 1980s and has been in decline ever since, currently moving some 600,000 bpd.

The line averaged 700,000 bpd in its first year of operation, Barrett said. With throughput below where the line started, “you’re in kind of new territory every day.”

That presents operational difficulties, Barrett said, comparing it to running a car at 15 miles per hour instead of its 45-60 mph optimal speed.

Alyeska invested $10 million in a two-year low-flow study completed earlier this year, available on Alyeska’s website (www.alyeska-pipe.com), addressing the implications for the pipeline operator, he said.

Velocity and temperature

“There are two issues … one is velocity and one is the temperature,” Barrett said. “It used to take four days to move a barrel of oil from Prudhoe Bay down to Valdez to the terminal. Right now it takes about 15,” but if rates drop to 200,000 bpd, he said, it will take a month.

Oil goes into the line at above 100 degrees; right now, depending on ambient temperature, it is about 40 degrees when it reaches Valdez.

If the temperature in the line drops below freezing, water in the oil falls out and ice starts to build up. There isn’t much water in the oil, he said, but there’s always some. If ice builds up, especially at low points in the line, that ice could move into strainers and pumps, causing problems.

“We get more wax settlement as the flow declines,” Barrett said, which creates problems because it increases the risk of corrosion, even though Alyeska scrapes the line for wax regularly.

Those are among the problems Alyeska has to handle with reduced flow through the line, and “individually they can be managed … together they really compound,” he said.

Risk of shutdowns

Barrett said it isn’t the risk of leaking oil, but the risk “that we will be shut down more to address these problems.”

Because of wax due to lower flow, Alyeska runs more pigs to get the wax out.

Alyeska had a shutdown in January and “part of the startup issue is we had pigs in the line,” when you start up after a length of time, you push wax and ice, whatever is in the line, “towards your strainers and your pumps. And if you take out a mainline pump with that type of stuff you’re going to be down … for a long while,” he said.

So you run more pigs to address the wax issue, “solving one problem and increasing the risk on the other side.”

“Figuring that out, whether we’re adding launchers-receivers, or just the type of pigs we run, is complex — it’s complicated petroleum pipeline engineering. You have people that can do it, but it is a challenge,” Barrett said.

Increasing the flow

If you increase the flow to the million-
Leading by numbers and example

Outside markets needed, consultant says; next-generation technology could benefit other development; but challenges in short term

By GARY PARK
For Petroleum News

Canada must first secure markets outside North America if it is to have any chance of becoming a global leader in responsible and sustainable hydrocarbon development, says an oil sands report by consulting firm Deloitte.

It says that probably no other jurisdiction with such much resource potential has “anywhere near Canada’s combination of political stability, advanced education, technical prowess and transparency in business dealings.”

“Canada is poised to do for global hydrogen-based energy development what Germany has done for the renewable energy R&D and manufacturing sectors — lead not only by the numbers, but, most especially, by the example of vision and political will,” said the report entitled Gaining Ground in the Sands 2012.

However, Chris Lee, Deloitte Canada’s leader of national energy and natural resources practice, said attaining the strategy will require the industry and government to involve all interest groups in the creation of a single vision.

He said that process started in July at a conference of federal, provincial and territorial energy ministers, adding he is hopeful the election of a majority federal government and the rising importance of the oil sands in the Canadian economy could move those discussions to the next level of a national energy strategy.

The Deloitte report said the Canadian government of Prime Minister Stephen Harper provides an opportunity to encourage pipeline construction in particular that could lead to expanded markets.

Technology development

The report said the oil sands sector is “front and center in terms of influence and long-term energy-related social policy.”

The sector should be “looking to parlay its technology development into a number of enduring values, starting with the technology itself as a home-grown intellectual property of potential application and value elsewhere in the world and also in helping to mitigate and/or eliminate ongoing concerns about health and environmental impacts.”

The prize isn’t simply technology itself but in ensuring that we don’t lose the opportunity to develop important secondary industries and market potential,” Deloitte said.

The report forecast that next-generation oil sands technology could yield more bitumen with less energy and impact and some of those advances could be used in other resource plays.

Among those technologies, it listed SC-SAGD (solvent-cyclic steam assisted gravity drainage) which could unlock the massive bitumen trapped in carbonate rocks and EM (electromagnetic) production of bitumen through the stimulation of reservoirs too shallow for SAGD, but too deep for mining.

