# Petroleum news

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**page 6** FERC filing in for Delta Junction cogeneration wind-battery project

## Jade gets Sourdough approval; Looking for the Spartan 151; Elixir loans on federal leases


**PER A FEB. 20 EMAIL FROM ERIK OPSTAD**, member-manager of Jade Energy LLC, the Point Thomson unit owners have received approval from the Alaska Department of Natural Resources' Division of Oil and Gas for Jade's plans to drill a new well in the first quarter of 2020 on ADL 343112 in area F of the unit, The lease, the most southeasterly in Point Thomson and adjacent to the western border of the ANWR 1002 area, holds two mid-1990's Sourdough oil discovery wells. Jade is part owner of the lease, per a farm-out agree-

*see* **INSIDER** *page 12*

## Still no gas from Kitchen Lights; Enstar issued default notice

Enstar is still not receiving any gas from Furie Operating Alaska's Kitchen Lights gas field, Lindsay Hobson, Enstar communications manager, told Petroleum News in a Feb. 20 email. As previously reported in Petroleum News, starting in early January Furie began experiencing problems with the Kitchen Lights gas delivery system, apparently as a consequence of hydrates blocking the subsea pipeline from the field's offshore platform.

In a Feb. 20 email, Scott Pinsonnault, Furie chief operating officer, confirmed to Petroleum News that no gas is being shipped from Kitchen Lights at present because of the hydrate obstruction, but he said that his company is "prepared to open

*see* **GAS DELIVERY** *page 8*

## French on administrative leave; hearing finding goes to governor

Hearing Officer Timothy Petumenos has submitted findings from the Feb. 6-8 hearing on the notice of charges and cause for removal of Alaska Oil and Gas Conservation Commission Chair Hollis French issued by Gov. Mike Dunleavy Jan. 17.

Under Alaska statutes French was entitled to a public hearing "to determine if there was substantial evidence to support removal for cause," Petumenos said in his findings of fact. French contested the charges and requested the public hearing.

The findings, dated Feb. 12, only became available to Petroleum News after the paper's Feb. 17 issue went to press.

Alaska Public Media's Alaska's Energy Desk reported Feb.

*see* **FRENCH HEARING** *page 8*

## Homer uses less gas than expected; rate of return cut to accommodate

Enstar Natural Gas Co. has made a tariff filing with the Regulatory Commission of Alaska requesting approval of a change in the manner in which it recovers the cost of providing natural gas supplies to the city of Homer in the southern Kenai Peninsula. The requested change is a response to the fact that Homer natural gas demand has proven lower than Enstar had projected when the company built a 22-mile gas distribution pipeline to the city in 2013. The idea behind the pipeline was to make natural gas available in the Homer area for the heating of buildings.

The state provided a grant of $8.1 million towards the $10.7 million cost of the pipeline, on the understanding that Homer gas consumers would pay a $1 per thousand cubic feet surcharge on

*see* **HOMER GAS** *page 7*

EXPLORATION & PRODUCTION

# Oil Search beams

*Thickest Nanushuk yet; $3B net new spend for Pikka; Grizzly prospect next?*

**By KAY CASHMAN**
*Petroleum News*

In their 2018 annual results presentation to investors and analysts on Feb. 18, Oil Search executives said the Nanushuk reservoir encountered in this winter's Pikka B well was the thickest to date; that the company expects to invest $3 billion in Pikka development from 2019 to production in 2023; a third working interest partner will be brought into Pikka, Horseshoe and nearby leases and Oil Search will be increasing its overall stake to 30 to 35 percent.

They also said new seismic acquisition is planned for the 2019-20 season; that 2020 drilling will help them decide if Horseshoe will require a standalone processing facility or will be a tie-back to Pikka; and that the next in a series of oil prospects to be explored and possibly developed might be Grizzly, south and east of Horseshoe.

> *The $3 billion the company estimates it will spend on Pikka development from 2019 to production in 2023 represents a 35 percent equity position. …"We view it (as a) … fairly conservative construction cost." —Stephen Gardiner, CFO*

*see* **OIL SEARCH** *page 11*

EXPLORATION & PRODUCTION

# More future oil demand

*BP Energy Outlook anticipates growing need despite carbon emissions challenge*

**By ALAN BAILEY**
*Petroleum News*

When introducing this year's BP Energy Outlook in mid-February, Spencer Dale, BP group chief economist, expressed a theme that his company has been promoting in recent months.

"The biggest theme that comes out of this year's Energy Outlook is the dual challenge, the need for more energy and less carbon," Dale said.

Human development in the poorest parts of the world is inherently linked to increased energy consumption. At the same time, the current trajectory for energy supply and usage will not meet goals for reducing carbon emissions. And whatever realistic trajectory future energy demand and supply takes, oil demand is set to increase, with supplies of almost all fuels needing to grow between now and 2040, the timeframe for the Energy Outlook's analysis, Dale said.

The Energy Outlook sees a rapid increase in the use of renewable energy, in particular wind and solar, with this type of energy source penetrating the global energy system more rapidly than any fuel in history.

The Outlook sees future growth in energy

> *And one change since last year's Energy Outlook is a view that India rather than China will see the fastest growth in energy needs.*

*see* **ENERGY OUTLOOK** *page 10*

NATURAL GAS

# No plans to quit

*LNG Canada says it will complete project while TransCanada shows signs of doubt*

**By GARY PARK**
*For Petroleum News*

LNG Canada has no intention of caving in to opponents of its mega-LNG venture, relying instead on the approval of all 20 elected First Nations along the 400-mile Coastal GasLink pipeline from northeastern British Columbia to the export terminal at Kitimat on the northern B.C. coast.

"Regardless of the headlines and the protests, LNG Canada has every intention of completing our project," the consortium Chief Executive Officer Andy Caditz told an audience in Prince George.

He promised to deliver on commitments of jobs and economic benefits for First Nations, as well as local residents and trades people across northern B.C.

The 20 indigenous communities that have lined up with LNG Canada have been conditionally awarded C$620 million in contracts, of which more than C$175 million in contracts and sub-contracts have been issued.

"There is far too much at stake for LNG Canada not to defend our project," Caditz said. "LNG Canada respects the rights of individuals to peacefully express their point of view, as long as their activities don't jeopardize the safety of people and are within the law."

### Protest camp dismantled

That was an indirect reference to a protest camp established by Unist'ot'en leaders to close off

*see* **LNG CANADA** *page 12*

● EXPLORATION & PRODUCTION

# Pantheon prepares to test Alkaid well

*London-based company that merged 51/49 with Great Bear subsidiaries reports Winx 1 exploration well drilling progress*

By KAY CASHMAN
*Petroleum News*

Great Bear Petroleum Operating recently filed an amendment to its 2016 lease plan of operations with the Alaska Department of Natural Resources, Division of Oil and Gas, to begin re-entry and testing of the Alkaid 1 well that was drilled, cased and suspended by Great Bear in 2015. Re-entry is expected to take place between March 1 and March 5, per the filing.

The well is on a lease that is part of 10 contiguous leases west of the Dalton Highway and five leases straddling the highway — the leases are south of Prudhoe Bay and near the trans-Alaska oil pipeline corridor.

