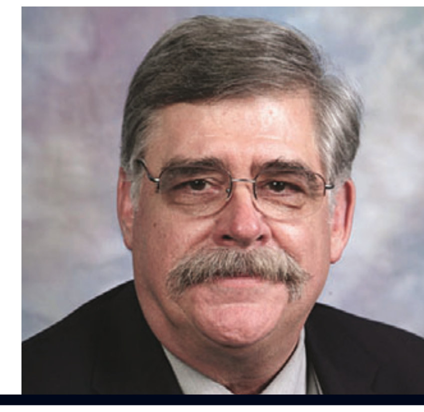
Celebrating 20 years: 1996-2016

Petroleum news



page 5 Q&A: Olson skeptical of oil tax bill discussed in House Resources

Vol. 21, No. 8 • **www.PetroleumNews.com** *A weekly oil & gas newspaper based in Anchorage, Alaska* **Week of February 21, 2016** • **$2.50**

This week's Mining News

NORTH OF 60 MINING news

page 11 Hecla CEO sees growth ahead for Greens Creek's reserves

www.MiningNewsNorth.com *The weekly mining newspaper for Alaska and Canada's North* Week of February 21, 2016

NEWS NUGGETS

Compiled by Shane Lasley

More gold for less at Fort Knox

Kinross Gold Corp. Feb. 11 reported that Fort Knox Mine near Fairbanks produced 401,553 ounces of gold in 2015, a six percent increase over the mine's output of 379,453 oz. in 2014. Some 13.5 million metric tons of ore averaging roughly 0.76 grams per metric ton gold was processed through the mill in 2015; and approximately 25.2 million metric tons of ore averaging about 0.7 g/t gold was stacked on the mine's heap leach pad during the year. Production costs at the Interior Alaska mine totaled US$252.8 million last year, down 12.8 percent from comparable expenses in 2014. As a result, production cost per ounce for Fort Knox gold sold in 2015 was US$629, compared with US$712 the previous year. Fort Knox ended 2015 with 147.32 million metric tons of proven and probable reserves averaging 0.4 g/t (2.02 million oz.) gold. The mine has an additional 95.82 million metric tons of measured and indicated resources (not included in the reserves) averaging 0.5 g/t (1.42 million oz.) gold; and 14.82 million metric tons of inferred resources averaging 0.5 g/t (221,000 oz.) gold.

KINROSS GOLD CORP.

Kinross Gold Corp. poured the six-millionth ounce of gold at Fort Knox. Producing roughly 400,000 ounces of gold per year, the Interior Alaska Mine is on pace to pour its seven-millionth ounce this year.

Ucore's rare earth separation plant nears readiness for tests

Ucore Rare Metals Inc. Feb. 17 reported that its SuperLig®-One rare earth separation pilot plant, currently being constructed in Utah by IBC Advanced Technologies Inc., is expected to be completed and ready for initial fluid testing in March. Roughly 40 metric tons of material sourced from Ucore's Bokan-Dotson Ridge property in Southeast Alaska was processed at Tomra Systems ASA in Germany utilizing dual energy x-ray transmission ore sorting technology. This process, which represents the first step in Ucore's process flowsheet, eliminated 52 percent of the feed as waste while retaining 96 percent of the rare earths, resulting in 19 metric tons of sorted rare earth-bearing material. A three- metric-ton sample of this sorted material has been shipped to SGS Lakefield Research Ltd. in Ontario. Utilizing the circuit developed for the Bokan preliminary economic assessment, SGS will produce roughly 500 gallons of pregnant leach solution from the sample. In addition to delivering a solution suitable for separation in the SuperLig®-One pilot facility, the SGS work will provide further independent confirmation of the process flowsheet set out in the PEA. The Bokan solution will undergo an initial test run in the SuperLig®-One facility followed by a production run beginning in March. The initial output product from the pilot program will be heavy rare earth elements in the form of metal carbonates of dysprosium, terbium and europium, scheduled for delivery in the second quarter. "The maiden run of SuperLig®-One appears to represent the first time that strategic metals such as dysprosium, terbium and europium have been produced on U.S. soil using American feedstock, both individually and at high purity," said Ucore President and CEO Jim McKenzie. "The use of a domestic intellectual property to produce critical domestic materials demonstrates an emerging ability to establish a standalone rare earth supply chain in the West, independ-

see NEWS NUGGETS page 11

METALS MARKETS

Gold price rockets

After six good weeks, analysts recalculate trajectory of safe-haven metal

By SHANE LASLEY

Mining News

Going into 2016, gold was selling for US$1,060 per troy ounce, and most analysts were predicting that the precious metal would at least dip below US$1,000/oz., a major psychological floor for the metal.

Over the ensuing six weeks, however, the safe haven metal climbed more than 15 percent to new highs not seen in more than a year.

With the price of gold rocketing through the US$1,200/oz. mark to US$1,253/oz. on Feb. 11, analysts are re-evaluating the precious metal's destinations for 2016.

Nothing to fear

Citigroup, among the big banks that were most bearish on gold price going into 2016, was one of the first to revise its forecast for the precious metal.

As 2015 was drawing to a close, Citigroup analysts not only thought the price of gold would dip below US$1,000 but predicted it would average a mere US$995/oz. in 2016. In a Jan. 19 report, Citigroup analysts raised their outlook to US$1,070/oz. They predict that the current rally will be tempered by a strengthening U.S. dollar later in the year.

Goldman Sachs, which contends that the current run up in gold price is being driven largely by unwarranted fear, has gold price projections largely in line with Citigroup.

Echoing the phrase that President Franklin D. Roosevelt made famous during a 1933 speech aimed to rally Americans in the grips of the Great Depression, Goldman Sachs researcher Jeff Currie outlined his outlook in a Feb. 15 report titled "Nothing to fear but fear itself."

In the report, aptly published on Presidents Day, Currie and his co-authors at Goldman Sachs say gold has been trending upwards on unfounded worries over systemic risks from weak oil prices, China and negative interest rates.

"We believe that these new fears, like past fears, are not justified," Currie penned in the report. "Systemic risks stemming from the collapse in oil and commodity prices are extremely small."

The authors of the report put the chances of a near-term U.S. recession at about 15-20 percent.

As a result, the Goldman Sachs analysts have set their three-month target for gold at US$1,100/oz. and their 12-month target is US$1,000/oz.

Seeking new heights

As Citigroup and Goldman Sachs see gold prices averaging just above US$1,000/oz. this year, other market watchers observe a more sustained upward trend developing.

In fact, Paul Ciana, a technical strategist for Bank of America Merrill Lynch, said gold has an outside chance of hitting US$1,550/oz. While trends suggest to Ciana that this hefty price is possible under ideal circumstances, his official expectations for the metal are more measured.

"Given the fact that price action has been able to break up through resistance of US$1,201 (/oz.), we've extrapolated the 200-week average to estimate an outside target of US$1,315 (/oz.)," Ciana told Kitco News on Feb. 11.

JASON DOBSON

Gold recovered from a placer mine in Interior Alaska is sorted and weighed. The nearly 15 percent rise in gold prices since the beginning of the year is welcomed by large and small gold miners alike.

"Our measured move projection based on the height of the channel, estimates a second target of US$1,375 (/oz.)," he added.

ScotiaMocatta – part of Scotiabank Global Banking and Markets and a global leader in precious and base metals trading – shares this bullish outlook for the yellow metal.

In a Feb. 12 market update, the Canada-based bullion trader said that after four consecutive weeks of solid gains, gold has established a long-term base of US$1,048/oz. The firm has an initial target of US$1,305/oz. for the yellow metal and says US$1,376 is reasonable.

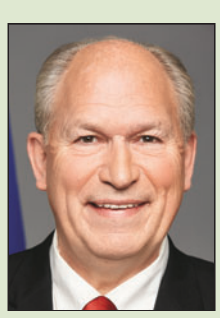
"We see support now at 1200, only a close back below 1190 … would dampen our enthusiasm," Scotiabank wrote in its report.

Technical traders consider the recent gold run is due for a breather after the US$125/oz. rally over the first two weeks of February. These chartists believe that if gold can hold above US$1,192/oz. on a closing basis, this is a good sign for a continued strong bull run for the metal. They say that even a drop to US$1,145, as short-term traders take their profits, would not harm the gold price uptrend established at the start of 2016.

After hitting an intraday high of US$1,253/oz. on Feb. 11, gold fell to an overnight low of US$1,192 in overseas trading on Feb. 15, only to bounce back above US$1,200/oz. when markets reopened after the long Presidents Day weekend in the United States. ●

After six good weeks, analysts recalculate the trajectory of safe-haven metal gold. Read more in North of 60 Mining News, page 9.

AKLNG partners explore options; will continue pre-FEED work



GOV. BILL WALKER

Discussions are underway among Alaska LNG Project partners on options to reduce costs for the multibillion dollar project in the face of low energy prices.

In a joint appearance Feb. 17, Gov. Bill Walker and representatives of the state's AKLNG partners ExxonMobil, BP and ConocoPhillips said they will continue to work together to explore options to advance the project in what they called the current challenging fiscal times.

Technical work associated with the work plan and budget

see **AKLNG OPTIONS** *page 14*

DNR Commissioner Myers retiring

MARK MYERS

Alaska Department of Natural Resources Commissioner Mark Myers is retiring effective March 1.

In a Feb. 16 message to DNR Myers said he is retiring for personal reasons, and looks forward to more time with his family, including aging parents, kids in college and his wife of 33 years.

"Due to the nature of the jobs I have held over the last decade, I have deferred or delayed much on a personal level, including my own retirement," Myers said.

"I hate to lose Mark from the team," Gov. Bill Walker said in a statement. "He had told me back in October that he wanted to retire, but I wanted to give him time to reconsider. I'm

see **MYERS RETIREMENT** *page 15*

EXPLORATION & PRODUCTION

More oil to TAPS

Development of huge North Slope Alaska oil discovery moving forward

By KAY CASHMAN

Petroleum News

BILL ARMSTRONG

When Bill Armstrong's company took over operatorship of the 750,000 acres it owns jointly with Repsol on the North Slope, many Alaskans saw it as another casualty of low oil prices. The October announcement cancelled three of this winter's wells in the fifth and last year of the partners' aggressive $1 billion-plus exploration program, triggering fear the Spanish major, which had promised to make a field development decision in January, was pulling out of the state, and thus delaying development by years.

Instead, Bill Armstrong told Petroleum News Feb. 12, the new operator, Denver-based Armstrong Oil & Gas, and its now minority partner, Repsol E&P USA, are preparing to accelerate development of their Pikka unit and what is possibly a multibillion barrel resource in just two of at least six horizons, making it a contender in size with the North Slope legacy fields it lies between — the ConocoPhillips' operated Alpine and Kuparuk fields.

In October, then-Alaska Department of Natural Resources Commissioner Mark Myers referred to the discovery as "amazing."

see **PIKKA UNIT** *page 18*

FINANCE & ECONOMY

Remote but successful

ConocoPhillips' CD5 drill site ramps up oil production in the eastern NPR-A

By ALAN BAILEY

Petroleum News

At five below, with a wind chill of minus 32 F, and with the Arctic haze in the sky merging with the white snow and ice covering the ground, ConocoPhillips' new CD5 drill site appears from a distance as a faint outline in the middle of seemingly endless miles of frozen tundra. But, seen more closely, the new drill site, which came on line in October with the first ever oil production from the National Petroleum Reserve-Alaska, is a complex of industrial equipment and pipework, with production ramping up as an initial drilling program at the site moves forward.

CD5 is now the westernmost producing drill site in the ConocoPhillips-operated Colville River unit, in the area of the Colville River delta, to the west of the central North Slope.

see **CD5 DRILL SITE** *page 19*

ALAN BAILEY

The Doyon No. 19 drilling rig on site, drilling a well at CD5.

NATURAL GAS

LNG 'not for quitters'

BC government rethinking project timelines, will continue to work on opportunity

By GARY PARK

For Petroleum News

CHRISTY CLARK

British Columbia Premier Christy Clark is holding tight to the hope that was a key to her landslide election victory in 2013 and will likely get recycled in the 2017 campaign.

Although her over-promise-under-deliver message of 2013 that British Columbia would have its first LNG terminal operational in 2015, followed by at least two more in the next five years, is rapidly crumbling, she opened a new session of the provincial legislature with continued resolve.

But the government also admitted that it won't meet its promised timelines to establish an LNG industry from the 20 proposals that are being reviewed and evaluated.

"There is no question unforeseen global conditions are posing new challenges," said the government's speech outlining priorities for the legislative session.

"Low global prices will have an impact ... on the government's initial timelines. But government has done everything it set out to do to attract investment for the cleanest LNG in the world.

"As companies consider their best opportunities to reach final investment decisions, your government will continue to work to bring home the opportunity of LNG in B.C."

see **LNG OPPORTUNITY** *page 14*

contents

Petroleum News | North America's source for oil and gas news

Alaska - Mackenzie Rig Report

The Alaska - Mackenzie Rig Report as of February 17, 2016.
Active drilling companies only listed.

TD = rigs equipped with top drive units WO = workover operations
CT = coiled tubing operation SCR = electric rig

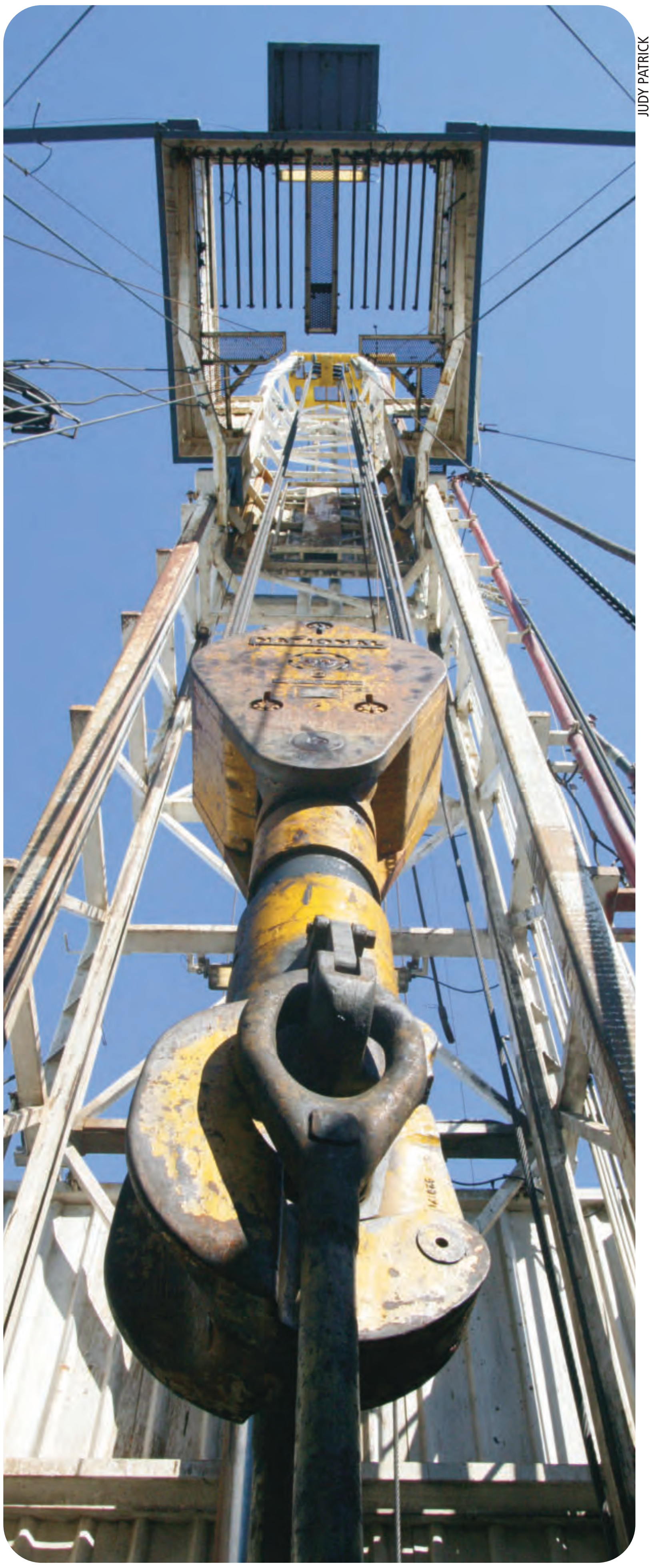
This rig report was prepared by Marti Reeve