Another gain is possible through in-situ upgrading of bitumen into synthetic crude which involves a combustion process that leaves unwanted byproducts underground, while capturing carbon which could potentially reduce water use and fuel gas consumption for steam generation by as much as 80 percent, while increasing recovery factors by up to 50 percent, the report said.

The Alaska Humane Society’s “Adopt-A-Cat” program is a no-kill, non-profit cat shelter currently caring for more than 200 cats and kittens that live cage-free at this facility. We are staffed entirely by volunteers and funded entirely by donations.

The facility is located at 1224 E. 76th Avenue, Anchorage at the back of the complex. For directions to the shelter call 907-344-8808.

Hours of Operation: Monday thru Friday, 7 p.m. - 9 p.m. Saturday & Sunday, 3 p.m. - 6 p.m.

To learn more about the “Adopt-A-Cat” program, please visit www.adopt-a-cat.org.

The sector should be "looking to parlay its technology development into a number of enduring values, starting with the technology itself as a home-grown intellectual property of potential application and value elsewhere in the world and also in helping to mitigate and/or eliminate ongoing concerns about health and environmental impacts."
NATIONAL GAS

Canadian gas producers face tough times

Canada’s share of North American natural gas production has fallen over the past five years from one-quarter to one-fifth and profit margins have plummeted from 10-13 percent in 2007 to 1.3-1.8 percent in 2009 and 2010, according to the Conference Board of Canada.

In a summer 2011 outlook report, the board said that bleak picture is likely to continue over the short term, while medium-term prospects are “only slightly more optimistic,” said board economist Todd Crawford.

He said the “threat that more shale gas will flood the market, coupled with only moderate demand growth” points to average prices of C$3.80 per thousand cubic feet for 2011 that will not climb back above C$6 until 2015.

The report forecasts that drilling activity will remain well below pre-recession levels, especially in Alberta, where output is expected to decline by 20 percent from 2010 levels to 8.1 billion cubic feet per day in 2015.

Strong increases from British Columbia’s shale gas deposits and new output, starting this year, from Nova Scotia’s offshore Deep Panuke project will help slow the decline in production, but not enough to offset the decrease in Alberta.

Not everyone agrees

But not everyone agreed with the board’s assessment.

Mark Salkeld, president of the Petroleum Services Association of Canada, said drilling activity “is not weak — all appropriate and available equipment is working or booked to work and new bigger triple-type rigs are being manufactured to better handle the deeper horizontal wells and lateral sections.”

While there is no doubt that the industry has shifted to oil from natural gas, gas drilling remains strong because of the focus on liquids-rich deposits, he said.

Gary Leach, executive director of the Small Explorers and Producers Association of Canada, agreed the gas sector is in transition, but disputed the board’s finding that Canada’s overall production will “fall indeﬁnitely.”

He said there are already indications that Western Canada’s volumes are stabilizing.

Global markets needed

The board said that unless North American producers can access global markets where demand is strong, the gas price at Alberta’s AECO trading hub will rise to only C$4.20 in 2012 and C$6.14 in 2015, although that would boost revenues to C$54.6 billion from C$34.7 billion in 2011.

Industry spending should increase to C$48.5 billion in 2015 from about C$34 billion this year, while pre-tax proﬁts will increase to C$6.1 billion from C$574 million over the same period, the report said.

The board estimated U.S. production of marketable gas, excluding Alaska and the Gulf of Mexico, will average 6.18 billion cubic feet per day this year, up 25 percent from its 2005 trough, but it expects production increases will slow over the next few years, with the Gulf continuing its decline from peak levels.

It said companies have been forced to drill at least one well for every 640 acres to retain long-term leases on their assets, thus artiﬁcially inﬂating the market-determined level, but it projects U.S. demand will accelerate to a moderate pace over the years to 2015 unless the U.S. slips back into recession or experiences a sustained period of lackluster growth.

— GARY PARK

FINANCE & ECONOMY

Oil up near $82 after EU debt fund vote

Oil prices ticked up nearer to $82 a barrel Sept. 29 after Germany approved a measure to strengthen a bailout fund intended to help Europe overcome its debt crisis.