At that time the company said it was unable to test the Alkaid 1 well in 2015 because of flooding on the highway and then after that former Gov. Bill Walker reneged on the state's promise to pay exploration credits for a portion of exploratory costs — an action that hit independents such as Great Bear particularly hard, especially with oil prices continuing to fall.

Initially, in fact, a Great Bear lease plan of operations said the company hoped to drill three wells in the Dalton Highway lease block in 2015 — Alkaid 1, Phecda 1 and Talitha 1. The proposed locations are southwest of the two vertical wells Great Bear drilled in 2012.

PATRICK GALVIN

### New exploration well in 2019?

The work commitment associated with a mid-2018 three-year term extension from the division for leases in this block consisted of re-entering and testing the Alkaid well and drilling a new exploration well in the block in 2019.

The acreage involved was recently acquired by London-based Pantheon Resources as part of its 51/49 acquisition of two Great Bear Petroleum Operating subsidiaries, Great Bear Petroleum Ventures I and II.

Pantheon is building a 2.5-mile ice road from the Dalton Highway and a 1.35-acre ice pad at the wellsite to support operations. A rig will be brought in to re-enter the suspended Alkaid 1 well, conduct a number of tests at different intervals, and plug and abandon the well unless it proves capable of economic production, Great Bear said in its filing, which was signed by the company's top executive in Alaska, Patrick Galvin, who has assumed his Great Bear position and title with Pantheon.

So what about the promised 2019 exploration well in the Dalton Highway block?

In its announcement of the recent deal with Great Bear, Pantheon said, "In the event that any wells are not drilled before the deadlines it would likely result in default; however it is believed, but not guaranteed, that the state of Alaska would grant a cure period of one year. It is also believed that other pro-active strategies are available for negotiation with the state of Alaska in this situation."

The schedule Pantheon proposed for the Alkaid well pro-

see ALKAID WELL page 5

## contents

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● EXPLORATION & PRODUCTION

# DGGS filling in the Nanushuk details

*Outcrop mapping near the Haul Road and data processing should provide new insights into seismic data from the northwestern Slope*

**By ALAN BAILEY**
*Petroleum News*

Geologists from Alaska's Division of Geological and Geophysical Surveys are using some new state-of-the-art techniques to compile detailed data about the Nanushuk and Torok formations, to help oil explorers understand the significance of what they see in seismic sections. The two formations have become a major focus for exploration efforts in the Colville River Delta region and the northeastern National Petroleum Reserve-Alaska, following major discoveries in the Pikka and Willow prospects, and at Smith Bay farther west.

In the region of exploration interest the configuration of the rocks in the subsurface must be inferred from seismic data, in particular high resolution 3-D surveys. However, interpreting this data involves uncertainty about what exactly lies hidden beneath the ground. And that uncertainty leads to exploration risk.

## Slope Mountain model

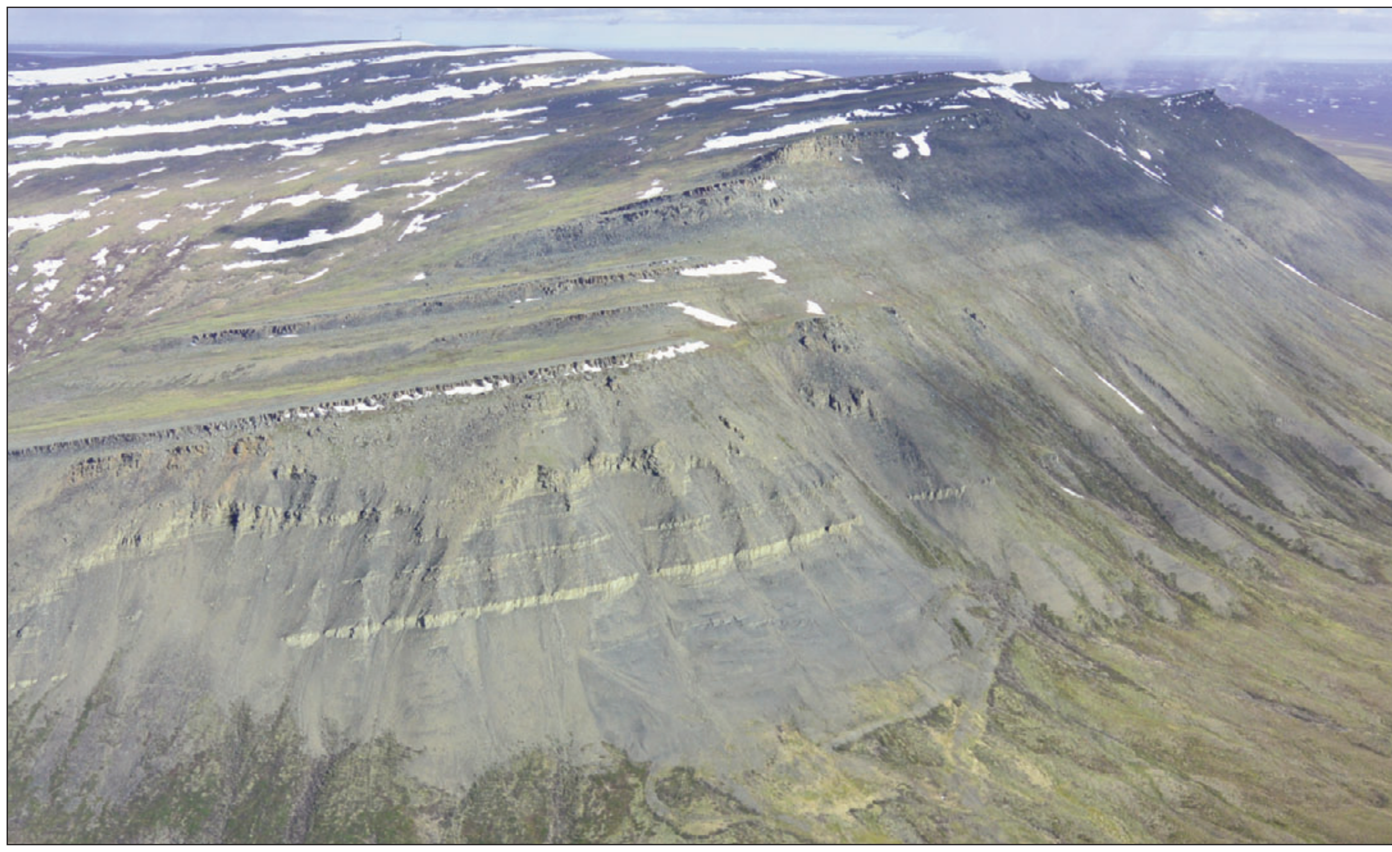
The DGGS geologists are using observations from surface outcrops of the Nanushuk and Torok on the north side of the Brooks Range, in particular a spectacular outcrop at Slope Mountain, next to the Haul Road to Prudhoe Bay. The geologists are linking these observations into what is referred to as a structure-through-motion photogrammetry survey, to construct a three-dimensional model of the Nanushuk and Torok strata at Slope Mountain. That model can in turn be used to generate artificial or synthetic seismic sections, that can be compared with seismic sections obtained from the oil exploration to the northwest. The idea is that this will provide explorers with new insights into what the seismic data are depicting.