Alaska Rig Status

Rig Owner/Rig Type	Rig No.	Rig Location/Activity	Operator or Status
North Slope - Onshore			
Doyon Drilling			
Dreco 1250 UE	14 (SCR/TD)	Prudhoe Bay MPU L-47	Hilcorp
Dreco 1000 UE	16 (SCR/TD)	Standby	BP
Dreco D2000 Uebd	19 (SCR/TD)	Alpine CD5-07	ConocoPhillips
AC Mobile	25	Kuparuk 2S-03	ConocoPhillips
OIME 2000	141 (SCR/TD)	Tinmiaq 2	ConocoPhillips
	142	Rig Up	ConocoPhillips
TSM 7000	Arctic Fox #1	Tight Hold	Caelus
Kuukpik Drilling	5	Placer Well #3	ASRC Exploration LLC
Nabors Alaska Drilling			
AC Coil Hybrid	CDR-2	Kuparuk 2F-18	ConocoPhillips
Dreco 1000 UE	2-ES (SCR-TD)	Deadhorse	Available
Mid-Continental U36A	3-S	Deadhorse	Available
Oilwell 700 E	4-ES (SCR)	Deadhorse	Available
Dreco 1000 UE	7-ES (SCR/TD)	Kuparuk	ConocoPhillips
Dreco 1000 UE	9-ES (SCR/TD)	Deadhorse	Available
Oilwell 2000 Hercules	14-E (SCR)	Deadhorse	Available
Oilwell 2000 Hercules	16-E (SCR/TD)	Mustang location	Available
Oilwell 2000 Canrig 1050E	27-E (SCR-TD)	Point Thompson	Exxon
Oilwell 2000	33-E	Deadhorse	Available
Academy AC Electric CANRIG	99AC (AC-TD)	Deadhorse	Available
OIME 2000	245-E (SCR-ACTD)	Oliktok Point	ENI
Academy AC electric CANRIG	105AC (AC-TD)	Deadhorse	Available
Academy AC electric Heli-Rig	106AC (AC-TD)	Deadhorse	Available
Nordic Calista Services			
Superior 700 UE	1 (SCR/CTD)	Prudhoe Bay Drill Site M, Well 08	BP
Superior 700 UE	2 (SCR/CTD)	Prudhoe Bay Well Drill Site 16, Well 17	BP
Ideco 900	3 (SCR/TD)	Cold stacked at Milne Point	Available
Parker Drilling Arctic Operating Inc.			
NOV ADS-10SD	272	Prudhoe Bay DS 18	BP
NOV ADS-10SD	273	Prudhoe Bay DSW-59	BP
North Slope - Offshore			
BP			
Top Drive, supersized	Liberty rig	Inactive	BP
Doyon Drilling			
Sky top Brewster NE-12	15 (SCR/TD)	Stacked	
Nabors Alaska Drilling			
OIME 1000	19AC (AC-TD)	Oooguruk ODSN-02	Caelus Alaska
Cook Inlet Basin – Onshore			
Miller Energy Resources			
Mesa 1000	Rig 37	Mobilized to North Fork to begin drilling this winter	Miller Energy Resources
All American Oilfield LLC			
IDECO H-37	AAO 111	In All American Oilfield's yard in Kenai, Alaska	Available
Aurora Well Services			
Franks 300 Srs. Explorer III	AWS 1	Stacked out west side of Cook Inlet	Available
Saxon			
TSM-850	147	Ninilchik Unit, Bartolowits pad drilling Frances #1	Hilcorp Alaska
TSM-850	169	Swanson River	Hilcorp Alaska
Cook Inlet Basin – Offshore			
XTO Energy			
National 110	C (TD)	Idle	XTO
Spartan Drilling			
Baker Marine ILC-Skidoff, jack-up		Spartan 151 Upper Cook Inlet KLU#1	Furie
Cook Inlet Energy			
National 1320	35	Osprey Platform RU-1, workover	Cook Inlet Energy

Mackenzie Rig Status

Rig Owner/Rig Type	Rig No.	Rig Location/Activity	Operator or Status
Canadian Beaufort Sea			
SDC Drilling Inc.			
SSDC CANMAR Island Rig #2	SDC	Set down at Roland Bay	Available
Central Mackenzie Valley			
Akita			
TSM-7000	37	Racked in Norman Well, NT	Available


JUDY PATRICK

Baker Hughes North America rotary rig counts*

	Feb. 12	Feb. 5	Year Ago
United States	541	571	1,358
Canada	222	242	382
Gulf of Mexico	25	26	50

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

● NATURAL GAS

AKLNG negotiations slower than hoped

Rutherford tells House Finance subcommittee state doesn't expect to meet spring deadline, appropriation request being reduced

By KRISTEN NELSON
Petroleum News

The state doesn't expect to meet a spring target for completion of commercial agreements for the Alaska LNG Project, Department of Natural Resources Deputy Commissioner Marti Rutherford told a House Finance subcommittee Feb. 11.

As a result, the appropriation request for the North Slope Gas Commercialization Office is being reduced, she said.

Rutherford said the state thought they'd be much further along in negotiations for commercial agreements than they are now — and also thought they'd be much further along by mid-March. She said the state is still in the midst of discussions with each of the producers on a bilateral basis.

And that affects the budget request for the project. She said because negotiations are going more slowly than expected the state doesn't believe it will be in a position to have to commit to three of the very expensive marketers included in the appropriation request.

MARTI RUTHERFORD

A slide Rutherford used in her presentation says the state's "gas team will continue negotiations at current levels into FY2017." Fiscal year 2017 begins July 1.

Then, beginning in FY2017, the state gas team will ramp up marketing efforts.

The appropriation request is being reduced by $9 million, with the biggest chunk of that, $5.7 million, coming out of personal services, followed by a $3 million reduction in contractual services.

The change reflects a reduction in 10 positions. The governor had requested 21 positions, the revised request calls for 11.

Negotiations behind

Rutherford acknowledged that commercial agreements are behind where the state had hoped they would be, but said negotiations always go at their own pace, with the need to find a middle ground that most closely meets everyone's needs. There are four parties in the discussion, she said, and even among the producers parties have very disparate interests.

Initially the state had hoped to bring commercial agreements to a fall 2015 special session for legislative approval, but now, she said, it looks like the state won't be able to meet the spring 2016 deadline either.

Rutherford said this also affects the DNR decision on royalty in kind, because certain of the commercial agreements must be in place before the DNR commissioner can make a royalty in kind vs. royalty in value decision. She said the department believes it will take as much as 60 days after all major terms are agreed to for a decision on whether taking gas as RIK would be in the state's benefit.

Rutherford said while commercial negotiations for AKLNG are behind, technical project activities are moving along very well.

Scaling back

Personal services included in the revised appropriation include three new positions: senior marketing negotiator, at $1.2 million in salary and benefits; market analyst at $285,000 in salary and benefits; and a marketing negotiator at $960,000 in salary and benefits.

Those individuals will assist the legal team and will also begin outreach to the marketplace, Rutherford said.

Once a marketing structure is identified, those position would move over there, she said, noting that the Legislature will have to provide the authority for that organization and they will have to be funded.

Services in the appropriation request include $15 million to the Department of Law for reimbursable service agreements for legal support for commercial agreements negotiation and drafting, estimated at $1 million a month for outside counsel. Rutherford said the Department of Revenue gets funding directly for their work on AKLNG, while the Department of Law's money in general flows through DNR, although there is some $750,000 in Law's own budget.

The bulk of Alaska Gasline Development Corp. funding is for their work on AKLNG infrastructure, although AGDC has some involvement in commercial negotiations.

The structure

On the issue of marketing the state's gas Rutherford said AGDC will be marketing in-state to utilities through an aggregator it will set up, buying gas from all the co-venturers and acting as the facilitator for the utilities that need gas for in-state use.

Marketing of the state's share of LNG to foreign markets will be done by an organization outside DNR, Rutherford said, calling it as a joint venture or an equity organization completely separate from DNR.

DNR, she said, will have the same role it does with the state's royalty oil — making sure the state gets its right share, but once DNR gets those molecules it will be transferring them to the marketing organization.

Rutherford said she thinks of that organization in much the same way as when the Permanent Fund was set up — the marketing organization needs that level of expertise, she said, although it will be dealing with the state's gas rather than the state's money. ●

Contact Kristen Nelson at knelson@petroleumnews.com

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www.PetroleumNews.com

Kay Cashman	PUBLISHER & EXECUTIVE EDITOR
Mary Mack	CEO & GENERAL MANAGER
Kristen Nelson	EDITOR-IN-CHIEF
Susan Crane	ADVERTISING DIRECTOR
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Forrest Crane	CONTRACT PHOTOGRAPHER
Tom Kearney	ADVERTISING DESIGN MANAGER
Renee Garbutt	CIRCULATION MANAGER
Ashley Lindly	RESEARCH ASSOCIATE

ADDRESS
P.O. Box 231647
Anchorage, AK 99523-1647

NEWS
907.522.9469
publisher@petroleumnews.com

CIRCULATION
907.522.9469
circulation@petroleumnews.com

ADVERTISING
Susan Crane • 907.770.5592
scrane@petroleumnews.com

Bonnie Yonker • 425.483.9705
byonker@petroleumnews.com

FAX FOR ALL DEPARTMENTS
907.522.9583

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● GOVERNMENT

Olson skeptical of oil tax bill

Soldotna Republican's view of resource development as Labor & Commerce chair and Resources member examines breadth, depth of issues

By STEVE QUINN
For Petroleum News

House Rep Kurt Olson is getting an earful on oil and gas issues be it on the Labor and Commerce Committee he chairs, the House Resource Committee hearing Gov. Bill Walker's oil tax credit bills or various subcommittees hearing from the Department of Revenue's Tax Division and Labor Commissioner Heidi Drygas.

The Soldotna Republican says he believes the AKLNG project will continue to make progress but maybe not as fast as some would like. But as the state "has never been this close," Olson remains optimistic about the prospects.

Olson spoke to Petroleum News on pending issues ranging from AKLNG to prospective changes to the state's oil tax code being debated in the Resources Committee.

Petroleum News: You've been getting some updates on oil tax payment audits from the Tax Division. Revenue has 2008 done and 2009 should be announced soon, and now they are doing two years simultaneously. What's your take on these developments?

Olson: The best guess I've heard and we are waiting for confirmation from the department is there is something between $1.25 billion outstanding and $1.75 to $2 billion, which is pretty significant when you consider they only had four audit masters and they are down to three right now. And they aren't recruiting. It appears we are not moving as fast as we can. It appears we have money out there that won't be available for several years. We are looking at a number of things to help them become more efficient.

Petroleum News: By we, do you mean Resources, Labor and Commerce, the Legislature as a whole?

Olson: Several people in the House. There is a whole bunch of people in the loop on it.

Petroleum News: There was talk in Resources about going outside for help on the audits. Why go outside?

Olson: It's my understanding that there are people who do this on a regular basis in other states. We are not far enough along right now to really name off any specifics, but I suspect they are out of Houston.

Petroleum News: As you look at the oil tax credit bill, the audit provisions are just a small part, what would you like to see done with the oil tax credit bill?

Olson: When you have one entity of the state that was once responsible for 90 percent of the state's revenues, you don't kill the golden goose. And you don't cook it after you've killed it. I think we are at that point if we implement it as it's drawn up now.

Petroleum News: What provisions of the bill give you heartache?

Olson: I'd rather not say. I'm going to meet with (Finance co-chair and Revenue subcommittee chair Steve Thompson) first and share them with him. The biggest dog I have in the race is making sure that we don't run them out the state.

REP. KURT OLSON

Petroleum News: If you're not ready to discuss your thoughts, how would you characterize these hearings?

Olson: Contentious and defensive. I don't think anybody should be taking it personal, the Legislature or the administration, or even the producers. All of us want to find that sweet spot.

Petroleum News: In the end, don't you want something in place the state can afford?

Olson: It depends at what price.

Petroleum News: You've got through quite a few changes since 2006.

Olson: The mantra was fiscal certainty. Now it's fiscal stability. If it's changing every four or five years, there's not a lot of inducement for spending a lot of money. I'm amazed ConocoPhillips is progressing with a pretty aggressive program on the North Slope — and Exxon for that matter to a lesser degree at Point Thomson. If you look around the world, there are projects that we were competing with on the gas line that are no longer on the table.

There's exploration that's being pushed back. When you're looking 50 or 60 years into the future to develop any place around the world, and we have difficulty doing a budget for more than one year, who do you think is in a better position to be in the driver's seat?

One of the producers was asked several years ago if you have a map on the wall with different colored push pins for the years that assets will start being developed, the company said they can't give us exact figures but it's in excess of 60 years.

Petroleum News: Let's talk about your role as chair for Labor and Commerce, is there anything during the session you want to hear from the Labor Commissioner (Heidi Drygas)?

Olson: I'm also on that subcommittee. I was impressed with the cuts Commissioner Drygas made in her first year. I'm also impressed with what she's doing this year. I don't believe we should be cutting a lot of training programs. The one I'm most familiar with is AVTEC. We've had pretty good success with that.

I think if we are going to have a lot of Alaskans working on the job, we are going to have to train a lot of them. Because the generation that built the TAPS line are my age or older and are retiring or in management positions.

Q AND A

We are having some real difficulty with the new work forces coming in. A lot of them aren't passing UAs (urine analyses). Even though marijuana has been legalized, alcohol has been legal and if it shows up in your blood, you don't pass. I've got younger friends working on the slope and they are seeing a number of people failing because of marijuana. It stays in your system for 30 days whereas alcohol will metabolize in three or four days.

We're having issues with getting the word out to the workforce that they are subject to this and there is zero tolerance. Maybe it's not a Labor and Commerce Committee issue, but it is an issue for the Department of Labor and Workforce Development.

How do we make sure we have an adequately trained workforce, not only for the gas line but also jobs on the North Slope? Why are the jobs going outside? I think we both know the answer to that. They don't have enough trained people.

Petroleum News: What would you like to see done on that front? If the project advances, you're about five to seven years out from construction.

Olson: I think we take advantage of the in-state training programs and specifically address the issue of chemical and alcohol abuse.

Petroleum News: On to Resources, you folks also received a briefing from AKLNG partners a few weeks ago. What were your major takeaways?

Olson: The thing that I found out that was particularly interesting was we were able to pin them down on what's been invested so far in the difference between the 42-inch and 48-inch lines in addition to eight months or nine months of time. It will be approximately $30 million. We

see **OLSON Q&A** page 17

● FINANCE & ECONOMY

King of its domain

Suncor Energy succeeds in bid to take over Canadian Oil Sands, promising operational improvements, but faces C$4B funding deficit

By GARY PARK

For Petroleum News

In boxing terminology, Suncor Energy has become the undisputed heavyweight champion of Alberta's oil sands by taking a decisive step towards closing its C$6.8 billion takeover of Canadian Oil Sands, the largest shareholder in the Syncrude Canada consortium.

But Suncor may quickly find itself reeling from a series of body blows that threaten to saddle it with a funding deficit estimated at C$4 billion by analysts at Toronto-Dominion Bank and Barclays.

After a bare-knuckles brawl that lasted more than four months, 72.9 percent of COS shares were tendered to Suncor, which extended its offer by another 17 days in an effort to make the verdict unanimous before it forces the sale at a shareholder meeting on March 21.

For the two companies, however, Moody's Investors Service served up some bad medicine by downgrading the debt of both.

Citing the impact of weak oil prices, the rating agency cut COS's rating to junk status, cutting it to Ba3 from Baa3 and lowered the unsecured debt rating on Suncor to Baa1 from A3.