By early afternoon in Europe, benchmark oil was up 53 cents to $81.74 a barrel in electronic trading on the New York Mercantile Exchange. The contract fell $3.24, nearly 4 percent, to $81.21 per barrel on the Nymex on Sept. 28.

In London, Brent crude for November delivery was up 59 cents at $104.40 on the ICE Futures exchange. Oil rose sharply earlier in the week as Europe appeared to get a better handle on its debt crisis.

“Crude oil continues to ﬂuctuate wildly over the same ground as the sentiment pendulum swings between conﬁdence and pessimism over whether or not the global economy is headed for recession,” said Michael Fitzpatrick, editor-in-chief of The Kilduff Report in New York. Crude oil has fallen about 15 percent since July and is down 26 percent since hitting a high for the year of $113.93 per barrel on April 29.

— THE ASSOCIATED PRESS

continued from page 9

NEW TANKERS

providers across the commonwealth and beyond. Following commissioning, the vessels will join our ﬂeet in supporting our customers and the energy needs along the U.S. West Coast for decades to come.”

Lost to build

ExxonMobil is the last of Alaska’s three major North Slope oil producers to build double-hull tankers. BP and ConocoPhillips already have built new tankers.

Congress mandated a transition to double-hull tankers following the Exxon Valdez oil spill in Alaska’s Prince William Sound in 1989.

The tanker ﬂeet serving Alaska already has fully converted to double hulls. Around 15 tankers regularly call on Valdez, the terminus of the 800-mile trans-Alaska pipeline, to pick up oil for delivery to West Coast reﬁneries. BP and ConocoPhillips operate four tankers each, while ExxonMobil has used three ships. Some tankers also call on Valdez for

continued from page 12

LOW VOLUMES

barrels-a-day target set by the governor, “a lot of these problems fall off from an operating point of view,” he said.

Barrett said he believes “we’re a couple of years behind” where we should be on getting more oil in the line.

When Alyeska started its low-ﬂow study in 2008, the projection for 2011 was 700,000 bpd.

“We’re seeing 600,000 barrels,” he said, adding that he worries that there isn’t the urgency needed to get additional barrels into the line.

The resources are there, the infrastructure is there, it’s what’s stopping Alaska from moving a million bpd, he added.

“The governor did what he could do to make jobs and economic growth with access to resources now off-limits due to government policies.

Contact Wesley Loy at wloy@petroleumnews.com

continued from page 13

OIL SANDS REPORT

Short-term challenges

Delotte also points to challenges faced by oil sands operators over the short-term, including the importance of cost reductions and increased operational efﬁciencies, along with labor logistics.

In addition to industry moves to outsource or partner with third parties for housing, transportation and steam genera-

tion, there are opportunities to collaborate in safety training and environmental measures where all companies are faced with meeting the same standards, but vary their approach and procedures.

The report said the oil sands sector could adopt manufacturing approaches to reduce cycle times (to initial oil or gas production) by 30-50 percent, overall operational costs by 15-20 percent and eliminate non-productive activity (such as recruiting, training, housing and moving people) by more than 50 percent.

Lee said the pressures could build rapidly if the development of oil sands carbonates is proven economic or more upgraders are built, requiring more skilled workers.

Contact Gary Park through publisher@petroleumnews.com
T he Alaska Division of Oil and Gas has denied an application by Aurora Gas LLC to form the Cohoe unit on Alaska’s Kenai Peninsula. In a Sept. 23 decision, the division said the unit application was denied because it is not in the interests of the state or the public.

The lands proposed for inclusion in the unit, located northeast of Sterling Highway, are on the Westchester and Kaliforny Beach Road near Kaslolo on the Kenai Peninsula, include two State of Alaska leases and one Cook Inlet Region Inc. lease. Without the unit application, those state leases would have expired on Sept. 30, 2010, and the CIRI lease would have expired on Aug. 17, 2011.

Cohoe well

The leases include the Cohoe Unit No. 1 well, drilled by Unocal in 1973. In a plan of exploration accompanying its application to form a new Cohoe unit, Aurora proposed re-entering the well by Dec. 31, 2011, to develop a number of the so-called discrete zones. But as of Sept. 9, the company had yet to obtain a drilling permit from the Alaska Oil and Gas Conservation Commission, the division said. Aurora also proposed to obtain 3-D seismic over the acreage.