DGGS geologist Dave LePain told Petroleum News that the exposure of the Nanushuk and Torok at Slope Mountain, the farthest east location where the formations have been observed, is particularly spectacular. There are about 2,000 feet of stratigraphy on the east face of the mountain, including the lower half of the Nanushuk and the upper 200 feet of the Torok. The rock exposure is about 2 kilometers in length, LePain said.

## Marine basin

The sediments that form the Nanushuk/Torok system were deposited from the west into what was a massive marine basin, with that basin filling from west to east. In the more northerly region of the North Slope the basin margin migrated west to east, as the basin filled. That migration ultimately ended somewhere to the east of the current Colville River — no Nanushuk and Torok are observed to the east of that ultimate shelf margin.

To the south, however, on the north side of what is now the Brooks Range, where the Nanushuk and Torok are now exposed at the surface, sediment was carried by rivers south to north into the basin from what was at the time the emerging mountain range. Thus, the shelf margin, which has more of a north-south alignment to the north, swings round into more of an east-west direction close to the Brooks Range. Hence the existence of Nanushuk and Torok strata as far east as Slope Mountain.



ALASKA DNR DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

**View toward the west showing outcrops of about 2,900 feet of Nanushuk strata above the upper few hundred feet of the Torok Formation at Slope Mountain, at approximately mile 301 of the Dalton Highway. The top of the Torok is marked by the prominent pale sandstone layer, relatively low down in the escarpment.**

LePain commented that the fact that the rocks at Slope Mountain were formed in a different basin setting than the rocks in the oil exploration area to the northwest likely results in some differences in the detailed nature of the rocks between the two regions. However, the depositional settings in the two regions were very similar, leading to an expectation that the rocks at Slope Mountain would be an effective analogue to the rocks where oil exploration is being conducted.

And, unlike the rock samples just a few inches across that can be obtained from exploration well cores, the area of rock that can be observed and sampled at Slope Mountain is massive.

## Measured sections

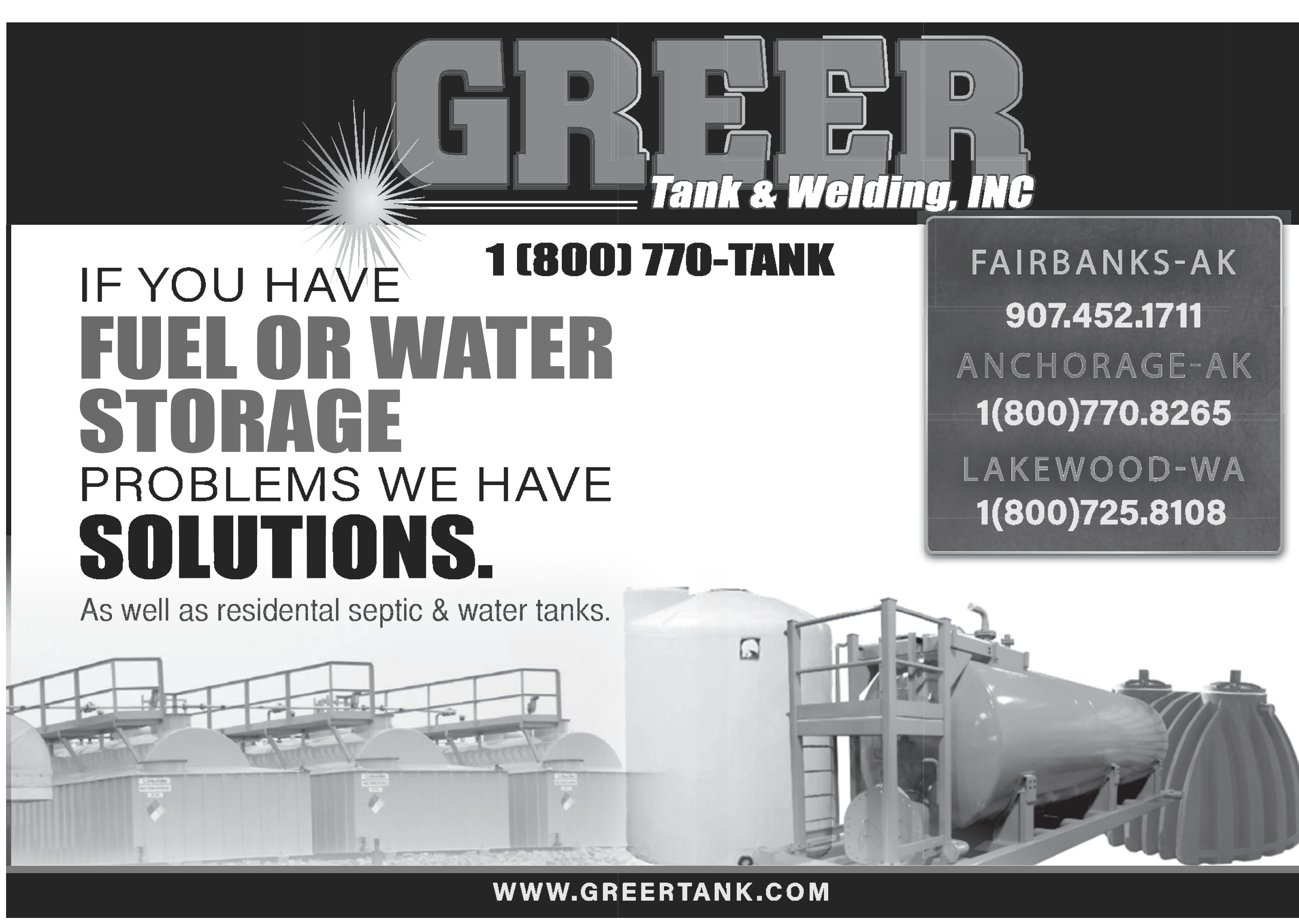
LePain has now completed three "measured sections" across the strata at Slope Mountain: He completed the first of these in 2001 and the other two last year. Obtaining a measured section involves traversing along a line across the rock strata, making detailed observations about the rocks, measuring the strata and taking rock samples. Last summer, in conjunction with this work, DGGS geologists conducted a structure-through-motion photogrammetry survey of the entire rock outcrop. It is then possible to use this survey, in conjunction with the surface observations, to construct an accurate three-dimensional model of the geology of Slope Mountain.

## Synthetic seismic

LePain said that DGGS is working with Shuvajit Bhattacharya, a petrophysicist and geophysicist at the University of

*see* **NANUSHUK DETAILS** *page 9*





● GOVERNMENT

# Alberta moves on rail transport solution

*Government strikes deal to lease 4,400 tanker cars from two railroads; calculates it will pocket C$2.2 billion over three years*

**By GARY PARK**

*For Petroleum News*

The Alberta government plans to lease 4,400 rail cars from Canada's two largest railroads in a deal it estimates will generate a profit of C$2.2 billion.

The administration of Premier Rachel Notley said Feb. 19 that it expects to invest C$3.7 billion in the deal with Canadian Pacific and Canadian National railways, calculating that once the cars are in full service by 2020 it will gain C$5.9 billion in royalties, tax revenues and profits over three years.

The government expects the discount for Western Canada Select heavy crude and the value of West Texas Intermediate will shrink by US$4 a barrel.

The crude-by-rail program is part of a series of measures designed to reduce the glut of landlocked crude in Alberta and overcome the shortage of pipeline capacity out of Alberta.