That came two months after Moody's put Suncor and many other Canadian oil producers under review for possible downgrade in response to the market slump.

Even so, Moody's Senior Vice President Terry Marshall said COS's rating is supported by its long-lived, low-decline reserves and its ownership by Suncor.

Once the transaction is finalized, Suncor will have control of oil sands production capacity of about 600,000 barrels per day.

Suncor pleased with support

"We're pleased with the strong level of support from COS shareholders," said Suncor Chief Executive Officer Steve Williams. "From the outset, we've spoken about the excellent value this offer creates for both COS and Suncor shareholders and I'm looking forward to delivering on that commitment."

His company wasted no time in putting its stamp on the deal by appointing a new executive team and directors for COS, affirming its belief that COS has long been dragged down by its management style.

Regulator filings show that the top five executives at COS are entitled to payouts totaling C$7.35 million in the event that they are terminated following a change of company control.

A Suncor spokeswoman also disclosed that another two dozen COS employees will learn by the end of February if they will become Suncor staff or get laid off following a transition phase.

She told the Calgary Herald that the focus is on "continuity, as well as planning and preparing for the full integration."

The new chairman of COS is Harry Roberts, a retired former executive of Petro-Canada (which merged with Suncor) and Suncor.

'Best-in-breed'

Greg Pardy, an analyst with RBC Dominion Securities, in recommending COS shareholders surrender to the Suncor offer, said Suncor has "re-engineered itself as a best-in-breed integrated oil producer by walking the talk of capital discipline, driving down its cost structure and maintaining a solid financial position."

He said Suncor now stands to benefit from improving oil prices and lower operating costs at Syncrude by increasing its stake in the operation to 49 percent from 12 percent.

Suncor has given no indication yet that it wants to terminate a 10-year management contract at Syncrude that is held by Imperial Oil, which owns 25 percent of the facility.

However, Kyle Preston, an analyst with National Bank Financial, said Suncor is expected to become "more engaged with the operational aspects of Syncrude and work more closely with Exxon/Imperial to identify and implement operational improvements, with the ultimate goal of improving reliability and utilization of the Syncrude operations."

"Longer term, we believe there is a greater likelihood of Suncor taking over operatorship of Syncrude and possibly integrating the operation with its own oil sands assets, which could provide significant upside leverage to cash flow, especially in a rising oil price environment."

Two big-ticket projects

Suncor and its partners are hoping to start production in 2017 from two big-ticket projects — the C$13.5 billion Fort Hills oil sands mine in Alberta and the C$14 billion Hebron project offshore Newfoundland.

Williams agreed that Suncor faces the prospect of further cuts to its capital and operating budgets now that oil prices are projected to average US$39 a barrel this year, down 22 percent from its previous prediction.

"We don't particularly like it. It's tougher than we anticipated when we started, but our plan is — even at (oil prices in the mid-US$30) — to be able to take (Fort Hills and Hebron) through to completion," he said.

But Williams said Suncor has no plans to cut its dividend, which it presented as a major selling feature to COS investors, despite anxiety among credit-rating agencies about the industry's mounting debt burden.

Morgan Stanley has warned the global supply overhang is unlikely to start shrinking before 2017, while FirstEnergy Capital has dramatically reduced its WTI price forecast to a 2016 average of US$37.25 and US$55 in 2017, down by US$10-US$15 from its previous outlook.

FirstEnergy Vice President Martin King expects many producers will be announcing further spending cuts as they roll out fourth-quarter earnings.

Suncor has already cut its 2016 capital spending program by 10 percent from its November guidance to a range of C$6 billion-C$6.5 billion, although its production target was left untouched. It had already reduced its payroll by a net 1,700, up sharply from its initial target of 1,000. ●

Contact Gary Park through publisher@petroleumnews.com

● GOVERNMENT

NAFTA makes 'clean energy' push

By GARY PARK
For Petroleum News

Energy leaders of the North American Free Trade Agreement have reached a pact to nudge their countries towards a clean energy future that includes lowering carbon emissions from the oil and natural gas sector to greater use of low-carbon electricity.

At a meeting in Winnipeg, U.S. Energy Secretary Ernest Moniz, Canadian Natural Resources Minister Jim Carr and Mexican Energy Secretary Pedro Joaquin Coldwell said their memorandum of understanding is designed to advance a "continental approach" to energy policy.

It follows a year in which the trio have worked closely on mapping North American energy trade and structure, sharing energy data, promoting reforms and new business opportunities, the Canadian government said.

Carr said he and his partners "want to build on North America's strength as one of the world's most dynamic and influential regions for secure and sustainable energy."

He said the shared vision involves "a future where an expanding clean energy sector, a sustainable environment and a strong economy go hand in hand."

Carr said the three countries have a common understanding of what constitutes clean energy and share a commitment to sustainability.

"North America is truly on the same page on all of these issues. I think that's a happy alignment," he said.

Canadian Prime Minister Justin Trudeau has said a continental energy strategy will be up for discussion in March when he makes a state visit to meet with President Barack Obama.

Environmental organizations hope that will result in a climate-change agreement that would be as binding on individual companies as trade agreements.

Mexico has been upgrading its electricity infrastructure to include natural gas-fired generators and pipelines, at the same time the U.S. is increasing gas exports to Mexico and foreign companies are being allowed to bid on oil developments.

Lawsuit

But a cloud has been cast over the drive for clean energy in a hearing started Feb. 15 into a lawsuit against NAFTA by U.S.-based Windstream Energy, which is seeking C$568 million in damages for a moratorium imposed on its plans for a wind farm in southern Ontario.

A panel of law experts from the U.S., Finland and Spain has been convened to conduct the case which dates back five years when the Ontario government suddenly froze all offshore wind developments.

Windstream said it had previously signed a power contract with the Ontario government's power authority and has posted C$6 million as security.

Under NAFTA, investments by U.S. companies in Canada cannot be expropriated — which Windstream argues is the case — without compensation.

Ontario, in its filing, said it had the "right to proceed with caution" on offshore wind and argued NAFTA allows "reasonable regulatory delays."

An earlier, non-NATFA case was launched by Toronto-based Trillium Power Wind Corp., which, like Windstream, had planned a project on Lake Ontario when the provincial government imposed the moratorium.

Trillium initially demanded C$2.25 billion in damages from the government, but most of the suit was thrown out of court, leaving the company to sue only on the grounds that the moratorium amounted to "malfeasance in public office." ●

Contact Gary Park through publisher@petroleumnews.com

● GOVERNMENT

House Resources hearing oil tax credits

Committee has heard HB 247 three times so far, plans to return to bill the week of Feb. 22, with numerous hearings on schedule

By KRISTEN NELSON
Petroleum News

House Resources heard House Bill 247, the governor's bill making changes in oil tax credits, three times Feb. 3-12 and so far has plowed through the overview by Commissioner of Revenue Randall Hoffbeck and Division of Tax Director Ken Alper.

After Resources, the bill moves to Finance. The companion bill, Senate Bill 130, has referrals to Resources and Finance; that bill has not yet had a hearing.

House Resources has additional hearings scheduled for the bill, Feb. 22-27.

Hoffbeck said the administration met with industry and thanked companies for their openness in meetings and for helping to identify pinch points.

Alper said the alternative credit for exploration was passed in 2003 and several credits were added in 2006 with passage of the Petroleum Production Tax and the switch to net profits-based taxation, including Cook Inlet tax caps and the first provisions for state repurchase of credits. The 2007 passage of Alaska's Clear and Equitable Share saw credits substantially modified, he said, and state repurchase made more open ended.

Cook Inlet credits were added with the Cook Inlet Recovery Act in 2010; Frontier basin credits were added in 2012 and North Slope credits were dramatically changed with passage of Senate Bill 21 in 2013.

Cook Inlet questions

Questions were raised on a number of issues, among them Cook Inlet credits and bankruptcies.

Rep. Mike Hawker, R-Anchorage, said he was concerned that changes in Cook Inlet credits could throw Southcentral back into the situation it was in prior to the credits, where there was a foreseeable shortage of natural gas and communities were practicing blackout drills.

Hoffbeck said the situation in Cook Inlet is different than it was 5-6 years ago when the market was looking for gas. The incentives worked, he said: There is now gas behind the pipe and fields that lack a market.

Rep. Paul Seaton, R-Homer, said he would like to see something on the impact of the natural gas price in Cook Inlet and how that coincided with increased production. Previously, he noted, Cook Inlet had such a low natural gas price that if you produced gas you lost money. That was based on policies the Regulatory Commission of Alaska used in approving contracts, a policy which has since changed.

Cook Inlet now has the most expensive gas in the U.S., Seaton said, asking to see the coincident timing on not just the credits but when the price went up, urging that Cook Inlet credits be investigated as a subsidy.

Background to changes

Hawker asked to see analysis of potential impacts of tax credit changes and Seaton asked to see analysis of net present value to the state over the life of fields to show what the state gets back for what it invests.

Alper said the Tax Division is trying to replicate lifecycle modeling done by consultants over the past few years and would like to bring some of that before the committee.

Rep. Bob Herron, D-Bethel, asked about the administration discussion that led up to the bill and Hoffbeck said various people were involved over time, but that the policy leading up to the bill was that the size of the pie was not large enough to support everything the state needs to do and that some things needed to be pulled back.

Credits are not a core government service, he said, and had to be balanced against needs such as education.

Asked to name names, Hoffbeck said it was largely Revenue staff, Alper, himself, the governor and the chief of staff, with those four individuals having the most input.

But, he said, decisions in the bill were based on extensive meetings with industry. ●

Contact Kristen Nelson at knelson@petroleumnews.com

ENVIRONMENT & SAFETY

A last resort for responding offshore

Experts explain the ins and outs of the new federal and state oil dispersant use plan for oil spill responses in Alaska seas

By **ALAN BAILEY**

Petroleum News

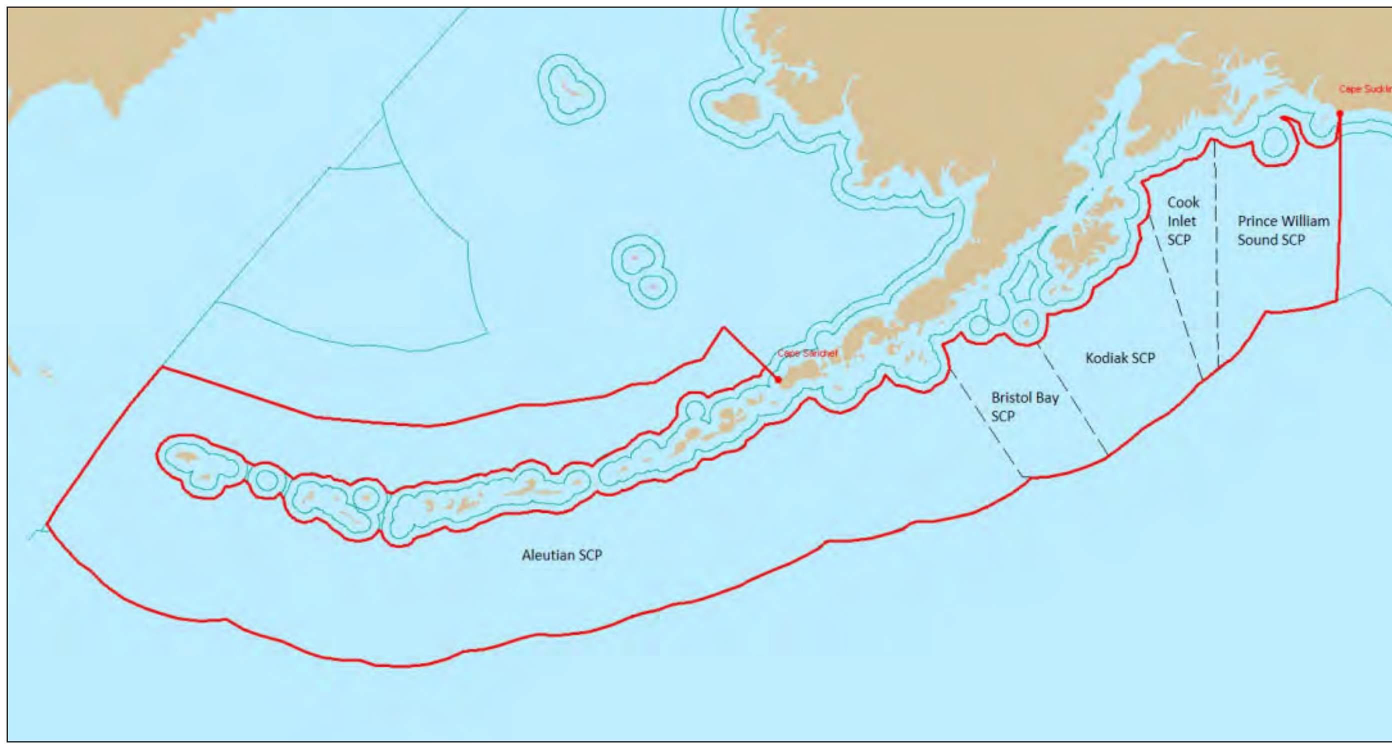
The approval on Jan. 27 of a new federal and state plan for the use of dispersants in response to an oil spill offshore Alaska brings to the fore the potential use of the technique in the seas surrounding the state.

On Feb. 8 at the Alaska Forum on the Environment some members of the team that developed the new plan explained some of thinking that went into the plan's features. The plan was developed under the auspices of the Alaska Regional Response Team, the advisory board that coordinates government policies for responding to oil spills in Alaska.

Dispersants applied to oil polluted water break the oil into tiny droplets, distributing the droplets through the water column and accelerating the breakdown of the oil by bacterial action. Applied in a timely fashion, dispersants will quickly dispose of a surface oil slick, potentially preventing the slick from fouling a shoreline. But critics of the technique argue that the dispersed oil and dispersant chemicals can poison and pollute organisms that would not otherwise be impacted by an oil slick floating on the water surface.

Mark Everett, Coast Guard co-chair for the ARRT, told the Forum for the Environment that dispersants are very rarely used in oil spill responses and tend to be reserved for very large spills, in situations where the mechanical removal of spilled oil proves impractical. But in those rare circumstances where dispersant use is appropriate, dispersants form a powerful weapon in the responder's toolkit, he said. Hence the need for a plan for dispersant use.

"We have to be ready to be able to use it," Everett said. "You cannot pull that together at the last minute."



ALASKA REGIONAL RESPONSE TEAM

The new dispersant use plan for Alaska includes a pre-authorization zone around the Aleutian Islands and southern Alaska.

Pre-authorization zone

The new Alaska dispersant use plan, which replaces an outdated plan dating from 1989, includes what is referred to as a "dispersant pre-authorization zone" in a region north and south of the Alaska Peninsula, and extending around southern Alaska to the Prince William Sound region. The zone starts 24 nautical miles out from the coast. It extends 100 nautical miles out, on the north side of the Alaska Peninsula, and 200 miles out on the south side. All areas of the state's coastline and offshore seas that are not in the pre-authorization zone are classified as undesignated areas, Everett explained.

Decisions on dispersant use in the undesignated areas must be made on a case-by-case basis, using an evaluation of the relative merits of this particular response technique in the circumstances of a spill.

The U.S. Coast Guard regulations that kick in for an oil spill incident inside the pre-authorization zone do not actually authorize the use of dispersants, Everett said. Instead, they authorize the federal on-scene commander for the incident to order the mobilization of dispersant supplies, equipment and trained personnel. The commander must still go through a prescribed protocol for making a dispersion use decision, based on an evaluation of whether dispersant application is appropriate for the environment, Everett said.

Moreover, the pre-authorization zone and its attendant regulations only apply to a tanker vessel carrying crude oil and having a U.S. approved vessel response plan — an incident involving any other type of vessel would be viewed as if it occurred in an undesignated area. And the requirements for dispersant use approval in an undesignated area are more stringent than in the pre-authorization zone, Everett said.