The division said that while Aurora would benefit from unitization because the leases would be extended, unitization would not “offer equal benefit or protection to the people of Alaska or the state,” and “could deprive the state of the benefits of oil and gas leasing.” Essentially, any of the activities that Aurora proposed carrying out after unitization could equally well be performed on the leases without unitization, thus leaving the state with no overall benefit had unitization proceeded, the division said.

“The Cohoe unit plan of exploration does not demonstrate that unitization will encourage earlier delineation and development of the leases than if these activities were conducted on a lease-by-lease basis, other than to provide Aurora an extension to the leases’ primary terms,” wrote Division of Oil and Gas Director William Barron in the notice of denial for the unitization. (“[Early] drilling operations on any one of these leases would have extended the drilled lease’s primary term.”

In a Sept. 27 email Ed Jones, Aurora Gas executive vice president, oil and gas, told Petroleum News that his company is disappointed with the DOG decision. “We are obviously very disappointed and are considering an appeal,” Jones said.

Bypass play

Unocal would have originally drilled the Cohoe Unit #1 well in search for oil. Aurora Gas has been hoping to investigate the prospect in a classic “bypass play,” seeking natural gas resources bypassed during oil exploration. The gas would typically be located in shallower horizons than the horizon targeted for oil at the bottom of the well.

According to information presented in the division’s denial of the unit application, the Cohoe well was drilled to a depth of 15,683 feet, bottoming out in the West Foreland formation. Drill stem tests were conducted in nine zones at various levels in the well, with those tests, two in the Sterling formation and one in the Beluga formation, showing small amounts of natural gas.

In August 2010 Scott Pfoff, the then president of Aurora Gas, told Petroleum News that Aurora’s first preference at Cohoe would be to shoot some new 3-D seismic over the prospect. Bruce Webb, Aurora Gas manager of land and regulatory affairs, later told Petroleum News that Aurora wanted new seismic because the company did not think that the Cohoe well had penetrated the top of the prospect’s geologic structure.

Pfoff said that Aurora had applied for unitization of the Cohoe leases but that the company was planning to re-enter the Cohoe well using the Aurora Well Services No. 1 drilling rig prior to lease termination, in case the unitization fell through. But in October 2010, after the expiry date of the state leases, Webb said that it had not proved possible to move the rig to the Kenai Peninsula for this drilling because there had been no need for a drilling operation in Aurora’s Three Mile Creek gas field on the west side of the Cook Inlet.
TOTE dedication honors maritime industry legend

Tote Ocean Trailer Express Inc. said Sept. 27 that legendary maritime and Pierce County community leader, Robert P. Magee, was honored Sept. 21 with the naming of Tote Ocean Trailer Express Inc.'s Tacoma terminal in his memory.

The Robert P. Magee Terminal dedication ceremony at Port of Tacoma was attended by about 150 industry and community leaders, extended family members, TOTE customers and employees who gathered to pay tribute to a man many described as visionary.

After Bob's death in November 2009, TOTE employees rallied around the idea of honoring Bob's memory with a tribute. "The terminal was perfect because Bob loved Tacoma. He came out of the vessel department and so spent much of his time at our terminal. Even as the CEO of American Shipping group, TOTE's parent company, you could always find Bob back down at the terminal on a random afternoon or the morning after a ship sailed," said John Parrott, TOTE president.

The Robert P. Magee Terminal name is proudly displayed on signs at each gated entrance to the terminal, as well as in front of the administration building at 500 Alexander Ave in Tacoma, Wash.

Team announces its new Anchorage location

Team Industrial Services said Sept. 27 that it has opened the doors to its new location at 6141 Dimond Hook Drive in Anchorage. The new location houses a welder-qualifying lab, and RT trucks for use in radiography.

Team Industrial Services is the largest specialized industrial services company in North America through service, safety, quality, leadership and innovation. Team recognizes that its success ultimately is a result of its customers' trust and confidence which is earned through continuing outstanding service.

Companies involved in Alaska and northern Canada's oil and gas industry

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All of the companies listed above advertised on a regular basis with Petroleum Futures
continued from page 1

FLOW ISSUES

Threshold throughput

The NRDC report does not question the issues that are likely to arise as a consequence of low oil prices in TAPS, as the oil flow declines, but says that operational problems will not start to appear until the flow rate drops to 500,000 barrels per day, a situation that is unlikely to arise until sometime around 2020 to 2046. This timeline is based on Alaska production forecasts from the Alaska Department of Natural Resources and the U.S. Department of Energy for existing oil fields and fields under development.