Notley said in a statement that all Albertans "deserve to get the top dollar" for the resources they own.

The government expects the extra 4,400 rail cars will transport 120,000 barrels per day when all are in service, compared with the current maximum of about 330,000 bpd.

The Alberta Petroleum Marketing Commission will buy crude from producers that already have access to rail-loading facilities, then market those volumes to customers in the United States and offshore markets.

RACHEL NOTLEY

Until contracts are signed, the commission will not know the destination for those exports.

Earlier, Notley had indicated Alberta was close to buying 7,000 cars.

## Large-scale derailments

She is undeterred by two large-scale train derailments earlier in February, one of them taking the lives of all three crew members, and one spilling crude from 37 cars that derailed in Manitoba.

Notley has also expressed confidence that Canada's National Energy Board will soon allow construction to resume on the Trans Mountain pipeline expansion, TMX, to 890,000 bpd.

The Federal Court of Appeal quashed the regulatory approval for TMX last summer, ordering the NEB to undertake additional consultation on the impact of tanker traffic on the marine environment off Canada's Pacific Coast.

Notley told the Canadian Broadcasting Corp. that she believes TMX approval will be restored, opening the way to "get shovels back in the ground later this year."

Calgary-based analyst Greg Stringham, who headed Alberta's oil-by-rail committee, said rail is essential "until we get new pipelines in place. Rail becomes a really good insurance policy."

## Pipelines safer

The extreme risks of relying on rail have been driven home with force this month.

A Canadian Pacific train hauling 100 grain cars ran out of control in the Canadian Rockies on Feb. 5 after sitting for two hours at the top of the slope without handbrakes being deployed. It ended in a crumpled wreck after falling 200 feet from a bridge near the Alberta-British Columbia border. Two of the three crew were found dead near the locomotive and a third was still inside.

That was followed 11 days later when tanker cars on a Canadian National tankers train derailed 180 miles northwest of Winnipeg and leaked oil near a water lagoon. The extent of that damaged has yet to be assessed.

*Notley has also expressed confidence that Canada's National Energy Board will soon allow construction to resume on the Trans Mountain pipeline expansion, TMX, to 890,000 bpd.*

Asked whether rail accidents gave her pause about moving ahead with her government's crude-by-rail plan, Notley emphasized that pipelines remain the safest transportation option.

But she said the inability of several federal governments to build a pipeline to the Pacific Coast has forced Alberta to curb crude production to restore oil prices.

"That is an unsustainable situation," she said. "It has consequences."

Hopes also remain pinned on a resumption of work on the Keystone XL line to the U.S. Gulf Coast and on Enbridge's Line 3 from Alberta to Superior, Wisconsin.

The C$9 billion Line 3 project is designed to replace an aging pipeline and more than double capacity to 760,000 barrels per day from 370,000 bpd.

Enbridge Chief Executive Officer Al Monaco told analysts that Line 3 has "massive support" and is now in the final permitting and construction phase that should allow the line to come into service by late 2019. ●

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# PIPELINES & DOWNSTREAM

## Judge keeps most Keystone XL work on hold

A federal judge in Montana has largely kept in place an injunction that blocks a Canadian company from performing preliminary work on the stalled Keystone XL oil pipeline.

U.S. District Judge Brian Morris on Feb. 15 denied a request by Calgary-based TransCanada to begin constructing worker camps for the 1,184-mile pipeline that would ship crude from Alberta to the Gulf Coast.

However, Morris said TransCanada could perform some limited activities outside the pipeline's right of way. Those include the construction and use of pipe storage and container yards.

TransCanada attorneys had argued the injunction issued by Morris in November could cause it to miss the 2019 construction season and further delay the project.

An appeal of November's ruling is pending before the 9th U.S. Circuit Court of Appeals.

—ASSOCIATED PRESS

# EXPLORATION & PRODUCTION

## US drilling rig count at 1,051, up by 2

The number of rigs drilling for oil and natural gas in the U.S. was up by two the week ending Feb. 15 to 1,051.

At this time last year there were 975 active rigs.

Houston oilfield services company Baker Hughes reported that 857 rigs targeted oil (up three from the previous week) and 194 targeted natural gas (down one).

The company said 70 of the U.S. holes were directional, 915 were horizontal and 66 were vertical.

Among major oil and gas producing states, Louisiana was up by four rigs and Wyoming was up by three.

Alaska, California and Wyoming each had an increase of one rig.

Colorado was unchanged.

North Dakota and Oklahoma were each down by one rig.

New Mexico and Texas (the most active state with 509 rigs) were each down by two rigs.

Pennsylvania was down by three rigs.

Baker Hughes shows Alaska with 12 active rigs, up from nine a year ago.

The U.S. rig count peaked at 4,530 in 1981. It bottomed out in May 2016 at 404.

—PETROLEUM NEWS

● LAND & LEASING

# State approves Repsol to GMT assignment

By KRISTEN NELSON

*Petroleum News*

The Alaska Department of Natural Resources' Division of Oil and Gas has approved assignment of 18.75 percent working interest in 11 oil and gas leases from Repsol E&P USA Inc. to GMT Exploration Company LLC.

This group of leases is south of Pikka and west of Meltwater.

Division Director Chantal Walsh said in a Feb. 13 assignment approval that the effective date of the assignments is Feb. 1.

"Any party holding an interest in the assigned leases may be required to enter into a financial assurances agreement in the future to ensure dismantlement, removal, and restoration obligations can be met," Walsh said.

### Monthly activity report

In the division's January monthly lease administration activity report there are 17 leases with assignment from Great Bear Petroleum Ventures to Accumulate Energy Alaska Inc. (69.13 percent working interest) and Burgundy Xploration LLC (20.07 percent working interest). These leases are at the southern edge of a large block of Great Bear leases interlaced with existing Accumulate leases. Borealis Alaska LLC holds the remaining 10.8 percent working interest; under comments in the division's report the 17 leases are listed as assignments subject to the first amendment to the DR&R agreement.

A newly formed subsidiary of London-based Pantheon Resources recently acquired two wholly owned companies from Great Bear Petroleum Operating LLC — Great Bear Petroleum Ventures I and II, between 250,000 and 290,000 acres on Alaska's North Slope, most immediately south of Prudhoe Bay and Kuparuk River.

The January lease activity report shows the acquisition by Pantheon Oil and Gas LP of 100 percent interest in 81 leases from Great Bear Petroleum Ventures I and II.

The report also shows 20 Doyon Ltd. leases terminated for failure to pay rent. Doyon has been exploring in the Nenana basin and in 2012 converted a state oil and gas exploration license in the Nenana basin into state oil and leases; the division's current summary of acreage by lessee shows Doyon still holds 141,733 acres.

*The report also reflects participating area changes — 12 expansions and one contraction — at ConocoPhillips Alaska's Nanuq participating areas in the Colville River unit, and six assignments of overriding royalties of 0.5 percent from Proak LLC to Northern Lights Royalties III LP*

A sample lease from those terminated was 5,042 acres; if the 20 leases were all in that size range the acreage terminated would be more than 100,000 acres.