Access to resources required

The operator of a regulated vessel traversing the pre-authorization zone must have access to appropriately staged resources that enable the mobilization of the means of applying dispersants for up to five hours, starting within seven hours of an order by the federal on-scene commander for that mobilization, Everett said. And, recognizing that operators need time to establish the means of meeting these regulatory mandates, the pre-authorization zone will not go into effect until 24 months after the new Alaska dispersant use plan was approved.

During that 24-month hiatus in pre-authorization zone implementation there will be an opportunity to designate avoidance areas within the zone, areas of particular environmental sensitivity where the rules for the undesignated area would apply. Dispersant application would not be prohibited in the avoidance areas, but

see **DISPERSANT PLAN** *page 13*

North of 60 Mining News

page 11 Hecla CEO sees growth ahead for Greens Creek silver reserves

www.MiningNewsNorth.com — *The weekly mining newspaper for Alaska and Canada's North* — **Week of February 21, 2016**

NEWS NUGGETS

Compiled by Shane Lasley

More gold for less at Fort Knox

KINROSS GOLD CORP.

Kinross Gold Corp. poured the six-millionth ounce of gold at Fort Knox. Producing roughly 400,000 ounces of gold per year, the Interior Alaska Mine is on pace to pour its seven-millionth ounce this year.

Kinross Gold Corp. Feb. 11 reported that Fort Knox Mine near Fairbanks produced 401,553 ounces of gold in 2015, a six percent increase over the mine's output of 379,453 oz. in 2014. Some 13.5 million metric tons of ore averaging roughly 0.76 grams per metric ton gold was processed through the mill in 2015; and approximately 25.2 million metric tons of ore averaging about 0.7 g/t gold was stacked on the mine's heap leach pad during the year. Production costs at the Interior Alaska mine totaled US$252.8 million last year, down 12.8 percent from comparable expenses in 2014. As a result, production cost per ounce for Fort Knox gold sold in 2015 was US$629, compared with US$712 the previous year. Fort Knox ended 2015 with 147.32 million metric tons of proven and probable reserves averaging 0.4 g/t (2.02 million oz.) gold. The mine has an additional 95.82 million metric tons of measured and indicated resources (not included in the reserves) averaging 0.5 g/t (1.42 million oz.) gold; and 14.82 million metric tons of inferred resources averaging 0.5 g/t (221,000 oz.) gold.

Ucore's rare earth separation plant nears readiness for tests

Ucore Rare Metals Inc. Feb. 17 reported that its SuperLig®-One rare earth separation pilot plant, currently being constructed in Utah by IBC Advanced Technologies Inc., is expected to be completed and ready for initial fluid testing in March. Roughly 40 metric tons of material sourced from Ucore's Bokan-Dotson Ridge property in Southeast Alaska was processed at Tomra Systems ASA in Germany utilizing dual energy x-ray transmission ore sorting technology. This process, which represents the first step in Ucore's process flowsheet, eliminated 52 percent of the feed as waste while retaining 96 percent of the rare earths, resulting in 19 metric tons of sorted rare earth-bearing material. A three- metric-ton sample of this sorted material has been shipped to SGS Lakefield Research Ltd. in Ontario. Utilizing the circuit developed for the Bokan preliminary economic assessment, SGS will produce roughly 500 gallons of pregnant leach solution from the sample. In addition to delivering a solution suitable for separation in the SuperLig®-One pilot facility, the SGS work will provide further independent confirmation of the process flowsheet set out in the PEA. The Bokan solution will undergo an initial test run in the SuperLig®-One facility followed by a production run beginning in March. The initial output product from the pilot program will be heavy rare earth elements in the form of metal carbonates of dysprosium, terbium and europium, scheduled for delivery in the second quarter. "The maiden run of SuperLig®-One appears to represent the first time that strategic metals such as dysprosium, terbium and europium have been produced on U.S. soil using American feedstock, both individually and at high purity," said Ucore President and CEO Jim McKenzie. "The use of a domestic intellectual property to produce critical domestic materials demonstrates an emerging ability to establish a standalone rare earth supply chain in the West, independ-

see **NEWS NUGGETS** *page 11*

METALS MARKETS

Gold price rockets

After six good weeks, analysts recalculate trajectory of safe-haven metal

By SHANE LASLEY
Mining News

Going into 2016, gold was selling for US$1,060 per troy ounce, and most analysts were predicting that the precious metal would at least dip below US$1,000/oz., a major psychological floor for the metal.

Over the ensuing six weeks, however, the safe haven metal climbed more than 15 percent to new highs not seen in more than a year.

With the price of gold rocketing through the US$1,200/oz. mark to US$1,253/oz. on Feb. 11, analysts are re-evaluating the precious metal's destinations for 2016.

Nothing to fear

Citigroup, among the big banks that were most bearish on gold price going into 2016, was one of the first to revise its forecast for the precious metal.

As 2015 was drawing to a close, Citigroup analysts not only thought the price of gold would dip below US$1,000 but predicted it would average a mere US$995/oz. in 2016. In a Jan. 19 report, Citigroup analysts raised their outlook to US$1,070/oz. They predict that the current rally will be tempered by a strengthening U.S. dollar later in the year.

Goldman Sachs, which contends that the current run up in gold price is being driven largely by unwarranted fear, has gold price projections largely in line with Citigroup.

Echoing the phrase that President Franklin D. Roosevelt made famous during a 1933 speech aimed to rally Americans in the grips of the Great Depression, Goldman Sachs researcher Jeff Currie outlined his outlook in a Feb. 15 report titled "Nothing to fear but fear itself."

In the report, aptly published on Presidents Day, Currie and his co-authors at Goldman Sachs say gold has been trending upwards on unfounded worries over systemic risks from weak oil prices, China and negative interest rates.

"We believe that these new fears, like past fears, are not justified," Currie penned in the report. "Systemic risks stemming from the collapse in oil and commodity prices are extremely small."

The authors of the report put the chances of a near-term U.S. recession at about 15-20 percent.

As a result, the Goldman Sachs analysts have set their three-month target for gold at US$1,100/oz. and their 12-month target is US$1,000/oz.

Seeking new heights

As Citigroup and Goldman Sachs see gold prices averaging just above US$1,000/oz. this year, other market watchers observe a more sustained upward trend developing.

In fact, Paul Ciana, a technical strategist for Bank of America Merrill Lynch, said gold has an outside chance of hitting US$1,550/oz. While trends suggest to Ciana that this hefty price is possible under ideal circumstances, his official expectations for the metal are more measured.

"Given the fact that price action has been able to break up through resistance of US$1,201 (/oz.), we've extrapolated the 200-week average to estimate an outside target of US$1,315 (/oz.)," Ciana told Kitco News on Feb. 11.

JASON DOBSON

Gold recovered from a placer mine in Interior Alaska is sorted and weighed. The nearly 15 percent rise in gold prices since the beginning of the year is welcomed by large and small gold miners alike.

"Our measured move projection based on the height of the channel, estimates a second target of US$1,375 (/oz.)," he added.

ScotiaMocatta – part of Scotiabank Global Banking and Markets and a global leader in precious and base metals trading – shares this bullish outlook for the yellow metal.

In a Feb. 12 market update, the Canada-based bullion trader said that after four consecutive weeks of solid gains, gold has established a long-term base of US$1,048/oz. The firm has an initial target of US$1,305/oz. for the yellow metal and says US$1,376 is reasonable.

"We see support now at 1200, only a close back below 1190 … would dampen our enthusiasm," Scotiabank wrote in its report.

Technical traders consider the recent gold run is due for a breather after the US$125/oz. rally over the first two weeks of February. These chartists believe that if gold can hold above US$1,192/oz. on a closing basis, this is a good sign for a continued strong bull run for the metal. They say that even a drop to US$1,145, as short-term traders take their profits, would not harm the gold price uptrend established at the start of 2016.

After hitting an intraday high of US$1,253/oz. on Feb. 11, gold fell to an overnight low of US$1,192 in overseas trading on Feb. 15, only to bounce back above US$1,200/oz. when markets reopened after the long Presidents Day weekend in the United States. ●

NORTHERN NEIGHBORS

Compiled by Shane Lasley

PRETIUM RESOURCES INC.

This exploration and development camp at Brucejack is being replaced by a 330-person permanent facility currently being constructed.

Brucejack project on schedule, under budget

Pretium Resources Inc. Feb. 17 said the Brucejack project remains on schedule for commercial production in 2017, and the costs of developing the high-grade underground gold mine are coming in under budget. Upon reaching a 60 percent engineering milestone, a capital cost estimate was carried out in late 2015. The estimated total project capital cost to complete design, construction, installation and commissioning, including contingencies, is now US$640.8 million. Adding in US$56 million for three months of post commission working capital, the development and start-up costs for Brucejack are now projected to be US$696.8 million, or about 6.6 percent less than costs projected in a feasibility study completed in 2014. The largest driver for these savings is a more favorable U.S.-Canadian dollar foreign exchange. Commissioning of the Brucejack Mine is expected in the third quarter of 2017. The permanent camp pad has been completed. Assembly of the 330-person permanent camp at site is expected to begin in March. Bulk earthworks to level the site for the mill building are expected to be completed in March with concrete foundation work scheduled to begin in April. Construction of the transmission line also is expected to begin in April. Pre-production underground development contract crews have been mobilized to site and operating on multiple headings since early January. There are currently more than 700 employees and contractors working on the Brucejack project.

Kennady's Faraday 2 returns high diamond grades

Kennady Diamonds Inc. Feb. 16 reported that a 6.4-metric-ton sample of kimberlite recovered from drilling the Faraday 2 kimberlite at the company's Kennady North project in Nunavut returned 3.04 carats of commercial grade diamonds per metric ton. "Delineation drilling has defined the strike of the Faraday 2 kimberlite over roughly 390 meters, and the pipe remains open on strike to the west," said Kennady President and CEO Patrick Evans. "The 'commercial' sample grade of more than three carats per metric ton confirms that the Faraday 2 kimberlite has the potential to host a high-grade diamond resource." Kennady Diamonds also announced the completion of six exploration/delineation holes to the northwest of the final holes drilled at the end of the 2015 winter program at the Faraday 1 kimberlite. Similar to the Kelvin and Faraday 2 kimberlites, Faraday 1 outcrops at lake bottom and dips gently to the northwest with the volume of the pipe increasing to depth. The Faraday 1 kimberlite pipe has now been delineated over a strike of about 160 meters.

see **NORTHERN NEIGHBORS** *page 11*

Petroleum news

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Shane Lasley	PUBLISHER & NEWS EDITOR
Rose Ragsdale	CONTRIBUTING EDITOR
Mary Mack	CEO & GENERAL MANAGER
Susan Crane	ADVERTISING DIRECTOR
Heather Yates	BOOKKEEPER
Bonnie Yonker	AK / INTERNATIONAL ADVERTISING
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Tom Kearney	ADVERTISING DESIGN MANAGER
Renee Garbutt	CIRCULATION MANAGER
Mapmakers Alaska	CARTOGRAPHY

ADDRESS • P.O. Box 231647
Anchorage, AK 99523-1647

NEWS • 907.229.6289
publisher@miningnewsnorth.com

CIRCULATION • 907.522.9469
circulation@petroleumnews.com

ADVERTISING
Susan Crane • 907.770.5592
scrane@petroleumnews.com
Bonnie Yonker • 425.483.9705
byonker@petroleumnews.com

FAX FOR ALL DEPARTMENTS
907.522.9583

Several of the individuals listed above are independent contractors

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● OPINION

None of us will get out of here alive!

Death of Charles C. Hawley, Ph. D., a great contributor to Alaska, leaves an empty place in the hearts of everyone who knew him

By J. P. TANGEN

Special to Mining News

The sad truth of our mortality is brought to our attention on a regular basis, especially when the decedent is a dear friend, a stellar human being and an Alaska hero. Thus it was when "Chuck" Hawley passed on to his eternal reward on Jan. 14, 2016 at 86 years of age. Chuck was a geologist, a miner, a musician, a historian, an industrial leader, an author, a loving husband, father and grandfather, and much more, so much more.

Although slowed significantly in his later years by Parkinson's disease, for 50 years he was a voice in Alaska, and a contributor in many ways to Alaska's mining industry. He came north in the mid-1960's with the U.S. Geological Survey for the purpose of identifying large precious metal deposits in the state.

Charles C. Hawley, Ph. D

As he described it, in 2000: "I first came to Alaska … as a geologist with the U.S. Geological Survey (USGS) [where] I was offered a dream job: To coordinate the Survey's Heavy Metals Program in Alaska. … Heavy Metals really meant gold. … The object of the program was to find new gold deposits that would be economic at $35 per ounce. At that time U.S. Treasury gold held at Ft. Knox that had been bought for $35, or $20.67/oz. was fleeing the country for locations like Hong Kong and Macao where gold was freely trading at $50/oz. or more. Several foreign countries and legitimate gold users had the rights to U.S. Treasury gold at the bargain price.

In due course, the job went away, but Chuck and his family stayed on. Soon he was up to his ears in, first, the passage of the Alaska Native Claims Settlement Act and then the heavy-handed skirmishes leading up to the passage of the Alaska National Interests Lands Act, as unpaid executive director of the Alaska Miners Association, organizer of the first AMA Convention and co-organizer of the Citizens for Management of Alaska Lands.

It was during these adventures that I, as a young lawyer and former bureaucrat fresh from D.C., first encountered Chuck. I soon became president of the AMA and, since I lived in Juneau, had frequent occasion to visit Anchorage and sleep on the Hawleys' couch.

AMA was divided then by a schism between the fiercely independent placer miners from the Interior and the large mining companies coming into the country in search of the same elephantine deposits that had brought Chuck to Alaska. These were the days before Greens Creek, Pogo, Fort Knox and Red Dog and the Interior miners held sway, especially in Fairbanks. The formidable mission that Chuck undertook was to bridge the division and present a solid front. It was a mission for which Chuck was uniquely qualified, both by his stamina and by his imperturbable nature, to execute.

In due course, Chuck turned to other callings, including promoting and developing the Golden Zone property, one of the prospect areas he had mapped and examined in his early work with the USGS; but his contribution to the mining world was not diminished. Among many other things, he was an organizer of the Alaska Mining Hall of Fame Foundation and the author of two scholarly volumes on the history of mining in Alaska.

The inspiration that Chuck provided to the miners in Alaska cannot be easily quantified, but it is more than fair to say that his calling and contribution touched the lives of many hundreds of people, all of whom are the better for having known him. A celebration for sharing memories of Chuck will be held at 2 p.m. on Feb. 27, at the Sons of Norway Viking Hall, 8141 Briarwood St. in Anchorage, Alaska. To learn more, go to the following website:

http://www.legacy.com/obituaries/adn/obituary.aspx?n=charles-chawley&pid=177518142#sthash.Z40G8XjG.dpuf ●

Mining & the law

J.P. TANGEN

The author, J.P. Tangen has been practicing mining law in Alaska since 1975. He can be reached at jpt@jptangen.com or visit his Web site at www.jptangen.com. His opinions do not necessarily reflect those of the publishers of Mining News and Petroleum News.

> *"In due course, the job went away, but Chuck and his family stayed on. Soon he was up to his ears in, first, the passage of the Alaska Native Claims Settlement Act and then the heavy-handed skirmishes leading up to the passage of the Alaska National Interests Lands Act, as unpaid executive director of the Alaska Miners Association, organizer of the first AMA Convention and co-organizer of the Citizens for Management of Alaska Lands."*
> **—*J. P. Tangen, columnist***

Contact North of 60 Mining News:

Publisher: Shane Lasley • e-mail: publisher@MiningNewsNorth.com
Phone: 907.229.6289 • Fax: 907.522.9583

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NORTHERN NEIGHBORS

Skeena identifies five targets at GJ

Skeena Resources Ltd. Feb. 12 reported that its compilation of historical work on high-grade gold-silver and bulk tonnage copper-gold exploration targets on its GJ copper-gold project in northwestern British Columbia has resulted in the discovery of five high-grade gold prospects. Skeena's review focused on targets within the northern portion of GJ and does not include the Donnelly, North Donnelly, GJ and Camp porphyry copper-gold deposits in the central core of the property. Those deposits are the subject of a pending NI 43-101 technical report. Skeena said four of the five high-priority targets have received minimal or no previous drilling. Two are drill-ready bulk tonnage copper-gold porphyry targets, and three are high-grade gold-silver vein targets that require only minimal work to bring to the drill stage. Skeena President and CEO Walter Coles said, "We are enthusiastic about the blue-sky potential of the GJ property, especially the opportunity to focus on the high-grade gold-silver targets, which are complementary to the ongoing exploration work at our adjacent Spectrum project." Detailed compilation of historical work at GJ continues, and Spectrum is planning and permitting for the 2016 exploration season at the northwestern B.C. copper-gold-silver project. Work at GJ will benefit from an existing 40-man field camp purchased from previous operators.