“Our study exposes Alyeska’s big lie that more drilling should be allowed — so that more oil can be shipped through its pipeline.”

— Chuck Chase, National Resources Defense Council

The report also says that the lower limit of pipeline throughput, after implementing low flow mitigation measures, would be 150,000 to 200,000 barrels per day, with the flow rates not dropping to those levels until 2036 to 2046, using the same DNR and DOE forecasts. Moreover, the required low flow mitigation measures could be implemented at a cost in the range $539 million to $721 million, a cost that would allow the pipeline owners to make healthy profits from continuing North Slope oil production — the pipeline tariff would be substantially lower than current and projected future oil prices, even with the low flow mitigation costs factored into the tariff rates, the report says.

“Our study exposes Alyeska’s big lie that more drilling should be allowed — so that more oil can be shipped through its pipeline,” said Chuck Chase, NRDC’s director of national parks and Alaska projects, when announcing the release of the NRDC report. “Contrary to the industry’s ‘the sky is falling’ claim, TAPS is not in danger of being shut down without drilling in environmentally sensitive areas such as the Arctic National Wildlife Refuge and the Arctic Ocean.”

“Achieving the governor’s goal of one million barrels per day by 2020 would appear to be a win-win situation — more barrels means less time required (for oil) to travel in the coldest parts of the pipeline during winter.”

— Joe Balash, deputy commissioner to Alaska Department of Natural Resources

Balash: win-win

Alaska Gov. Sean Parnell has been promoting a campaign to boost TAPS throughput to a rate of 1 million barrels per day by 2020 through new oil development onshore and offshore northern Alaska, in part to head off TAPS low flow issues. In a Sept. 29 email to Petroleum News Joe Balash, deputy commissioner of Alaska’s Department of Natural Resources, questioned what appeared to be a lack of engineering involvement in the NRDC report preparation, saying that the State Pipeline Coordinator’s Office has for several years been expressing concerns about issues relating to TAPS low flow and the ability to restart the pipeline after a shutdown in cold conditions. Engineering staff in the Joint Pipeline Office have arrived at similar conclusions to Alyeska’s most recent prognosis on the low flow issues, and although there is general agreement that measures can be taken to allow TAPS to operate at lower flow rates, the optimum choice of these measures is unknown, Balash wrote.

“Achieving the governor’s goal of one million barrels per day by 2020 would appear to be a win-win situation — more barrels means less time required (for oil) to travel in the coldest parts of the pipeline during winter,” he wrote.

According to the NRDC report, the report’s 500,000 barrels per day figure for the threshold for flow problems originates from a report prepared for Alyeska by Mustang Engineering Inc and presented as testimony in a TAPS valuation court case in 2010. The NRDC report says that in that same court case Alyeska had said that the installation of heaters on TAPS would enable the pipeline to operate at flow rates as low as 200,000 barrels per day, with an expert witness also testifying that with the installation of heaters, the completion of a major pipeline reconfiguration that Alyeska has been expressing concerns about issues relating to TAPS low flow and the ability to restart the pipeline after a shutdown in cold conditions. Engineering staff in the Joint Pipeline Office have arrived at similar conclusions to Alyeska’s most recent prognosis on the low flow issues, and although there is general agreement that measures can be taken to allow TAPS to operate at lower flow rates, the optimum choice of these measures is unknown, Balash wrote.

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To advertise in Petroleum News, please contact Susan Crane at 907-770-5592, or Bonnie Yonker at 425-483-9705.

exploration & production

US oil and gas rig count up by 6 to 1,991

The number of rigs actively exploring for oil and natural gas in the U.S. increased by six the week ending Sept. 23 to 1,991. Houston-based drilling product provider Baker Hughes Inc. reported that 1,071 rigs were exploring for oil and 912 for natural gas. Eight were listed as miscellaneous.