The report also reflects participating area changes — 12 expansions and one contraction — at ConocoPhillips Alaska's Nanuq participating areas in the Colville River unit, and six assignments of overriding royalties of 0.5 percent from Proak LLC to Northern Lights Royalties III LP. ●

*Contact Kristen Nelson at knelson@petroleumnews.com*

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# ALKAID WELL

gram was as follows:

- Ice road construction Feb. 12-26.
- Move in and rig up Feb. 26-March 5.
- Alkaid 1 re-entry and testing; plug and abandon March 5-April 15.
- Rig down and move out April 19-25.

### Drilling underway at Winx 1 exploration well

There is an exploration well being drilled on another block of Pantheon/Great Bear leases. Pantheon said the Winx 1 well was spud on Feb. 15, and as of Feb. 17 drilling had reached a depth of 880 feet. In merging with Great Bear, Pantheon has a 10 percent interest in the well.

Located a little less than 4 miles east of the Armstrong Horseshoe 1/1A discovery well that significantly extended the successful Nanushuk play fairway to the south, the Winx 1 is targeting the Nanushuk formation as its primary objective. Pantheon said the drill bit will also pass through secondary targets — the "Seabee turbidite and Torok fan."

The well, which will be drilled to a total vertical depth of 6,500 feet, is operated by Captivate Energy Alaska Inc., an 88 Energy Ltd. company, and the majority interest owner of the four independents invested in the well.

Jay Cheatham, CEO of Pantheon, said Feb. 18 that Pantheon was "very fortunate to have the ability, through a back in right, to double our working interest to 20 percent within 6 months" of well completion, temporary abandonment or suspension.

### More exploration plans

In a recent presentation at a general meeting in which the 51/49 percent merger was approved, Pantheon unveiled additional exploration plans for 2020-21 and beyond, saying its strategy in Alaska was "to prove up acreage … and sell at a significant premium to a larger company."

Pantheon said 2020 drilling will include the Talitha well, which is a re-drill of the 1986 ARCO Alaska discovery well, Pipeline State No. 1. Pantheon holds a 90 percent working interest in that lease.

The new well will appraise oil sands seen in the adjoining plugged and abandoned ARCO well and "test a topset exploration play analogous to recent major discoveries in the area," Pantheon said.

Extraction techniques "now far surpass what was available in the 1980's," Pantheon noted, saying some 900 million barrels of oil in place had been discovered in three zones plus a 1.7 billion exploratory upside.

In 2020-21 and beyond Pantheon would like to drill exploration wells in leases where it now has between 75 and 90 percent working interest, including a well called Theta, which will test Kuparuk and Brookian (Nanushuk) zones.

Also listed for this time period are the Megrez, Tania and Alula wells near the Dalton Highway, as well as Phecda, a possible extension of an Alkaid discovery.

Founded in 2005, Pantheon is listed on the AIM Stock Exchange, a sub-market of the London Stock Exchange that allows smaller, less-viable companies to float shares with a more flexible regulatory system than that of the main market. ●

● ALTERNATIVE ENERGY

# FERC filing for Delta Junction project

*Companies seek certification for cogeneration project involving new wind farm balanced by battery and propane fueled power generators*

**By ALAN BAILEY**
*Petroleum News*

Eco Green Generation LLC has applied to the Federal Regulatory Commission for certification as a qualifying facility for a proposed new power system involving a new wind farm at Delta Junction and a series of propane fueled generators in the Fairbanks region.

The company is working with Alaska Environmental Power on the concept. The idea is that the system, also supported by a battery, will be able to supply power at a constant rate to the electricity grid in the region, with the propane generators and battery able to counterbalance the varying output from the wind farm, as the wind strength fluctuates. In a cogeneration arrangement, surplus heat from the propane generators would be available for the heating of nearby buildings — up to 20 separate heat and power plants would be distributed across the region, positioned at locations where the excess heat could be used.

### Need for certification

If FERC certifies the planned system under the terms of the federal Public Utilities Regulatory Policies Act, or PURPA, local electricity utilities, including Golden Valley Electric Association, will be required to respond to requests for a tariff for connecting the system to their electrical networks, to become a part of the regional power supply arrangements. Purchase of power from the new system would then be required if a tariff results in acceptable electricity pricing.

Bill Rhodes, manager of Eco Green Generation, told Petroleum News that his company had already filed a certification application with FERC in December. However, that application had run aground, in part because of the federal government shutdown, but mainly because the FERC application procedures are designed to handle a single power source and not a combined wind farm and cogeneration system of the type proposed. The company has now found a work around for the application glitches, Rhodes said.

The proposed system would involve a total of 100 megawatts of power capacity, including up to just under 40 megawatts from the wind farm, he said.

Mike Craft, manager of Alaska Environmental Power, already operates a small wind farm at Delta Junction, a location that he has said offers particularly advantageous wind conditions for wind power generation. For a number of years Craft has been hoping to build a larger wind farm at the Delta Junction site and has, in the past, obtained a tariff specification for a new farm from GVEA. However, the wind farm proposal has proven uneconomic because of the cost to GVEA of regulating or counterbalancing the fluctuating wind output.

### Microgrid technology

So, instead, Eco Green and Alaska Environmental are planning a system that would provide power at a constant rate while making maximum use of the relatively cheap and clean wind energy. Rhodes said that the system would use the same technology as is employed by small localized electricity grids called microgrids, to automatically adjust the power output from the propane plants to match the wind farm output. And the propane-fueled reciprocating engines would be able to respond rapidly to fluctuating power needs, while also retaining high energy efficiency, at whatever power settings they would need to operate.

In Fairbanks the companies envisage appropriately located propane generators supplying heat to up to 14 schools, a multi-purpose arena, swimming pools and various retail centers.

### Propane from Canada

The bulk propane needed for the system would come from Canada, shipped to Fairbanks on rail cars by barge and railroad. Rhodes said that, with western Canada having an excess of propane from its gas industry and an insufficient market for that propane off its west coast, the propane is particularly cheap, thus rendering the propane for Fairbanks economically viable. In fact, in addition to shipping propane for the power system, the companies anticipate the possibility of supplying bulk propane to the Alaska Interior as a financially advantageous fuel for the heating of buildings, cooking, heating water and the operation of driers — propane is a clean burning fuel that creates minimal amounts of harmful emissions, they say.

"We're trying to make propane to be the cheapest fuel for interior Alaska by having a large initial customer for the propane," Rhodes said.

The companies also argue that the proposed arrangement can help address air pollution problems in the Fairbanks region with no financial risk to the public and at lower cost than upgrading existing power generation facilities. ●

*Contact Alan Bailey at abailey@petroleumnews.com*

## PIPELINES & DOWNSTREAM

### Racketeering lawsuit by developer dismissed

A federal judge on Feb. 14 dismissed a $1 billion racketeering lawsuit that the developer of the Dakota Access oil pipeline filed against environmental groups and activists, saying he found no evidence of a coordinated criminal enterprise.

Texas-based Energy Transfer Partners sued Greenpeace, BankTrack and Earth First in August 2017, alleging the groups worked to undermine the $3.8 billion pipeline that's now shipping oil from North Dakota to Illinois. The company's accusations included interfering with its business, facilitating crimes and acts of terrorism, inciting violence, targeting financial institutions that backed the project, and violating defamation and racketeering laws. The groups maintained the lawsuit was an attack on free speech.