Red Mountain readies for permitting

IDM Mining Ltd. Feb. 16 said the British Columbia Environmental Assessment Office has issued a section 11 order for the Red Mountain underground gold project that outlines the scope and requirement of the provincial environmental assessment, as well as the public and Aboriginal consultation procedures. A preliminary economic assessment outlines plans for a 1,000-metric-ton-per-day mill producing 55,000 ounces of gold and 171,000 oz. of silver per year over a five-year mine life. A two-year environmental baseline program in support of the environmental assessment process is expected to be completed in early summer, and the data will be incorporated into the provincial and federal environmental assessment applications. Project engineering studies, including tailings and water management design, are progressing in conjunction with the EA process, with an aim to publish a feasibility study by the end of 2016. Additionally, the company is updating the project's resource estimate and preliminary economic assessment to include IDM's 2014 drilling and historic drill results from the 141 Zone; this area of mineralization runs parallel to the current resource zones. The revised PEA is targeted for release in the second quarter of 2016, and also will include updated project design and site layout concepts, a new economic model, and a detailed development timeline. The Red Mountain property is located 18 kilometers (11 miles) northeast of Stewart in northwestern British Columbia. ●

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NEWS NUGGETS

ent of increasingly unpredictable Chinese sources."

Consistent performance produces banner year for Coeur at Kensington

Coeur Mining Inc. Feb. 10 reported a banner year at its Kensington gold mine in Southeast Alaska. "It delivered consistent operating performance throughout the year, resulting in gold production of 126,000 ounces at cost of US$798/oz.," Coeur President and CEO Mitchell Krebs informed shareholders and analysts on Feb. 11. The 126,266 ounces of gold produced at Kensington was recovered from 660,464 tons of ore averaging 0.2 oz. /t gold. Mill recovery rates averaged 94.9 percent for the year. Coeur added ore sorting technology to the mill flow sheet in November to improve recovery rates going forward. Recovery rates during the fourth quarter were 96 percent, more than a one percent increase over the previous three months. The company invested US$1.8 million to install the ore sorter and payback expected to be achieved in the second quarter of this year. Coeur said underground development to reach the Jualin deposit at Kensington has advanced a little over 2,000 feet. "We expect to encounter the Jualin ore body, once we've advanced about 7,000 feet. So, we're almost 30 percent of the way there," explained Krebs. The Coeur president said that about US$8 million has been invested in Jualin development and the company anticipates spending another US$20 million to US$25 million between now and the start of mining of the high-grade deposit in 2017. The No. 4 Vein at Jualin currently hosts an estimated 289,000 tons of inferred resources with an average grade of 0.62 oz. /t. Coeur plans to complete roughly 40,000 feet (12,000 meters) of underground drilling this year aimed at upgrading and expanding the Jualin resource. This work will primarily focus on the No. 4 vein but also will include drilling of No. 5, a deeper vein that the company has cut with drilling but for which it has not yet developed a resource. Krebs said the company anticipates roughly US$30 million in capital expenditures at Kensington, "mostly for underground development at both Jualin and at Kensington in order to access higher-grade ore that sets up Kensington to achieve an even further drop in cost and to realize strong and consistent free cash flow." Coeur anticipates this year's gold production at Kensington to be similar to the record levels reached in 2015.

Hecla posts 10th consecutive year of record reserves

Hecla Mining Company Feb. 16 reported 175 million ounces of silver in proven and probable reserves, marking the 10th straight year that exploration has resulted in record reserves for the company. The 1 percent annual increase in silver reserves comes despite the fact that prices used to calculate the reserves were lowered to US$14.50 per ounce silver, down from $17.25/oz. used the year before. The company's measured and indicated silver resources decreased by 2 percent to 161 million oz.; and inferred silver resources increased by 147 percent with the acquisition of Revett Mining Company and its Rock Creek project in Montana. Hecla's proven and probable gold reserves are essentially unchanged at 2.1 million oz. and measured and indicated gold resources decreased by only 1 percent. A US$1,100/oz. gold price was used to calculate reserves, down from the US$1,225 used last year. "Our mines continue to demonstrate their position amongst the highest quality silver mines in the world, adding silver reserves for the 10th consecutive year using one of the lowest price assumptions in the industry and after replacing the 11.6 million ounces of silver production," said Hecla President and CEO Phillips Baker, Jr. "The strength of our mineral resources, particularly at Greens Creek, and the historically high conversion rate at all the mines, give us confidence that we can continue to add reserves in the coming years." Greens Creek milled 814,397 short tons of ore containing nearly 11 million oz. of silver and 90,398 oz. of gold in 2015. The mine's gold and silver reserves dropped 8 percent due to mining depletion and the significantly lower silver reserve prices relative to 2014 prices. Hecla points out that though infilling drilling was completed, the resource/reserve model for the NWW zone was not updated in time for 2015 year-end reporting. This zone includes 800,200 silver oz. and 13,000 gold oz. in the indicated category, and 18.5 million silver oz. and 91,700 gold oz. in the inferred category. The drilling results suggest a high proportion of this resource should convert to reserves. The NWW zone update should be completed during the first quarter of 2016 and is anticipated at minimum to replace in 2016 the current reserve deficit from 2015. Large inferred resources in the Deep 200 South (9.6 million silver oz. and 76,500 gold oz.) and East Ore (11.4 million silver oz. and 106,000 gold oz.) are targeted for infill drilling in 2016 and large portions are expected to be converted to reserves in 2016.

Red Dog sees lower zinc output, price in 2015; faces higher tax in 2016

Teck Resources Ltd. Feb. 11 reported that the Red Dog Mine produced 567,000 metric tons of zinc in 2015, roughly five percent less than the 596,000 metric tons produced in 2014. While ore grades and recoveries were up slightly at the Northwest Alaska operation, mill production was down. Likewise, lead production at Red Dog was down about four percent from 112.5 metric tons in 2014 to 117.6 metric tons in 2015. The zinc sold by Teck in 2015 averaged US87 cents per pound, down 13 percent from the US$1.00/lb. in 2014. Zinc prices have rebounded from a low of US67 cents/lb. reached at the end of 2015 to its current price of roughly US75 cents/lb. Total global reported exchange stocks of zinc totaled at about 659,300 metric tons, or about 17 days of global consumption, compared with the 25-year average of 23 days. Teck expects that recent zinc mine closures and announced production cuts will continue to restrain supplies of the galvanizing metal. The company said it anticipates the Red Dog Mine will produce 545,000 to 570,000 metric tons of zinc and 115,000 to 120,000 metric tons of lead in 2016. From 2017 to 2019, Red Dog's production is expected to be range from 500,000 to 550,000 metric tons of zinc and 100,000 to 110,000 metric tons of lead. Studies are in progress to increase mill throughput and thus zinc metal production as feed grade continues to decline. Teck's Alaska subsidiary that operates Red Dog has filed a complaint in Alaska Superior Court to prevent the Northwest Arctic Borough from enforcing a severance tax that was implemented at the beginning of 2016. Teck Alaska contends that the tax violates its equal protection and due process rights, and that the imposition of the tax breaches a prior negotiated agreement with the municipality. If legal, Teck says the new tax would increase annual payments to the municipality from about US$11.5 million under the prior agreement to an estimated US$30 to US$40 million, depending on zinc prices. Teck said it has been advised that there is a sound legal basis for its complaint. ●

● ENVIRONMENT & SAFETY

BLM moves forward on legacy wells

Anticipates completing cleanup of another 18 well sites in NPR-A this summer using funding from the Helium Stewardship Act

By ALAN BAILEY
Petroleum News

The Bureau of Land Management is moving ahead with a project to remediate a series of old wells in the National Petroleum Reserve-Alaska, the agency has announced. A contractor is already mobilizing a plan to deal with 18 of the wells by the end of the summer.

Referred to as legacy wells, the wells were drilled by the U.S. Navy and the U.S. Geological Survey between 1944 and 1982. The wells were, in general, not properly plugged and, with aging and deteriorating wellheads, they pose safety risks and raise the possibility of environmental damage.

21 wells remediated

BLM has already cleaned up 21 of the wells at a cost to the federal government of $99 million, Nicole Hayes, BLM's legacy wells project coordinator, told a press briefing on Feb. 17. Funding for this year's remediation project comes from the Helium Stewardship Act — in 2013 Sen. Lisa Murkowski arranged for the inclusion of $50 million in funding in that act for the NPR-A legacy well program, Hayes said.

"The Helium Act funding will allow us to clean up a significant number of the legacy wells to protect the public and the environment," said BLM Alaska State Director Bud Cribley in a Feb. 17 press release. "Remediation of the remaining wells will require tremendous additional resources over the coming years, but we are committed to doing our part to finish the job."

The Alaska Oil and Gas Conservation Commission, the state agency responsible for oversight of well safety, has long pressed for BLM action to deal with the legacy well problem. The commission is "tickled to death" that the well remediation is proceeding and the commission fully supports what BLM is doing, said AOGCC Chair Cathy Foerster. AOGCC has been helping BLM prioritize the remediation effort.

136 legacy wells

Hayes said the remediation program had started in 2002 and that there were a total of about 136 legacy wells that required attention. In 2013 BLM put together a strategic plan, identifying

see **LEGACY WELLS** page 15

BUREAU OF LAND MANAGEMENT

Dilapidated wellhead equipment on the South Barrow No. 2 well, one of the National Petroleum Reserve-Alaska legacy wells addressed by the Bureau of Land Management well remediation program.

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DISPERSANT PLAN

these areas would be subject to a more protective standard, Everett explained.

Cmdr. Matthew Mitchell, U.S. Coast Guard chief of planning and force readiness for western Alaska, said that, given the need for scientific expertise in designating avoidance areas, specialists from the Department of the Interior would lead the working groups tasked with the designations. There are five spill response planning subareas within the entire area of the pre-authorization zone — each subarea plan will require changes to accommodate the avoidance area designations.

Everret commented that there had been discussion around the possibility of developing a pre-authorization zone for the Arctic offshore but that, given a lack of agreement between of all of the agencies on that possibility, that particular concept had been dropped. The designation of a pre-authorization zone offshore the Aleutians and southern Alaska recognizes in particular the high risk associated with the carriage of crude oil by tanker in that region, he said.

Tribal and public comments

With the new dispersant use plan being jointly developed by the federal government and the state of Alaska, federal laws required consultation with Alaska tribal entities and state laws required an opportunity for public comments on the plan proposals. Consequently, a draft version of the plan underwent a two-year tribal consultation and public comment process. The planning team received more than 500 public comments, and 154 comments from 18 of the 76 tribes invited to consultations.

Everret said that tribal comments particularly emphasized the need to maintain a healthy, clean environment that would sustain communities' culture and way of life. Tribes are also concerned to be involved in dispersant policy development and decision making, he said.

Rick Bernhardt, Alaska Department of Environmental Conservation unit manager, said that many public comments expressed concern about the impact of dispersant use on long-lived mammals such as whales. However, there appears to be a misconception that dispersants magnify the toxicity of oil, when in fact the use of dispersants redistributes the toxicity through the water column. The tradeoff involved in dispersant use is a reduction in the persistence of the spilled oil in the environment and an ability to prevent the oil from hitting the coastline, Bernhardt said.

Consultation before decision

And, in a spill response, the unified command for the response would consult with the U.S. Fish and Wildlife Service and with the National Marine Fisheries Service, the federal wildlife trustee agencies, to determine whether dispersants would be an appropriate tool, Bernhardt said.

One outcome from the public comments that were submitted has been a decision to jointly fund with the Oil Spill Recovery Institute a study into the potential use of an emerging technology involving use of enzyme-base materials that can simulate the effect of bacteria to break down spilled oil, Bernhardt said.

Everret commented that, overall, the new Alaska dispersant use plan introduces a higher level of stakeholder involvement and a higher standard of environmental protection than the old plan that it supersedes. The new plan requires an especially high level of environmental monitoring for dispersant use. And, before dispersants can be used, the response team must conduct and evaluate a small-scale test of dispersant application, to verify technique effectiveness. The test must be repeated in each 24-hour operational period when dispersants may be applied. ●

Contact Alan Bailey at abailey@petroleumnews.com

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LNG OPPORTUNITY

Global challenges

At the same time, the government gave a broad hint of its likely defense in the 2017 election for its failure to generate even one cent of the C$100 billion in LNG revenue promised in 2013.

"Success is not for quitters," read the speech. "Success demands steadfast attention and resiliency in the face of global challenges."

The extent of those challenges is being hammered home on an almost daily basis, with a new report by the Brattle Group injecting a new warning that longer-term competition from renewable energy in Europe and Asia might stall the entry of Canada and the United States into the global marketplace.

The report cited several LNG projects in North America as potentially risky ventures now that Asian prices have plunged from US$15 per million British thermal units to US$6-US$7 per million BTUs.

The Brattle report acknowledged that the looming LNG glut could be short-lived if forecasts that gas-fired power generation in China, Japan, South Korea and Taiwan could double over the next 20 years.

It also said that investment in wind and solar power in key European and Asian LNG markets is likely to make a dramatic increase.

Increasing investment risk

"The investment risk of the proposed LNG export projects is increasing because there is a significant possibility that, over the 20 years of a typical LNG contract, power production from renewable energy sources will become less costly than the LNG prices needed to justify the upstream LNG investment cost even without considering the value of avoided greenhouse gas emissions," the report said.

David Watson, a lawyer specializing in energy with the firm of Clark Wilson, said it is inevitable that renewable will eventually supplant power generation from fossil fuels.

However, he said the Brattle report ignored important markets such as heating and transportation in focusing exclusively on the demand for gas and LNG in the utility power sector.

"The report is deficient because it assumes that the sole purpose for LNG is electrical generation," Austin told the Business in Vancouver publication. "It will be wonderful when you get to the point where renewables completely displace fossil fuels, but we're not there yet, and you also have to think in terms of both the electricity generation markets and the transportation markets."

Other analysts suggest that "gas-on-gas competition" poses a far greater challenge to LNG in Asia than renewable, with that competition coming from Russia's vast gas deposits and China's unexploited shale gas and coalbed methane resources.

Brad Hayes, president of the consulting firm Petrel Robertson, shared that view, rating the potential impact of renewable as a "relatively minor risk factor for (B.C.) target markets, particularly in Asia."

Upbeat about economy

In reaching for other upbeat messages, the Clark government said British Columbia's economy leads Canada, creating 50,000 jobs in 2015 and laying the groundwork for a "strong, diverse and growing economy" by eliminating the province's operating debt within four years, "paving the path toward a debt-free B.C."

The government also delivered an uncharacteristic broadside at Alberta — "a province of similar size and also blessed with natural resources."

"Over the decades, Alberta lost its focus. They expected their resource boom never to end, failed to diversify their economy and lost control of government spending.

"So today, with the price of oil at historic lows, global markets shutting down, and the Canadian dollar falling, it has never been more important to stay vigilant.

"To protect British Columbia from global trends we must continue to work hard with determination and resist the temptation to spend our way into trouble," the government said, in offering another broad hint of its campaign platform. ●

Contact Gary Park through publisher@petroleumnews.com

Pacific NorthWest gets qualified OK

The Canadian government's environmental regulator said an export terminal for the Pacific NorthWest LNG project could be built and operated without causing "significant" ecological damage, although it said the C$36 billion development would likely endanger porpoises and contribute to climate change.