A year ago this week the rig count stood at 1,650. Of the major oil- and gas-producing states, Texas gained eight rigs, North Dakota gained six, Colorado gained two and Wyoming gained one. Louisiana and Pennsylvania each lost four rigs and Alaska, New Mexico and Oklahoma each lost one. Arkansas, California and West Virginia were unchanged.

The rig count peaked at 4,530 in 1981. A low of 488 was recorded in 1999.
**KEYSTONE DECISION**

continued from page 1

The more reason why Canada should look at trade diversification and particularly diversification of energy exports.

**Access to Asian markets**

Harper also delivered a strong endorsement of attempts to open export routes to Asia, including Enbridge’s Northern Gateway project, with federal Natural Resources Minister Joe Oliver declaring the Canadian government wants increased access to Asian markets to “secure the benefits of our resources for the long term.”

Oliver said that while the government respects the regulatory process, it is a “key strategic objective to diversify our customer base” beyond the United States. He said the oil and gas industry will remain a critical driver of a healthy Canadian economy, even as government and industry work to reduce its environmental impact.

Oliver said Keystone opponents fail to mention that coal plants in Wisconsin emit more greenhouse gases than the oil sands, or that California’s unconventional oil is more greenhouse-intensive than the oil sands.

**Editorial endorsements**

With the Editorial Department expected to decide the fate of Keystone later this year, the battle for hearts and minds has seen seven leading U.S. newspapers with The Globe and Mail of Toronto endorse the project, leaving only the New York Times on the other side of the fence.

Pro-pipeline editorials have been carried by The Wall Street Journal, Washington Post, USA Today, Los Angeles Times, Chicago Tribune, Houston Chronicle and Boston Herald.

The Chicago Tribune argued that even if Keystone is defeated, Canada will ship its oil to the U.S. by “rail, barge or truck, if need be … Americans should be celebrating a development that will reduce the dependence on oil from less-compassionate foreign sources … (and) will keep prices in check when the economy starts growing in earnest again.”

The New York Times said it has two main objections to Keystone: The risk of oil spills along the pipeline and the fact that the “extraction of petroleum from the ground makes it more difficult to secure the benefits of our resources for the long term.”

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Continued from page 1

**ESCOPETA**

The smaller diameter hole was drilled as a safety precaution, to make sure there were no unexpected pockets of natural gas in the well bore, Escopeta said.

Drilled to a depth of 10,800 feet with the larger hole by the morning of Sept. 8. Shortly thereafter they ran into trouble. It was over “a busted clip on an O-ring,” Escopeta President Ed Oliver told Petroleum News Sept. 29.

“We had a malfunction on a downhole tool. … We had the best contractor in the world on these downhole tools. … But it can happen. And every time we started to do something, something else went wrong, like the parts had to come out of Houston — that cost us three days. And then a contractor didn’t work on weekends. Then a warehouse misplaced something; that cost us another three days. What started out as a routine problem, that cost us another three days.

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LEASE SALES

brought on production, the commissioner can waive the increased rental, he said, describing the change in rental rates as performance-based.

Barron said the state looked at what other jurisdictions do, at suggestions from companies and at what changes it is allowed to make in lease sale terms. Some jurisdictions, he said, can change the length of leases based on performance. Alaska can’t do that, he said, but can work with rental rates.

The goal with the changes was to look at what could be done that would be in the best interests of the state to encourage development at a rapid pace, but in “absolutely the most responsible manner possible,” Barron said.

Terms, royalty rates

All leases in the three sales have 10-year lease terms. In last year’s sales, Beaufort Sea and North Slope tracts had either seven- or 10-year terms, based on location, with tracts nearer to infrastructure having seven-year terms; all North Slope Foothills tracts had 10-year terms. For the this year’s Foothills sale, all tracts have a minimum bid of $10 an acre, a fixed royalty rate of 12.5 percent and rental rates standard for state lease sales: $1 per acre for the first year, $1.50 per acre for the second year, $2 per acre for the third year, $2.50 per acre for the fourth year and $3 per acre for the fifth and subsequent years.

For the Beaufort Sea and North Slope sales, tracts adjacent to federal lands (the Arctic National Wildlife Refuge, the National Petroleum Reserve-Alaska and the federal outer continental shelf) have a minimum bid of $10 per acre, and rental and royalty rates the same as those described above for the Foothills sale.