U.S. District Judge Billy Roy Wilson last year dismissed Earth First and BankTrack as defendants, saying ETP had failed to make a case that Earth First is a structured entity that can be sued and that BankTrack's actions in imploring banks not to fund the pipeline did not amount to radical ecoterrorism.

Wilson on Feb. 14 granted motions to dismiss from Greenpeace and individually named defendants that the company added to the lawsuit last August. The judge said ETP's claim failed to establish several necessary elements required by the Racketeer Influenced and Corrupt Organizations Act, including that the defendants worked together on a criminal enterprise.

"Donating to people whose cause you support does not create a RICO enterprise," and "posting articles written by people with similar beliefs does not create a RICO enterprise," Wilson wrote. Later in his ruling he added that "acting in a manner similar to others, without any sort of agreement or understanding, does not make you part of a RICO enterprise."

Greenpeace lauded the dismissal of what it said was an attempt by ETP to "bully" those who "advocate for human rights and the planet."

ETP spokeswoman Vicki Granado said the company is disappointed and intends to pursue some claims in state court.

Groups and American Indian tribes who feared environmental harm from the pipeline staged large protests that resulted in 761 arrests in southern North Dakota over a six-month span beginning in late 2016. ETP maintains the pipeline is safe.

—ASSOCIATED PRESS

● FINANCE & ECONOMY

# Petroleum construction spending up for 2019

By KRISTEN NELSON
Petroleum News

A 2019 construction spending forecast projects a $7.224 billion construction spend in Alaska this year, topped by petroleum projects at $2.73 billion and public projects, including defense, at $2.61 billion. The forecast, written by Scott Goldsmith at the Institute of Social and Economic Research at the University of Alaska Anchorage and sponsored by the Construction Industry Progress Fund and the Associated General Contractors of Alaska, shows the projected petroleum spend, almost 38 percent of the total forecast for the state, up 13 percent from 2018. State forecast spending is up 10 percent from 2018, with earthquake work included, and up 8 percent to $7.02 billion, with earthquake work excluded.

Goldsmith said the numbers reflect a projection of what will actually be spent this year, with the expected spend the second year in a row of growth — the 2018 spend was estimated to be $6.6 billion.

## Petroleum spend growth

Goldsmith attributed growth in petroleum spending to recent large discoveries on the North Slope, technological advances, positive federal and state attitudes and the higher oil price.

Petroleum construction spending in future years "should continue to increase," he said.

"The level of petroleum related construction depends not only on the price of oil but also on the available inventory of prospects, technology, costs, the financial position of the companies, and their long-range development plans," Goldsmith said.

He noted that while the West Coast price of Alaska North Slope crude reached a high for the year of $85 per barrel in October, it fell sharply, ending the year near $60, somewhat tempering optimism generated by the federal government's move to open the 1002 area of the Arctic National Wildlife Refuge to exploration.

There is also, Goldsmith said, increased interest on the western side of the North Slope, which is also encouraging the federal government to push to open more of the National Petroleum Reserve-Alaska.

Low oil prices have forced companies to cut costs over the last several years, he said, and as a result "the economic breakeven price for new production has fallen significantly, increasing the development potential for many prospects." Goldsmith attributed reduced costs to the introduction of new technologies for finding oil, more precision drilling and new methods such as coiled tubing drilling, horizontal drilling and multilateral wells.

*Goldsmith attributed growth in petroleum spending to recent large discoveries on the North Slope, technological advances, positive federal and state attitudes and the higher oil price.*

## Jobs up slightly

The Alaska Department of Labor and Workforce Development's January Alaska Economic Trends noted military, oil and tourism as three drivers of employment growth, with construction forecast to grow the most, economist Karinne Wiebold said.

In evaluating jobs by industry, construction is forecast to grow the most, she said, adding 900 jobs in 2019, a 5.8 percent growth. That increase is mostly related to work at Eielson preparing for the arrival of two F-35 squadrons, which with missile defense installation at Clear and Greely is largely responsible for a 13 percent growth in defense spending.

Oil and gas, hard hit by a 37 percent loss in employment after peaking in 2014, appeared to bottom out last year, Wiebold said, and is projected to regain 300 jobs this year.

Economist Neal Fried, writing about the Anchorage job market, said the oil industry lost 6,100 jobs statewide between December 2014 and November 2017, but has been mostly stable since then.

Small employment gains are expected this year, Fried said, citing better oil prices, a growing list of discoveries over the past two years and improved access to resources.

Construction, he said, lost 1,100 jobs in Anchorage between 2015 and 2017. The tide turned last year and modest gains are likely to continue in 2019, "not due to big projects but because activity had fallen to such a low level." ●

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## HOMER GAS

the gas that they use, to cover the balance of the cost until that cost is recouped. Under the surcharge arrangement, Enstar factored the construction costs not covered by the state grant into its cost calculations for the Homer gas supply, without changing the parameters that the utility uses for calculating its required rate of return on its gas supply costs and its associated income tax liability.

But those financial calculations were based on projections of how Homer gas demand would rise, once the city became connected to a gas supply. Enstar has now told the RCA that, although the number of customers signing up for gas supplies has followed a trajectory close to what Enstar had expected, those customers have not individually been consuming as much gas as predicted. As a consequence, the $1 surcharge is proving insufficient to enable Enstar to recover its costs in building the Homer extension to its system.

"Anecdotal evidence suggests that customers in the Homer area are behaving differently than those in outer areas Enstar has expanded into and are not fully converting buildings to gas when hooking up for service," Enstar told the RCA. "Instead it appears that many are waiting until their existing heating units and other appliances need replacement before fully converting their systems."

## Resolving the problem

In 2016 Enstar proposed resolving the problem by placing the cost of the Homer extension into the rate base that the utility uses to determine the fees that it charges all of its customers for its services.

*The state provided a grant of $8.1 million towards the $10.7 million cost of the pipeline, on the understanding that Homer gas consumers would pay a $1 per thousand cubic feet surcharge on the gas that they use, to cover the balance of the cost until that cost is recouped.*

However, the RCA rejected this proposal and invited Enstar to propose a revised Homer surcharge.

Rather than increasing the surcharge, Enstar now proposes resolving the problem by reducing the rate of return that the utility obtains from its costs associated with the construction of the Homer pipeline. That, in turn, would reduce the utility's income tax liability associated with the return from the Homer extension to its network. Essentially, the rate of return would drop from the weighted cost of Enstar's capital to the cost of the company's debt. The excess cost already incurred by Enstar to date because of the shortfall in gas demand would be accounted for by amortizing this over the remaining 30-year period that the Homer surcharge is expected to be in effect. The overall result would be a net reduction in Enstar's monthly costs associated with the original cost of the pipeline, enabling that cost to be recouped over time using the $1 Homer surcharge.

Enstar has asked that its proposed new tariff arrangement go into effect on Jan. 1.

—ALAN BAILEY

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## GAS DELIVERY

up production very shortly after restoring pipeline utility and going through the proper safety inspections.” He said that Furie had “mobilized a vast array of human and physical resources to address the issues.”

“We take precautions and have procedures in place to mitigate this on a daily basis, but sometimes variables occur outside normal operating parameters that we cannot control, such as climate conditions,” Pinsonnault said, presumably referencing a spell of cold weather at the beginning of January when the hydrate plugging began.