The Canadian Environmental Assessment Agency's findings on the Petronas-led joint venture in a 257-page report will now be reviewed by the government before it makes a final decision on the proposal.

Pacific NorthWest will now face additional regulations introduced by Prime Minister Justin Trudeau's government in January which require greater consultation with stakeholders and an assessment of carbon emissions from the liquefaction facility and the development, processing and transportation of natural gas feedstock from northeastern British Columbia.

The CEAA said there would be large increases in greenhouse gas emissions, but concluded that "with respect to all other valued components ... the project is not likely to cause significant adverse environmental effects taking into account the implementation of the key mitigation measures."

In addition to Malaysia's Petronas, the partners are Indian Oil Corp., Japan Petroleum Exploration, China's Sinopec and Brunei National Petroleum.

The federally approved export permit allows the project to initial export 12 million metric tons of LNG a year, increasing by another 6 million metric tons.

A separate 20-page document sets conditions Pacific NorthWest must meet before it can go ahead, including monitoring salmon habitat and potentially implementing systems to reduce environmental impacts.

The CEAA, which started its review in April 2013, set a March 11 deadline for a new 30-day public comment period.

Canada's Environment Minister Catherine McKenna has the power to set legally binding conditions when she makes her recommendation to cabinet by March 22, barring any further delays.

The CEAA report, drawing on information from Environment and Climate Change Canada, estimated upstream emissions associated with Pacific NorthWest would range from 6.5 million to 8.7 million metric tons a year of equivalent carbon dioxide.

It noted the partnership estimated the emissions at 4.9 million metric tons a year, down from an earlier 5.2 million metric tons "due to further engineering refinements."

David Austin, a lawyer with the Vancouver firm of Clark Wilson, told Bloomberg News it is likely the government will approve the project "subject to achievable conditions. But considerably more effort is going to have to be put into reducing greenhouse gas emissions from the pipelines and natural gas fields."

Greg Horne, energy coordinator with the Skeena Watershed Conservation Coalition, said the CEAA report is "an incredibly superficial report that omits peer-reviewed science that is key to properly assessing the true environmental impacts of the LNG project," describing the regulatory process as broken.

—GARY PARK

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AKLNG OPTIONS

is on track to have preliminary front-end engineering and design work completed this fall.

Walker said the impact of low oil prices on the project has been the elephant in the room for some time. He said the state's partners in AKLNG brought up the discussion of how the project could be advanced given the low price of energy and the state had recently begun discussing the issue with them.

The governor said "we will be looking at different options, different structures of how that would work."

"What we don't want to do is have any sort of loss of momentum on this project because of the financial situation ... across the world as a result of long-term low oil prices," Walker said.

Partners committed

The state's industry partners all emphasized — in a statement and at the joint appearance in Anchorage — that they remain committed to working on the project.

"BP remains committed to an Alaska LNG project that includes the State of Alaska," BP Alaska President Janet Weiss said in a statement. "We will continue to work with all the parties to deliver a project with a competitive cost of supply."

"Given the economic headwinds the oil and gas industry is facing today, it makes sense to explore options for the AK LNG project," said Joe Marushack, president of ConocoPhillips Alaska. "We are working collaboratively to develop alternative approaches to commercialize North Slope gas."

"ExxonMobil remains committed to commercializing Alaska's natural gas, and we are committed to working with the project participants to explore options that would continue to progress that goal," said Jim Flood, vice president of ExxonMobil Development Co.

Walker said the impact of low oil prices on the project has been the elephant in the room for some time.

No details yet

Walker said at the press conference that "I think we're going to see in the next month or so some options for this project moving forward."

As to what those options might be, the governor said "it's probably too soon to go into specifics on that — that's what we're going to be working on in the next month or so as to what that would look like."

The point of the announcement, he said is that there's potential change in the project "and we wanted to clarify that we're all working collaboratively to find the structure that brings down the cost to the greatest degree and maintains the project going forward."

Speaking in Anchorage, Weiss said pre-FEED work is being completed. "And the whole point here is to get to the lowest cost of supply and have a competitive project."

Marushack said "we're in pre-FEED ... right now and we're going to stay in pre-FEED. That's a big effort to try to get some more information about what's the total cost of the project, where we can reduce some costs, what the challenges might be. So that's what we'll be focusing on," he said.

ExxonMobil's Steve Butt, AKLNG project manager, speaking from Houston, said $500 million has been spent between concept and pre-FEED work to date and more will be spent this year wrapping up pre-FEED work. "And based on what we learn from that work, we'll want to understand whether we have a project that can be competitive on cost of supply. ... And it's going to take a little bit more time and a little bit more money to understand that information and assess all the options that may come out of that."

The constitutional amendment

The state has been pressing for completion of AKLNG commercial agreements by the end of the current legislative session so that legislators could approve those agreements in a special session, making way for approval of a constitutional amendment for project fiscal stability to appear on the November 2016 general election ballot.

It appears those agreements won't be complete, but Walker said a change in structure could lead to "commercial arrangements ... different than originally anticipated. I think we're looking at ... all options on the table how to progress the project."

Asked about the possibility that a constitutional amendment wouldn't be on a general election ballot until 2018, Walker said "there may be ways of providing the kind of fiscal certainty that is appropriate without doing that and so we'll look at that during this period of time to see if there's other options."

But, he said, "it's still a possibility" that a constitutional amendment could be on this year's ballot, although both the administration and Legislature have full plates right now.

Walker also said that the commercial agreements "may not be as critical as they once were from a timing standpoint."

—KRISTEN NELSON

Contact Kristen Nelson at knelson@petroleumnews.com

EXPLORATION & PRODUCTION

Could Alaska coals have generated oil?

Alaska's Division of Geological and Geophysical Services is working with the U.S. Geological Survey to assess whether coals in some Alaska geologic basins could have generated oil, if buried under the appropriate conditions, according to a note in the DGGS annual report for 2015. Previous investigations using a technique called Rock-Eval pyrolysis have suggested that certain coal samples from the Nenana, Susitna and Holitna basins, if buried deep enough to reach the right level of thermal maturity, might have the potential to generate liquid hydrocarbons, the note says.

The U.S. Geological Survey wants to try further tests using a technique called hydrous pyrolysis on selected coal samples from Alaska. The technique replicates realistic subsurface conditions.

"If liquid hydrocarbons are generated during these experiments, it will prove that some Alaska coals are capable of generating petroleum liquids," the note says.

DGGS has submitted a small suite of coal samples from the Nenana and Cook Inlet basins to the U.S. Geological Survey for the new tests.

Although coal tends to be associated with the generation of natural gas rather than oil, there are petroleum provinces where coal is known to have acted as an oil source. Doyon Ltd. is currently exploring in the coal-bearing Nenana basin in Alaska's Interior and has found evidence that the basin could hold undiscovered oil resources.

—ALAN BAILEY

GOVERNMENT

Canadian Natives sue for C$3 billion

Two Cree Nations in Alberta and Saskatchewan are heading up a C$3 billion class action lawsuit accusing the Canadian government of mismanaging oil and natural gas rights on reservation lands.

In their statement of claim, the Poundmaker Cree Nation and Onion Lake Cree Nation allege that Indian Oil and Gas Canada, a federal agency, has failed to promote and properly develop their natural resources.

They also claim the IOGC failed to protect the First Nations' energy resources from being drained by wells outside the designated reserves when it should have sought leasing opportunities on those adjacent to prevent or mitigate the drainage of the resources.

"For many years, the federal government has controlled the exploitation of oil and gas rights on First Nations reserves," Onion Lake Chief Wallace Fox said in a written statement. "The federal government has botched this important responsibility."

The plaintiffs argue that lands on the territories of Poundmaker, Onion Lake and other First Nations participants in the class action suit "were ripe for exploitation," despite efforts to ensure they were only exploited for the benefit of the nations.

They claimed that the federal government had failed to provide "sufficient funds, systems, procedures, staffing and oversight" to enable the First Nations to carry out their obligations and responsibilities.

Poundmaker Chief Duane Antoine said in a statement it was "disappointing that the federal government didn't protect our non-renewable oil and gas resources from drainage by wells on the lands bordering our lands. We are poor people and the revenue from those resources could have done much good in our community."

Harry Strosberg, a lawyer for the plaintiffs, said he hoped the new Canadian government, given its expressed wish to rebuild a relationship with First Nations, would sooner talk rather than engage in a court fight.

—GARY PARK

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LEGACY WELLS

68 wells that had by that time been cleaned up or that did not need further action; 18 wells that were still being used by the U.S. Geological Survey for Arctic climate monitoring; and 50 wells that required some level of remediation, Hayes said. Remediation might involve subsurface work, surface cleanup or some combination of the two.

BLM worked with AOGCC to rank the 50 wells in terms of the urgency with which they needed to be fixed; the Alaska Department of Environmental Conservation identified situations where surface cleanup was needed. Typically, remediating a well involves plugging and abandoning the well, picking up surface debris and identifying any soil contamination, Hayes explained.

Concerns with Arctic coastal erosion triggered an acceleration in the program in 2005, with the availability of emergency funding to deal with the erosion issue. And, following the award of the $50 million in funding from the Helium Stewardship Act, in 2015 BLM was able to use $10 million of that funding to deal with three wells at Umiat and to do surface cleanup at three sites on Cape Simpson, on the Beaufort Sea coast, Hayes said.

Companies contracted

With the remaining $40 million BLM has been able to award contracts to two Native owned companies, Marsh Creek LLC and Olgoonik Construction LLC. The agency can invite these companies to bid on task orders for well remediation and cleanup. BLM has since awarded three task orders to Marsh Creek, to work on clusters of wells this year — working on well clusters rather than individual wells reduces the per-well cost of the remediation. This year's work involves seven legacy wells in the Barrow area and 11 wells in the Cape Simpson area, Hayes said.

Although this year's work will complete the remediation of most of the particularly critical wells, there will remain 29 wells yet to be dealt with and probably about $15 million of remaining funding. BLM will likely use that remaining money to initiate another task order, either this year or next year, to address wells in the Wolf Creek area of NPR-A, Hayes said.

But with the 25 to 29 wells remaining after that not being clustered and being located at particularly remote locations, further work will prove particularly expensive. Because of the heavy equipment required, it costs $3 million to $5 million to mobilize to a site — it will likely cost a total of $100 million to deal with the remaining wells, Hayes said.

Technical challenges

Rob Brumbaugh, minerals specialist in the BLM Energy and Minerals Branch, said that one of the technical issues in dealing with the legacy wells is a general lack of well records. In addition, the wells have old wellhead components and potentially collapsed well casings. With the wells penetrating the hundreds of feet of permafrost under the North Slope, plugging a well with cement typically involves first putting warm brine down the well bore to melt the ice plugs that tend to block the well below the surface, Brumbaugh said. And, since it may not be known whether the well can flow oil or gas, it is necessary to ensure that pressure control equipment is in place before conducting that ice melting operation, Hayes added. ●

Contact Alan Bailey at abailey@petroleumnews.com

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MYERS RETIREMENT

grateful the administration and the state were able to benefit from his experience, knowledge and expertise for as long as we've been able."

Deputy Commissioner Marty Rutherford will step in as acting commissioner.

Myers noted that he had spent 18 years at DNR "in various positions including student intern, petroleum geologist, director of the divisions of Oil and Gas and Geological Surveys, AGIA Coordinator and now Commissioner."

"Retiring is not difficult, but leaving DNR is," he said, citing "the professionalism, dedication to the mission and public service ethic of DNR employees."

Myers was appointed DNR commissioner last April.

Immediately prior to that, from 2011 to 2015, he was chancellor of research at the University of Alaska Fairbanks.

In the 1980s and 1990s Myers worked as a geologist with ARCO, Phillips Petroleum and the state.

In 2001 he was appointed to lead DNR's Division of Oil and Gas and in 2005 he also became state geologist and director of the Division of Geological and Geophysical Surveys.

Myers is one of the so-called "Magnificent Seven" who departed the administration of Gov. Frank Murkowski in disagreement with the governor over negotiations for a gas pipeline project under the Alaska Stranded Gas Development Act. Six officials resigned from DNR in October 2005, following the departure of DNR Commissioner Tom Irwin in a dispute with Murkowski over gas pipeline negotiations then underway. Following Irwin's departure six senior department officials resigned. They included both deputy commissioners, Rutherford and Dick LeFebvre, Nancy Welch, one of three special assistants in the commissioner's office, and three directors — Oil and Gas Division Director Myers, Director Bob Loeffler of the Division of Mining, Land and Water and Office of Project Management and Permitting Director Bill Jeffress.

Myers was named director of the U.S. Geological Survey and served in that federal post from 2006-2009.

He returned to the state in 2009 and led state efforts under the Alaska Gasline Inducement Act until 2011.

—KRISTEN NELSON

Contact Kristen Nelson at knelson@petroleumnews.com

Oil Patch Bits

UIC commercial operations gets new chief of staff


DORIS HUGO-SHAVINGS

Because of her strong leadership skills, Doris Hugo-Shavings has been promoted by Ukpea vik Iñupiat Corp. as the chief of staff for UIC commercial operations. She was originally hired by UIC in the fall of 2015 as the director of strategy. Prior to joining UIC Hugo-Shavings worked at Shell Exploration & Production Co. for nearly 10 years in public relations, community affairs, operations and social performance.

Hugo-Shavings holds two bachelor's degrees in strategic communication and political science from the University of Alaska, Anchorage and a master's degree in business administration from the Michael G. Foster School of Business, at the University of Washington.

Hugo-Shavings was born and raised in Barrow, Alaska, and has also lived in Anaktuvuk Pass in the Brooks Range. In her free-time she enjoys spending time with family, traveling, mentoring youth, learning new things and participating in cultural activities such as whaling, one of her favorite events.

North Slope Iñupiaq community aims to speak as one

A new nonprofit corporation has taken shape on the North Slope, bringing together the leadership of 20 organizations from the region with the goal of providing a unified front on topics ranging from engagement and advocacy to legislative outreach. Voice of the Arctic Iñupiat held its first annual meeting the second week of February to launch the corporation and set its long-term agenda.

"For decades we have watched as outside groups, some even well-intentioned, have attempted to speak for the Iñupiaq people," said Rex A. Rock Sr., VOAI board chairman. "With the formation of Voice of the Arctic Iñupiat, we begin to communicate collectively on a wide variety of issues that affect our way of life, our traditions, our region and our future."

"The people of the North Slope have very similar interests, whether you live in my hometown of Point Hope or Anaktuvuk Pass," added Sayers Tuzroyluk Sr., VOAI president. "Until now, there just hasn't been a vehicle for us to come together and find ways of protecting those interests. I'm excited to see Voice of the Arctic Iñupiat up and running with the promise to live up to its potential."

The goals of VOAI include addressing and participating in legislation, increasing communication and information-sharing among all Iñupiat organizations of the North Slope, promoting Iñupiat stewardship of the region and to provide local advocacy and engagement for the Iñupiat to local, state, federal and international forums.

VOAI membership organizations include Arctic Slope Native Assoc., Arctic Slope Regional Corp., Atqasuk Corp., City of Anaktuvuk Pass, City of Atqasuk, City of Barrow, City of Kaktovik, City of Point Hope, City of Wainwright, Ilisa vik College, Kaktovik Iñupiat Corp., Native Village of Atqasuk, Native Village of Point Hope, Native Village of Point Lay, Wainwright Tribal Council, North Slope Borough, Nunamiut Corp., Olgoonik Corp., Tikigaq Corp. and Ukpea vik Iñupiat Corp.

Lam Nguyen-Bull of Foss Maritime honored with award

Foss Maritime's Vice President, General Counsel and Chief Ethics Officer Lam Nguyen-Bull has been named 2016 Diversity Champion by the Puget Sound Business Journal's 2016 Corporate Counsel Awards committee. The award recognizes Nguyen-Bull for her efforts in supporting diversity in the community, in the legal profession and in the maritime industry.