Barron said those areas adjacent to federal acreage are areas where the acreage is not yet fully assessed, while areas with higher bonus bid requirements and higher rentals are where prospectivity is known and higher.

Available tracts adjacent to federal acreage appear to include the majority of tracts in the Beaufort sale; they are a minority on the eastern and western edges of the North Slope sale.

In addition to what the state describes as a sub-region of acreage adjacent to federal acreage, the North Slope sale is divided into northern and southern sub-regions, with the southern sub-region, farther from infrastructure, having a 12.5 percent royalty rate (in common with the area adjacent to federal acreage) while the northern sub-region has a 16.7 percent royalty rate.

A striking feature of the North Slope sale is the division of 5,760-acre tracts into four parcels, designated A, B, C and D.

Barron said the division of tracts into smaller parcels, 1,440 acres each, was driven by recognition that a lot of the acreage available in the North Slope sale will probably be a target for unconventional shale development.

He said that because one well holds a lease and in unconventional plays like shale more wells are required for development, the idea is that leasing in smaller acreage sizes would increase activity and completion.

Barron said that in trying to work through issues of unconventional development and how wells do and do not connect and how to manage land, the division decided that breaking leases into smaller tracts would give everyone a better opportunity from the development standpoint.

Varying rental rates

For tracts in the Beaufort Sea sale not adjacent to federal acreage and tracts in the south and north sub-regions of the North Slope sale, the minimum bid is $25 per acre.

In last year’s sales, the minimum bid was $10 an acre for all tracts in the Beaufort Sea and North Slope sales, $5 an acre in the Foothills sale.

In the North Slope sale tracts in the south and adjacent to federal lands sub-regions have a fixed royalty rate of 12.5 percent; tracts in the north sub-region have a fixed royalty rate of 16.67 percent.

The new higher rental rate, $10 an acre for the first seven years and $250 an acre thereafter, applies to all tracts in the Beaufort and North Slope sales except those adjacent to federal acreage.

The state said in its sale notice that the $250 per acre rental beginning in year eight applies, “except that beginning in the year after the year in which sustained production commences on this lease or the state otherwise determines in its sole discretion, upon request, that the lessee has exercised reasonable diligence in exploring and developing this lease the annual rental will be $10.00 per acre or fraction of an acre.”

In evaluating requests to decrease rental “based on the exercise of reasonable diligence, the state will consider the funds expended by the lessee to explore and develop this lease and the types of work completed by or on behalf of the lessee on this lease.”

Acreage

The state said the Beaufort Sea area-wide sale area is divided into 573 tracts ranging in size from 640 to 5,760 acres located within the North Slope Borough. The sale includes state-owned tide and submerged lands in the Beaufort Sea between the Canadian border and Point Barrow and the southern fringe of the sale includes some state-owned uplands between NPR-A and ANWR.

The North Slope area-wide sale is divided into 1,225 tracts ranging in size from 640 to 5,760 acres. The state said that for this sale certain tracts have been divided into four parcels, A, B, C and D. North Slope area-wide sale tracts are within the North Slope Borough between the Canning River and ANWR in the east and the Colville River and NPR-A in the west. The Umiat Meridian baseline forms the southern boundary of this sale area.

The North Slope area-wide is divided into three sub-regions: North, South and Adjacent to Federal Lands.

The North Slope Foothills sale area is divided into 1,347 tracts ranging in size from 1,280 to 5,760 acres. The tracts are between ANWR and NPR-A. The northern boundary of the sale is the Umiat Meridian baseline; the southern boundary is the Gates of the Arctic National Park and Preserve.

For complete sales details, including regional tract maps, see the division’s website: http://dog.dnr.alaska.gov/.

Contact Alan Bailey at abailey@geotimes.com

Alaska Statistics

Alaska Oil Industry Employment Statewide and North Slope Borough 2000-2010*

Alaska’s Average Daily Oil and NGL Production Rate 1960 - 2010

Petroleum News will be reproducing this standalone chart from the Alaska Oil and Gas Conservation Commission on a regular basis because of the interest in the decline in Alaska’s oil production.
EXPLORERS

Two of the proposed 34 wells, which would be operated by UltraStar and Savant, could be delayed until next winter because the companies have not yet been able to secure drilling rigs. As of Sept. 22, Great Bear was also still shopping for a rig, but since it is probably looking to keep up a rig and drill year round, it may have better luck securing one.