On Jan. 23 Furie sent a letter to Enstar affiliate Alaska Pipeline Co, declaring Force Majeure and saying that it could no longer meet its commitments under its gas supply agreement with Enstar. Hobson said that Enstar has not received any gas from Furie since Jan. 25.

### Notice of default

On Feb. 11 APC sent a formal notice to Furie, declaring that Furie was in default under the supply agreement. Under the terms of the agreement, the parties involved had 20 days to work out an acceptable means of resolving the issue. Failure to agree on an acceptable solution within that 20-day window would result in termination of the supply contract.

The notice also commented that APC has been very accommodating over the past three years and could have terminated the contract as a consequence of Furie failing to meet deadlines for the drilling of wells and meeting required gas production capabilities. APC attributed the problems to Furie’s lack of funding capacity. Furie missed an October deadline to provide engineering reports and contingency plans. And, from the outset, Furie has had to supplement its Kitchen Lights gas production with gas purchased from third parties, or drawn from storage, in order to meet the terms of its APC supply agreement, the notice said.

### Enstar’s supply sources

According to Enstar’s current tariff, the utility has anticipated obtaining about 23 percent of its base gas supplies from Furie between July 2018 and July 2019. Hilcorp Alaska is expected to meet much of Enstar’s remaining supply needs, but with Buccaneer Alaska and AIX Energy also supplying some gas.

Hobson said that, with this winter being in general warmer than usual, Enstar has been able to use gas that it had previously stored to compensate for the loss of the Furie supplies. As with other Southcentral gas and power utilities, Enstar uses the Cook Inlet Natural Gas Storage Alaska facility on the Kenai Peninsula to warehouse summer produced gas for use in the winter.

Were the stored gas to prove insufficient to fill the supply gap, Enstar has the option to purchase additional gas through a “call option” in a gas supply agreement with Hilcorp Alaska, Hobson said. Enstar continues to monitor its gas supply arrangements, to ensure that its customers’ short-term and long-term needs are met, she said.

—ALAN BAILEY

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## FRENCH HEARING

14 that French had been placed on administrative leave with pay.

The ultimate decision on whether grounds exist to remove French is up to the governor, Petumenos said.

AOGCC is an independent, autonomous body and Petumenos said it is apparent under state statute that the Legislature intended “to provide for the independence and autonomy of AOGCC commissioners by requiring that a commissioner may not be removed during office except for specific cause shown.”

The causes listed in the governor’s letter are chronic unexcused absenteeism; browbeating fellow commissioners and others; publicly undermining the AOGCC; security breaches; and failure to perform routine work and non-work-related tasks.

### Absenteeism

Petumenos said he found that French was routinely absent from the commission’s offices “for substantial parts of the normal workday and that this affected morale at the office, constituted poor leadership and resulted in reallocation of his workload to others,” found that evidence submitted by French shows that he conducted substantial work outside the office but said French’s pattern of absences “and the anecdotal evidence as to the reason stated for some of the absences is such that the absences are not fully explained by Commission work being conducted outside the office.”

In his conclusion Petumenos said that French raised the issue of the right of an employee to progressive discipline. “With respect to chronic absenteeism, the issue does not appear to have been broached directly with Commissioner French prior to these proceedings, which supports Commissioner French’s point that he was not given the opportunity to address, explain or remedy concerns before being subject to these proceedings.”

The independence of commissioners works against French’s argument, Petumenos said. “Commissioner French was the chairman of the AOGCC and at the top of the AOGCC’s authority. It is difficult to conceptualize, in these circumstances, who would have the authority to engage in progressive discipline.” He noted that the governor’s office does not have the authority to intervene in day-to-day operations at the commission, and said given the state’s statutory scheme, “it appears difficult, if not impossible … for the governor’s office to interpose any form of intermediate discipline or supervision given the statutes that clearly protect commissioner independence. Under these circumstances it is not clear who would be in a position to interpose progressive discipline with respect to the chairman of this independent commission.”

### Browbeating

On the browbeating issue Petumenos said French “fervently and ardently believed” a position he had taken “was correct though it was in the minority” and “was persistent and energetic in pursuing his view that the jurisdiction of the AOGCC was being interpreted more narrowly than he believed that the enabling statutes intended.”

Petumenos said French “persisted in attempting to secure a written response from the Department of Law as to whether his legal reasoning had merit, and conducted his own research and issued writings of his own supporting his point of view.”

French had a conference with the attorney general and other members of the Department of Law without the other commissioners to argue his point of view and wrote to Gov. Bill Walker in May 2018 stating his position, with the other commissioners writing a rebuttal in a separate letter.

Petumenos said French brought up the issue on numerous occasions with the other commissioners, and while he may have “argued his position forcefully, fervently and persistently, there is insufficient evidence that Commissioner French was unprofessional, rude or bullying when he did so.”

The scope of AOGCC’s jurisdiction first surfaced in an adjudicatory hearing, Petumenos said, but “French’s subsequent communications did not seek to change or modify the Commission’s adjudicatory decision, but rather was directed at how the Commission should view its jurisdiction prospectively.”

Petumenos said he believes it would “set a dangerous precedent” to consider removing a commissioner “for ardently pursuing a matter though the Commissioner be in the minority.” He said the point of Alaska’s statute on removal “is to ensure that removal for cause does not come about as a consequence of policy disagreements or points of view, but for elements of misconduct unrelated to the merits of any issue before the AOGCC. Though this persistence may be experienced by others to be a waste of time, be annoying or frustrating, it is too close to the prohibition against issue-based removal to stand scrutiny on these facts.”

—KRISTEN NELSON

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## NANUSHUK DETAILS

Alaska Anchorage, who will use the model to develop synthetic seismic sections of the mountain. Bhattacharya will measure the velocity of sound in rock samples gathered in the field. The velocity measurements, coupled with the rock structure developed in the model, can be fed into a computer program that will simulate what a 2-D seismic survey of the mountain would look like. In addition, it will be possible to conduct seismic simulations using a range of sound frequencies, from higher frequencies than would normally be employed in a seismic survey to more typical frequencies.

Then it should be possible to relate features observed in a synthetic seismic section to similar features in an actual seismic section obtained from oil exploration. Similar seismic features would indicate the presence of similar geologic features, with the nature of those features being well understood at Slope Mountain. Hence the potential for a better understanding of what the exploration seismic is indicating.

### Further surveys planned

LePain said that DGGS plans to extend this line of research by conducting similar surveys at other Nanushuk/Torok outcrops that are observed at a number of locations to the west of Slope Mountain.

"So we hope that this synthetic seismic section that we're going to generate at Slope Mountain is the first of many that we will generate at other outcrops," LePain said.

And, intriguingly, in addition to the results of the DGGS research ultimately becoming public, there is now high resolution 3-D seismic data associated with Nanushuk/Torok exploration, available to the public from the Alaska Department of Natural Resources through the state's exploration tax credit program. ●

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## New modeling technique offers geologic insights

Alaska's Division of Geological and Geophysical Surveys is using a new technique called structure-through-motion photogrammetry to gain better insights into the detailed geology of areas of the state. DGGS geologist Trystan Herriott explained to Petroleum News that, essentially, the technique involves shooting a large number of overlapping photographs around an area with rock outcrops. The overlapping images allow the derivation of stereoscopic images. Data from these images can be fed into a computer application that can construct a highly accurate three-dimensional model of the rocks, with the images tied back to ground observations and GPS survey markers. Actual rock observations on the ground are linked back to how these rocks appear in the photographic images. Depending on the scale of the project, hundreds or thousands of photographs may be required, Herriott said.