PSBJ's annual awards honor in-house attorneys who are helping drive business throughout the region. They highlight outstanding work and emphasize the value these professionals bring to their organizations.

see **OIL PATCH BITS** *page 17*

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

All of the companies listed above advertise on a regular basis with Petroleum News

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OLSON Q&A

also found out nobody in the country can make it. At this time there are three or four facilities primarily in the Far East who can make it. The second thing they pinned down for us is they can only haul two joints of pipe per trailer instead of three. What that does is it takes the number of trips taking pipe up north from 100,000 to 150,000. I have no idea what the cost is on that or the cost on the pipe itself. To me it looks like an exercise in futility.

Petroleum News: To study it?

Olson: Yes.

Petroleum News: Now (ExxonMobil's) Steve Butt says if there was a time to review the line sizes, it would be now.

Olson: Well, it did slow things down, maybe not materially: seven or eight months. We should have some final work product in the next month or so, if I'm not mistaken. Oh, the increase in volume between the two lines is 1.1 billion cubic feet a day. That's about the offtake at Point Thomson approved by AOGCC so it appears to me that we would have to find another Point Thomson size field that we could tie into the line to use up that capacity or a whole bunch of smaller ones. We can do it by different compressors with the 42-inch line.

Petroleum News: One of the concerns about the smaller line is that it would discourage independent exploration.

Olson: Well, I've been hearing that on various lines all along, but right now we don't have the demand for the capacity for a 48-inch line. Again, we can compress it with the 42-inch line and do some looping too. We can bring more capacity on as we need it. The question is do we need to build a Cadillac when a smaller sized vehicle will be adequate. A whole bunch of people may disagree with me.

Petroleum News: So was it wasted money looking into the line or does it fortify your position a little bit more?

Olson: I think both. I was surprised that there weren't a lot of positive things about it. Number one, the 48-inch is going to be difficult to use across Cook Inlet because of the weight. The 42-inch is considerably lighter and will lay on the bottom better apparently and that was addressed at length. It just doesn't rest well on the bottom. Having not been to the bottom of Cook Inlet, I don't know what it looks like, but I've come to the conclusion that it's not flat.

Petroleum News: There was an earthquake recently that hit the Kenai Peninsula. Does that factor into your considerations about a line as discussions progress?

Olson: First off, the fault runs off the other side of the inlet. We had no damage in Nikiski. It was at least 10 miles below the gas fields, the original gas fields. Having been out to the site in Nikiski and having seen presentations they put on to the general public as well, they've spent a tremendous amount of time on that as they are with the siting of the new LNG plant out there. It's basically for that reason. They've been looking for proper gravel. The weight of the structure itself is tremendous. They have to do it right and part of it is will it take the stress for earthquakes. The difference is, I don't think there is coal clay like there is at the end of Turnagain on the Spenard side. But really the only road damage we had was about 10 to 15 miles from Nikiski.

Petroleum News: Also, closer to home, what are you seeing with the land purchases by the AKLNG partners. Is it where it needs to be?

Olson: One of the first things I did was ask to see if they were trying to exercise eminent domain on some of the purchases. They have essentially been consensual. I personally hear of one person who was upset (with the offer on the land) but that was rectified. It's not my district. It's Speaker Chenault's district. But probably over half the people who work there live in my district. Half the people in his district shop in mine. It's one extremely close area; the communities really blend together. We are seeing lots of expansion out there.

I know one of the concerns of the Kenai Peninsula Borough is how the PILT turns out because it will have some real impact not only on the roads and the traffic flow during the construction phases, but also the number of workers we'll have living down there. It's not the first time because we had it when the Tesoro plant was built and then when all of the platforms were going up, so we know what we're getting into.

Petroleum News: Are you keeping an eye how this is playing out?

Olson: I talk to (borough Mayor) Mike Navarre and (assistant) Larry Persily on a regular basis.

Petroleum News: What concerns do you have? Is it the amount of money? Is it how it's going to be paid out?

Olson: How it's going to be divvied up. We hear Fairbanks has 2 miles of pipe and is considering going into annex unincorporated areas. I hear they are making some pretty creative demands. I think we can back up all of our positions. I would like to think Fairbanks can as well. Things were different when TAPS was built and there was a lot more going on in Fairbanks than going on at this time, even though it will be a hub. We'll see how it plays out. That's why we have a group of mayors that are negotiating on it because they are much closer to it than we are.

Petroleum News: Does it help to have a mayor (Navarre, a former member of the Legislature) who has been in these halls, even if he's in his last term?

Olson: Tremendously, yeah. He's got Larry Persily and Paul Ostrander, both for us are real good to work with. Mike is knowledgeable and I think he's doing a good job. I should add I voted for him during his first race for the House in 1984.

Petroleum News: So, still on AKLNG, was there anything else that stood out for you? Did you have any concerns about the letter the governor wrote?

Olson: I did when I first read it, but after I talked to some people, I learned this has been going on for quite a while. We'll see how this plays out. I'm not going to lose any sleep over it.

Petroleum News: What concerns go you have about the project?

Olson: My biggest concern is the AGDC board is pretty loaded up with former Port Authority people.

Petroleum News: Does that surprise you to know that a governor has the prerogative to make these changes?

Olson: I don't think I've seen it done to this degree. With two previous governors we saw an effort to go out and get the best. Oftentimes it wasn't people from the same party as the governor, either.

Petroleum News: Speaking of AGDC there are bills out there to add two members of the Legislature on the board. How do you feel about that, putting two more people on the board?

Olson: I think it might give it a little more balance than it's had. I certainly don't have a problem with it.

Petroleum News: Do you see it as a response to Walker's assembly of the board?

Olson: I think every bill before us is a response to something. Actually, I think we are hearing several of the governor's bills (in Labor and Commerce).

Petroleum News: So what gives you optimism that the project is moving forward?

Olson: We've never been this far. I am cautiously optimistic that we will hit FEED (front end engineering and design) hopefully sooner rather than later. That's when we get past our first giant hurdle. Pre-FEED is a big step, but this is when we start talking about real money.

If you look at the three major producers who are involved, all of them have other ventures around the world. I think all three of them had ventures that shut down that started out roughly the same time as ours — or at least temporarily shelved.

You know, I was glad to see TransCanada out of it. I had mixed feelings on it originally but the further we got into it, I became OK with it. I didn't like them there in the first place. I think that they were the only ones in the position to bid at the time (during AGIA). There were at least two or three other companies from the U.S. or Canada who could have done as good a job and could have been more competitive. Other than that, I'm still an optimist.

Petroleum News: The producers still have to do one thing that's out of control of the Legislature and that's the gas balancing?

Olson: One of the most honest quotes I heard the last five to seven years in this building when somebody from TransCanada (former CEO Hal Kvisle) was asked when do you know it will be time to build the pipeline and his answer was it will be time when Exxon says it will be time. That was one of the most honest answers on that issue all along. He was spot on and I believe that's the way he felt. It certainly resonated.

Petroleum News: What would you like to hear that the project is moving forward?

Olson: Whatever I hear I would hope it's not followed by a letter to the contrary. I would like to see everybody working together a little bit better. We get our hackles up. The governor gets his hackles up. If everybody is not on the same page, it's not going to happen. I thought we were there a few months ago. I guess we were still there but not to the degree we were. Everybody was speaking with one tongue. They would look around the room and everybody was nodding their head. Nobody is going to get their way on every issue. ●

Contact Steve Quinn at squinnwrite@gmail.com

PIPELINES & DOWNSTREAM

Pipeline criticism 'half-baked'

Regulatory hearings on Kinder Morgan's plans to triple capacity on its Trans Mountain crude pipeline system wrapped up to the sound of a final withering blast at opponents from the Canadian Association of Petroleum Producers, the industry's leading mouthpiece.

In asking the National Energy Board to approve the C$5.4 billion plan to raise shipments of oil sands bitumen to 890,000 barrels per day from 300,000 bpd, a lawyer for CAPP said "denial of the project would be detrimental to Canada's oil producers, to Alberta and to Canada."

Nick Schultz urged the NEB to weigh the benefits of the pipeline to the economy and to disregard some of the evidence against the pipeline.

"You do have some half-baked, so-called evidence in the Gunton report" by Professor Thomas Gunton of Vancouver's Simon Fraser University that claimed there is a 99 percent likelihood of an oil spill in British Columbia if the expansion proceeds, he said.

Schultz said the report misquotes CAPP data and forecasts and should not be viewed by the NEB as important evidence as it arrives at a recommendation.

The Gunton report also claimed Kinder Morgan's application "contains major methodological weaknesses that do not provide an accurate assessment of the degree of risk associated" with the pipeline.

Schultz also said the NEB panel had been subjected to "unfair criticism" during the hearings by those who regarded the proceedings as broken, unfair and biased in favor of Kinder Morgan.

He said some of those comments amounted to "abusive behavior," which he described as "shameful."

Schultz said the NEB received "comprehensive and detailed evidence" on which to base its recommendation.

—GARY PARK

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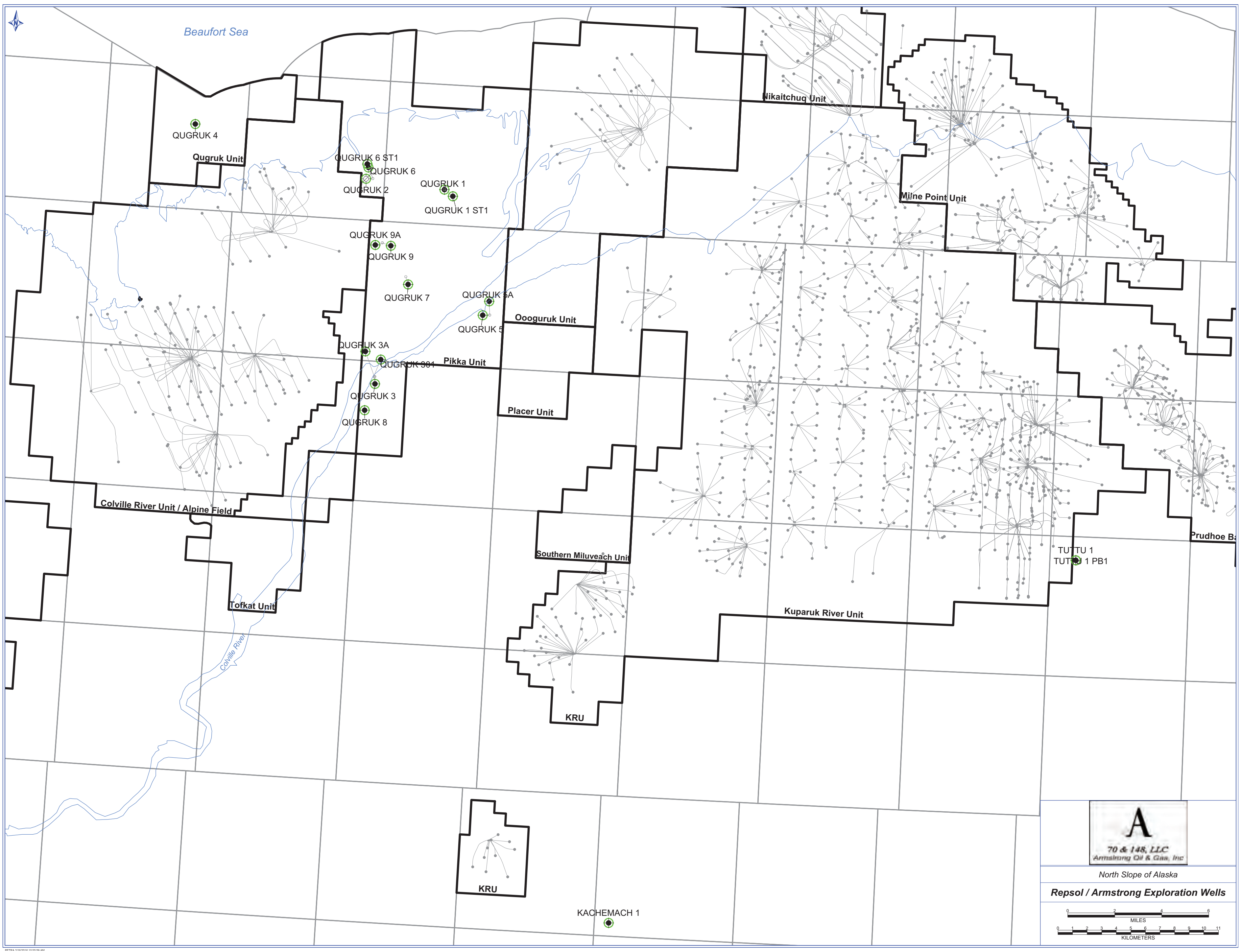
OIL PATCH BITS

"Lam's dedication to inclusiveness and her involvement is impressive," said Paul Stevens, president and chief executive officer of Foss. "I'm glad to see her recognized for her tireless efforts and proud to have her on our executive team."

Nguyen-Bull serves on the board of PeaceTrees Vietnam, a humanitarian organization working in central Vietnam to assist those whose lives and livelihoods are threatened by the explosive remnants of war. In addition, she co-chaired the Joint Asian Judicial Evaluation Committee in 2015, and is the former president of the Vietnamese American Bar Association of Washington. Nguyen-Bull is a current board member of the Asian Bar Association of Washington, and interim chair on the Governing Council of the Washington Initiative for Diversity.

Editor's note: All of these news items — some in expanded form — will appear in the next Arctic Oil & Gas Directory, a full color magazine that serves as a marketing tool for Petroleum News' contracted advertisers. The next edition will be released in March.



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PIKKA UNIT

In a Feb. 14 email to Petroleum News Myers said, "the proven contingent oil reserve number makes the discovery the largest since the Alpine field, the probable contingent reserve number the largest since the Kuparuk field, and the possible contingent number makes the discovery the largest since Prudhoe," with one caveat: The "discovery" is "multiple different reservoirs, not just one major reservoir as in the case of the original Kuparuk and Alpine discoveries."


MARK MYERS

Myers, who resigned as commissioner Feb. 16, is "very excited" to see Pikka development moving forward."

Peak output 120,000-plus barrels per day

At its peak, daily oil production rates within the Pikka unit is expected to be 120,000 barrels of oil per day, Armstrong's top executive and founder Bill Armstrong told Petroleum News in a recent interview.

Whereas Myers couldn't verify the total daily production potential from information that has been publicly released, which is all he felt comfortable commenting on, he did say in an email to Petroleum News, "assuming that these numbers — reported by Petroleum News Oct 18 — are accurate, a production rate of 120,000 bop/d is not unreasonable under the probable contingent reserves reported, with a peak production rate as high as 250,000 bop/d under the possible contingent reserve."

According to the Alaska Department of Revenue, the state currently produces about 515,000 bop/d, almost all of which comes from the North Slope.

Although Armstrong officials said they have shown Myers its well logs and geophysical data, "the well and seismic information remain confidential," Myers said, "so I can only comment based upon what Armstrong and Repsol have made public" following delineation drilling in the Pikka unit last winter.

"They have reported a very significant oil discovery in the Jurassic Alpine sandstone which … was encountered in four of their wells," he said.

"Additionally they have made a major oil discovery in the Cretaceous Nanushuk formation, which they have encountered in seven wells," Myers said.

The Nanushuk pool has a 650-foot-plus oil column, good porosity and 150-foot thick net pay according to Myers.

"We have multiple other horizons that we plan to develop: at least six different zones. That said, our Nanushuk and Alpine are the biggest at this time," and those will be developed first, Bill Armstrong said.

In total, Armstrong and Repsol have reported contingent oil reserves of proven 497 million barrels, probable contingent reserves of 1.4 billion barrels, and possible contingent reserves of 3.7 billion barrels, Myers said.

Oil expected to flow in 2021

The state approved the 63,304-acre Pikka unit in June.

Pikka, which sits between the Colville River unit (Alpine and satellites) to the west, the Oooguruk unit to the northeast and the Kuparuk River unit to the east, includes 33 state and joint state and Arctic Slope Regional Corp. leases (see map in pdf of this article).