Following are the companies planning to drill exploration wells between November of this year and November of next: • Brooks Range Petroleum: 1 rig, 2 wells • Great Bear Petroleum: 1 rig, 8 wells • Liné Energy (Renaissance Umatit): 1 rig, 5 wells • Pioneer: 1 rig, 2 wells • Repsol: 5 rigs, 15 wells • Savant: 1 rig, 1 well • UltraStar: 1 rig, 1 well

Great Bear is the exception

Normally, the North Slope off-road exploration season, which includes the nearshore Beaufort Sea, would start in December, with first drilling no sooner than January, and end sometime in April or May, depending on the condition of the tundra. No one can travel off-road on the North Slope unless the ground is sufficiently frozen and the snow is deep enough to protect the fragile Arctic tundra. (The exception is travel via one of the few tundra-certified vehicles designed for very low-pressure impact.)

But if Great Bear can secure the appropriate permits and authorizations, its wells will not require temporary winter roads and pads of snow and ice. Rather, the company will be able to place as many as six gravel drill sites along a 15-mile long stretch following the Dalton Highway and the trans-Alaska oil pipeline, chosen because the corridor is a previously disturbed, active industrial area with existing gravel roads and sites, thus minimizing the environmental impact of drilling — and, of course, providing year-round access, which is a standard in all source rock drilling operations in the United States and Canada.

According to the proposed plan of operations Great Bear filed in mid-September with the Alaska Department of Natural Resources’ Division of Oil and Gas, pad construction and gravel repair and conditioning work for its first drill pad would start in early to mid-November, with drilling to begin in mid-to-late November, and continue on and off for about 12 months. (See story in the Sept. 25 edition of Petroleum News.)

While the company has selected six drill site locations, which means it could drill 12 wells — six verticals and at least six laterals — Great Bear’s plan of operations says the possibility of drilling more than eight wells from four pads is remote.

Savant hopes to drill at Red Wolf

According to an article in this issue of Petroleum News (see page 6), Savant said in its 9th Plan of Development for the eastern North Slope’s Badami unit, filed recently with the Division of Oil and Gas, that its proposed Red Wolf exploration well will target the Keikiktuk formation, which is the formation that contains the oil reservoir for the Endicott field west of Badami.

“We would like to drill the well this winter, but as you know rigs are tight. We are working multiple fronts with respect to securing a rig,” Savant Vice President Greg Vigil told Petroleum News in an email Sept. 26.

Line adds one well at Umiat

Line Energy, the Australian independent that acquired controlling interest in Renaissance Albania and therefore control of its subsidiary Renaissance Umatit, has said it was going to drill a minimum of four wells at the undeveloped Umatit oil field in the Brooks Range foothills along the south-eastern border of the National Petroleum Reserve-Alaska.

But on Sept. 23, a BLM permitting official told Petroleum News that Line had told the agency it was looking at five wells.

Most of the permitting was already done by Renaissance in 2007. Line is renewing one of the four drilling permits because it expires in January, and adding a fifth well, BLM said.

Anadarko conducts rig-less test

Also part of the upcoming exploration season are several seismic surveys and Anadarko Petroleum’s rig-less testing of its Chandler No. 1 gas well.

Seismic yields drilling opportunities for future exploration wells and Anadarko’s work could mean the big independent and its partners might resurrect their multicycar drilling program at the Gubik Complex on state, federal and Native acreage in the Brooks Range Foothills.

Inactive since 2009, Anadarko’s program was the first exploration effort in northern Alaska to explicitly target natural gas for other than local use.

The Gubik Complex contains the undeveloped Chandler, Gubik and Wolf Creek gas fields.

On the Web

See previous Petroleum News coverage:

"Pioneer permitting two Nuna ...wells targeting Forko," in Sept. 25, 2011, issue at www.petroleumnews.com/cgi-bin/PetsNews.cgi?ID=0546231.10940191930130223900 (Wells have since been reclassified as exploration wells by Petroleum News, in accordance with AOGCC’s definition.)


Petroleum News includes offshore explorations as part of its web coverage so the reader can click on the story to see the full coverage.

The well count includes offshore wells in state waters, as well as lateral and sidetrack wells.

Contact Kay Cashman at publisher@petroleumnews.com