The Native surface ownership belongs to the Native village corporation in Nuiqsut, Kuukpik Corp., and the subsurface is shared by the state of Alaska and the regional Native corporation, Arctic Slope Regional Corp. Kuukpik is involved in oil and gas surface leasing in the area, and both it and ASRC, mainly through subsidiaries, are providers of oilfield support services.

"With construction slated to begin with the completion of the ongoing EIS, Pikka oil should start flowing in 2021, assuming no large delays," Bill Armstrong said.

Several forecasts put crude above $50 a barrel at that time, which is what the Department of Revenue estimates it costs to produce oil on the North Slope.

After 16 years in the state, starting with the discovery and subsequent development of the 225 million-barrel Oooguruk field in 2000, Bill Armstrong is still betting on Alaska.

see **PIKKA UNIT** *page 19*

Corps plans EIS for Nanushuk development

The U.S. Army Corps of Engineers has determined that it will do an environmental impact statement for the proposed Nanushuk development in the Pikka unit on Alaska's North Slope.

In documents posted on the website established for the project (www.nanushukeis.com/projects/nanushuk) the agency said it will hold public meetings on the project in Nuiqsut and Barrow in March and in Anchorage and Fairbanks in April.

Repsol is in the process of handing over operatorship to Armstrong Oil and Gas. The Corps responded to an application from Repsol E&P USA Inc. to place fill in wetlands to develop oil near the Colville River some 7.5 miles northeast of Nuiqsut.

The Corps said that in initiating the National Environmental Policy Act review process it has determined that an EIS level analysis will be required for the proposed project. NEPA requires agencies to prepare an EIS "when an action may significantly affect the quality of the physical and human environment," the agency said on the website it has established for the project.

The Corps is the lead federal agency. The U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Alaska Department of Natural Resources, North Star Borough and Native Village of Nuiqsut have been invited to participate as cooperating agencies.

—PETROLEUM NEWS

"Alaska finally has a fiscal policy in place that is working — promoting oil and gas exploration, development and production — but if state officials panic during this temporary price collapse and do something like raise taxes or do away with incentives, it could delay our project, maybe even permanently. And this is when the state needs the future revenues the most and when unemployed Alaskans need it the most."
—Bill Armstrong

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PIKKA UNIT

Nanushuk a new play for North Slope

"The Nanushuk is a new and different play for the North Slope, notable for even thicker pay than that discovered in the Alpine reservoir and at such a shallow depth (4,100 feet as compared to 6,500 feet)," Bill Armstrong said.

"That's what makes it so exciting. Nobody has seen this formation productive in this depositional environment before. You look at how thick it is, how good the oil is, how good the reservoir is — it all bodes really well for the play," he said.

More than 15 years ago when Myers was working for ARCO Alaska as an exploration geologist in the area, "we saw very good evidence for the Nanushuk oil that Armstrong and Repsol have identified and delineated. At that time we had no idea of the size of the accumulation and shortly later the company," predecessor to ConocoPhillips Alaska, exited the area.

"It is wonderful to see Armstrong's aggressive exploration approach and their huge success," Myers said.

More North Slope discoveries out there

The Armstrong-Repsol exploration program has drilled a total of 16 wells on less than 10 percent of the partners' 750,000 North Slope acres.

Very few people predicted, as Armstrong and Myers did, that reservoirs the size found at Pikka could still be discovered in Alaska.

More importantly, Bill Armstrong noted, "there are more fields out there to be found."

But, he said, it is going to take a fiscal policy with incentives, such as the one currently in place, to find them.

"Excuse the grammar, but there is one irrefutable fact in oil exploration — every well not drilled doesn't find oil."

Armstrong is not alone in his thinking.

As the former head of the U.S. Geologic Survey and Alaska's Division of Oil and Gas, Myers repeatedly credited the discoveries Armstrong and other explorers made on the North Slope in recent years to the incentives offered by the state of Alaska.

Doing business in Alaska risky

Speaking of the state's fiscal regime, the biggest threat to Pikka field development, Bill Armstrong told Petroleum News Feb. 12, would be a detrimental change in Alaska's fiscal policy — action some state officials are threatening in the face of shrinking state revenues because of low crude prices.

"Alaska finally has a fiscal policy that is working — promoting oil and gas exploration, development and production — but if state officials panic during this temporary price collapse and do something like raise taxes or do away with incentives, it could delay our project, maybe even per-

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CD5 DRILL SITE

The winter ice road

A media tour of CD5 on Feb. 9 involved a drive along a 25-mile ice road, west from the Kuparuk River unit to the central processing facility for the Alpine field. The Alpine facility, on the first drill site constructed in the Colville River unit, was built without a permanent road connection to the central North Slope. The roadless design, coupled with a relatively small gravel drill site, minimizes the environmental impact of the development.

ALAN BAILEY

James Brodie, ConocoPhillips capital projects manager for the National Petroleum Reserve-Alaska, with the new road bridge across the Nigliq channel of the Colville River in the background. Brodie said that a road connection between the Alpine central processing facility and the new CD5 drill site is essential for emergency response support.

James Brodie, ConocoPhillips capital projects manager for NPR-A, explained that when the ice road melts during the summer, all trace of the road disappears. The road costs about $20 million to build each year, he said. The road route, elevated slightly above the surrounding tundra, is marked by a series of vertical posts, designed to ensure that no vehicle loses its way when traveling the route in poor visibility. At one point, the road crosses a 4,000-foot ice bridge, constructed across a channel of the Colville River. Brodie said that the ice of the bridge is about 11 feet thick and that water continues to flow under the ice, even in the depths of the winter.

ALAN BAILEY

Isaac Nukapigak, president of Kuukpik Corp.

Although an airstrip at the Alpine facility enables air transportation to and from the facility during the summer, the winter ice road enables the transportation of heavy equipment such as drilling rigs, essential for field development and maintenance.

Kuukpik supports responsible development

Kuukpik Corp., the Native corporation for the village of Nuiqsut, supports the responsible development of oil and gas, Isaac Nukapigak, the corporation's president, told reporters on Feb. 9 during a media tour of ConocoPhillips' new CD5 development in the National Petroleum Reserve-Alaska. CD5 is located on Kuukpik surface land and produces oil from subsurface, much of which belongs to Native regional corporation Arctic Slope Regional Corp. Kuukpik has a land use agreement with ConocoPhillips, Nukapigak said.

Nuiqsut is located near the central processing facility for the Alpine field, immediately east of CD5. For many years the villagers, while gaining economic benefits from the North Slope oil industry, have also been concerned about the impacts of the industry on their subsistence lifestyle.

Nukapigak said that the villagers had initially been particularly worried about the proposed location of a bridge that would carry the road from Alpine to the CD5 site over a major channel of the Colville River — the villagers conduct subsistence fishing in the river. With the use of traditional knowledge, the locals worked with ConocoPhillips to identify a more suitable site for the bridge, Nukapigak said. Village elders are familiar with the Colville landscape and could also, for example, help ensure that roads would be located safely in an area that is a river floodplain, he said.

And with the oil development generating local income through taxes and contracting opportunities, responsible development can be a win-win for all involved, Nukapigak said. Moreover, with development happening, the local people need to be involved in decision making and the permitting process.

"Having a seat at the table is the way to come," Nukapigak said.

—ALAN BAILEY

Gravel road to drill site

A six-mile gravel road now connects the Alpine central facility to the new CD5 drill site to the west. The road crosses several bridges across channels of the Colville River, including a 1,405-foot span across the river's Nigliq channel. As part of the permitting for the CD5 development, the question of having permanent road access to the drill site, the siting of the road, as well as questions around the need for and siting of the Nigliq channel bridge, all proved contentious and resulted in significant delays in obtaining government approval for the CD5 development.

Brodie said that a gravel road connection between CD5 and the Alpine central processing facility is critical to safety because emergency response equipment is located at the central facility. The ability to effectively respond to an emergency situation requires a road connection, he said.

Four pipelines, running parallel to the road, carry water and natural gas to CD5, for oil production use, and carry produced fluids from the drill site to the Alpine central facility for processing. Processed crude oil, mixed with other crude from the various Colville Delta unit drill sites, is transported by pipeline to pump station 1 of the trans-Alaska oil pipeline, for shipment south to market.

Local concerns

Villagers from the nearby community of Nuiqsut have worried about potential impacts of the development on the subsistence resources that the community depends on — one group of villagers unsuccessfully sued the U.S Army Corps of Engineers against its permit for the development. Negotiations between the village community and ConocoPhillips resulted in a mutually agreed Nigliq bridge location that addresses the community subsistence concerns while also meeting the oil company's needs. Project features designed to minimize caribou disturbance include low reflectance paint on the pipelines and adequate spacing between the pipeline and the road.

Drilling progresses

Towering over the CD5 drill site is the derrick of the Doyon No. 19 drilling rig. At the time of the media tour the rig was engaged in the drilling of the ninth of the 15 wells that ConocoPhillips plans for the initial development at the site. It should take about 150 days to drill the remainder of the wells, with production from CD-5 peaking in the first quarter of 2017, Brodie said.

Wells are horizontal within the subsurface oil reservoir, with water and gas being alternately injected from injection wells for enhanced oil recovery. The drill site has been sized for the drilling of up to 33 wells.

Each well is connected into a lattice of pipework that connects to the pipelines that parallel the road to the Alpine central processing facility.

Successful project

Brodie commented that CD5 has proved to be a particularly successful venture for ConocoPhillips, with startup being delivered two months ahead of schedule and some 7 percent under estimated cost. The wells drilled so far have proved better than expected, he said.

With CD5 production coming on line in the fourth quarter of 2015, that year saw the first year-on-year production growth from Alpine since 2006, Brodie said. ConocoPhillips has said that it anticipates peak production of about 16,000 barrels per day from CD5.

Data published by the Alaska Oil and Gas Conservation Commission shows production from CD5 increasing rapidly between October and November. CD5 produced 470,856 barrels of oil in December, a production rate that averages to 15,188 barrels per day. By comparison, December production from the rest of the Colville River unit was 880,503 barrels.

Scott Jepsen, ConocoPhillips vice president external affairs, characterized CD5 as a milestone project for his company, an around $1 billion investment that represents a gateway into NPR-A. At peak, some 700 people were working on the project, he said. Looking farther west in NPR-A, ConocoPhillips is now moving ahead with new development in the Greater Mooses Tooth unit: In November 2015 the company sanctioned development of the GMT-1 well site and the company is in the process of permitting GMT-2.

GMT-1 will likely produce about 30,000 barrels per day of oil, Jepsen said.

Safety a priority

Both Brodie and Jepsen emphasized the priority that ConocoPhillips places on workplace safety, a priority emphasized by safety briefings and the mandated use of personal safety equipment ranging from safety glasses and helmets to shoe cleats when walking outside.

"Safety is our core value," Jepsen said. "We don't do it unless we know it can be done safely. It's that simple." ●

Contact Alan Bailey at abailey@petroleumnews.com

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PIKKA UNIT

manently. And this is when the state needs the future revenues the most and when unemployed Alaskans need it the most," Bill Armstrong said.

There are a few tweaks that could improve the state's fiscal policy in terms of encouraging more oil production, he noted, but basically the current regime is working.

"Alaska can't seem to get out of its own way," he said, referring to an annual push in the state capitol by various factions to increase the burden on the state's prime moneymaker, the oil industry.

"Once a fiscal regime is working for all parties, why keep threatening to change it?" Armstrong asked.

The price of oil has always been cyclical, he said. "We all have to tighten our belts, but to panic in the short term by raising taxes and eliminating incentives is counterintuitive when the oil industry is currently debating dropping or delaying developments due to low prices."

Other oil provinces lowering taxes, costs

Other oil provinces around the world,

> *"The proven contingent oil reserve number makes the discovery the largest since the Alpine field, the probable contingent reserve number the largest since the Kuparuk field, and the possible contingent number makes the discovery the largest since Prudhoe."*
> ***—Mark Myers***

such as Scotland for the North Sea, Mexico and Iran, are lowering, or looking at lowering, the burden on the oil and gas industry while prices are low.

But Armstrong is not asking for lower taxes from the state of Alaska.

If the state of Alaska "does not change the rules in the middle of the game," Armstrong is willing to bet crude prices will eventually come back up, so starting field development makes sense to Bill Armstrong and his partners.

"We are starting all of our important EIS, pre-FEED (preliminary front end engineering and design) work, planning, etc. now. We can't and won't be able to start the actual development until we get the green light from the EIS and other approvals," he said.

The company does plan to drill one extension/appraisal well in the Pikka unit next winter, however, at an estimated cost of $40 million, he said.

Three gravel pads and roadblocks

"With record pay thicknesses and excellent reservoir parameters," Armstrong has modeled the Pikka unit's Nanushuk and Alpine wells "to produce at high rates for a long time, and to have EURs (estimated ultimate recoveries) that should exceed 10 million barrels per well," Bill Armstrong said.

Proposed development plans have not changed since Repsol's initial filing for a U.S. Army Corps of Engineers permit on June 15 for what agency paperwork refers to as the Nanushuk project. The company expressed its willingness to submit to the Environmental Impact Statement process early on.

"We — Repsol and Armstrong — made the conscious decision to go with an EIS as opposed to just an EA as this was encouraged by the Native corporation ASRC, the DNR and others. We are willing to work with all parties," Bill Armstrong told Petroleum News after the Alaska Dispatch published a Feb. 15 article about the EIS.

The project, which proposes to develop the Nanushuk and Alpine reservoirs in the Pikka unit, will be located near the east channel of the Colville River, with two of the three proposed gravel drill sites a half a mile away.

The subsurface of the leasehold is perennially frozen at depths from 1,500-to-2,000 feet.

There is already field development by ConocoPhillips at nearby Alpine (Colville River unit), which sits in the Colville River Delta and has five gravel pads, versus Repsol and Armstrong's proposed three pads.

"There is a long history of oil development in the North Slope between the Sagavanirktok River and the Colville River," the Corps said in its EIS determination. "Therefore the proposed project would be similar to past, present and foreseeable developments and would not establish a precedent."

Field construction includes 76 wells

Armstrong and Repsol's proposed field construction includes the following major components:

- Seventy-six production and injection wells;
- A 23-acre Nanushuk pad at Drill Site 1 contains a central processing facility, CPF1, to separate water and natural gas from oil and natural gas liquids;
- Two additional standalone gravel pads on 35 total acres, at DS2 and DS3;
- A 10-acre operations center pad;
- A 0.6 acre tie-in pad at CPF2, connecting new infrastructure to existing Kuparuk facilities;
- Access and infield gravel roads, 25 miles combined;
- Bridge over the Miluveach River, 337-foot span, and the Kachemach River, 330-foot span;
- Fourteen miles of infield pipelines on vertical support members;
- The 21.5-mile Nanushuk pipeline on vertical support members;
- A potable water intake system;
- A screeding area in front of the existing Oliktok Dock;
- A wastewater and water treatment plant;
- Trenching for power and fiber optic cables at pipeline-road crossings.

Sales quality oil will be transported through the new export pipeline to the Kuparuk oil sales pipeline, and then to the trans-Alaska oil pipeline.

A secondary purpose of the Nanushuk project is to further delineate geologic features and hydrocarbon accumulations in Repsol and Armstrong's leasehold from the proposed infrastructure.

In a recent AAPG Explorers article, David Houseknecht, senior research geologist and project chief for USGS' Energy Resources Program in Alaska, said the Alpine field "remains the largest onshore accumulation discovered in the last 30 years in the United States, and, it is almost certain to produce more than 1 billion barrels of oil during its lifetime."

It appears Armstrong and Repsol's Pikka unit will surpass Alpine and, as Myers said, has the potential to be second in size to Prudhoe Bay.

Time will tell. ●

Editor's note: A recent Reuters article about Scotland's finance minister encouraging British Chancellor George Osborn to lower oil and gas taxes for North Sea operators can be found at http://yhoo.it/1Km6dAO EIS documents, including maps, can be found online at http://www.nanushukeis.com/projects/nanushuk/index.html

Contact Kay Cashman at publisher@petroleumnews.com