### Digital photographs

In some applications, people use drones to collect the required photographs. However, the scale and remote nature of Alaska rock outcrops tend to make this approach impractical — the DGGS scientists instead use digital SLR cameras, shooting the photographs from an aircraft that flies a planned pattern around a survey area. Modern digital photographic technology enables resolutions of about 2.5 centimeters per image pixel. By comparison, a radar-based technology that the federal government is using to develop new statewide relief maps of Alaska has a resolution of about 5 meters, sufficient for relief mapping but inadequate for detailed geologic analysis.

A structure-through-motion survey actually results in two products: a digital surface model, and what is referred to as an ortho model, a three-dimensional model generated by the computer processing of the images and with a uniform scale throughout. The result is a model of the geology that enables the mapping out of rock units, the measurement of features such as deposition channel sizes and so on, Herriott said.

### Value in Alaska

In Alaska's rugged landscape, the technique is particularly helpful in developing detailed geologic maps at locations where ground access is very limited. For example, the technique is being used to map inaccessible outcrops on the west side of Cook Inlet. On the North Slope the technique makes possible the mapping and three-dimensional modeling of rock outcrops, such as the Nanushuk/Torok outcrop on the east face of Slope Mountain, near the Haul Road."We see this work as having a lot of different potential benefits and we archive the data on the DGGS elevation dataset, so they're available for anyone to see," Herriott said.

—ALAN BAILEY

Petroleum news

# Oil Patch Bits

## Fluor awarded contract for Valvoline facility

Fluor Corp. announced Feb. 14 that it was awarded the engineering, procurement and construction management contract for Valvoline's new blending and packaging facility in Zhangjiagang, China. The project is Valvoline's first plant in China. Fluor booked the undisclosed contract value in the fourth quarter of 2018.

"With the growing automotive market in China, Fluor will assist Valvoline to meet the demand for its products by delivering this facility on schedule and with execution excellence," said Sandeep Nibber, president of Fluor's energy and chemicals business in Asia-Pacific. "Fluor is bringing several cost-competitive innovations, including minimizing onsite tank farm fabrication work, to perform this schedule-driven project."

The 80,000-square-meter plant will have the capacity to produce more than 30 million gallons of finished lubricants and coolants annually for passenger cars and heavy duty vehicles.

More than 600 workers are expected onsite at peak during construction. Production at the plant is expected to begin by the end of 2020.

# Companies involved in Alaska's oil and gas industry



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

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## ENERGY OUTLOOK

demand coming from the developing world, particularly from Asia, where around 2.5 billion people are expected to move from poverty into middleclass lifestyles in the next 20 years. One outcome of this will be the increased need for energy in buildings for applications such as air conditioning, lighting and electrical appliances.

On the other hand, the effect of growing productivity on energy demand will be significantly offset by a reduction in energy usage per unit of economic activity. And one change since last year's Energy Outlook is a view that India rather than China will see the fastest growth in energy needs. In China overall growth has been slowing, while the pattern of growth is shifting from industrial activity more towards less energy intensive sectors of the economy, the Energy Outlook says.

However, Dale emphasized that, rather than trying to make predictions, the Energy Outlook considers different energy scenarios for the future, to provide a better understanding of the energy uncertainties that the world faces, clarifying which factors will make a big difference to the energy future and which factors matter less.

### The evolving transition

One future scenario, the evolving transition scenario, involves the continuing evolution of government policies, technologies and social preferences, along the lines currently observed. Under this scenario, renewable energy grows the fastest of any energy sector, accounting for more than half of the increase in primary energy

*The projected growth in natural gas demand is linked to the use of gas in both power generation and in industry driven by increasing industrialization in the developing world.*

and overtaking the use of coal in power generation. However, the Energy Outlook also anticipates natural gas demand growing strongly, accounting for about one-third of primary energy growth. Oil demand would continue to grow for around the next 10 years, before plateauing in the 2030s. The oil demand growth would come from the use of oil as a feedstock for petrochemicals and also from use in transportation. This level of oil demand will require trillions of dollars in investment in finding and developing oil resources, Dale pointed out. There would be some increase in liquid fuel use beyond 2030 but this demand increase would likely be filled by non-oil fuels such as biofuels.

Oil would remain dominant as a fuel in the transportation sector but its use in the sector would fall to 85 percent by 2040 compared with 94 percent currently. Much of the demand would come from marine transportation and aviation. The use of electric road vehicles would grow rapidly.

### Future oil supplies

The Energy Outlook sees U.S. tight oil as initially leading the required increase in oil supplies. However, the analysis takes a view that after 2030 U.S. tight oil production will decline, with OPEC playing an increasing role in the oil supply situation. One scenario envisages a situation in which low cost producers in the Middle East and Russia can reform their economies in ways that enable them to increase their share in the oil market.

The projected growth in natural gas demand is linked to the use of gas in both power generation and in industry driven by increasing industrialization in the developing world. And key to this expansion is the growing use of liquefied natural gas as a means of transporting gas to market.

Overall growth in coal consumption is expected to slow sharply, but with significant differences in consumption profiles in different parts of the world. The Energy Outlook anticipates output of nuclear and hydro power growing, but at a slower rate than overall power generation.

The Energy Outlook sees two primary factors in the anticipated rapid increase in renewable energy use: government policies supporting this type of energy source and, more importantly, technical advances that are driving down the cost of solar and wind energy.

"Renewables are likely to become an ever-increasing part of the global energy system," Dale said.

However, under the evolving transition scenario carbon emissions would continue to grow, at a slower rate than in the past, but above the levels needed to achieve goals set in the Paris agreement on climate change.

### Rapid transition scenario

In anticipation of the possibility of government measures that would address climate change concerns, the Energy Outlook also considers a scenario in which carbon emissions would drop by about 45 percent, to meet the goals of the Paris agreement. Under this "rapid transition" scenario policy measures would impact a wide range of factors both in power generation and in transportation. But despite an assumed major increase in the use of electrically propelled cars and trucks, about two-thirds of the reductions in carbon dioxide would come from the power sector.

"The power sector is key to ensuring a rapid transition to a lower carbon energy system over the next 20 years," Dale said.

The low carbon scenario would also require the use of carbon capture, use and storage technologies in power generation and in industry, the Energy Outlook says.

The Energy Outlook also considers a scenario, the less globalization scenario, in which current international trade disputes escalate, driving a reduction in global GDP growth and causing countries to become concerned about dependency on energy imports. Surprisingly, some relatively modest assumptions in this scenario triggered some significant impacts on the global energy system, with the big losers being major energy exporters such as Russia and the United States, Dale said.

### Plastics ban?

Another scenario considers the potential impact of a worldwide ban on single use plastics in applications such as packaging, given growing environmental concerns about plastic usage. The consequence of this plastic abatement would be a reduction in oil demand by about one-half. However, with plastics being popular because they provide practical solutions to many everyday needs, alternative ways of meeting these needs would need to be found. And these alternatives would, in turn, have other effects, potentially increasing energy demand, carbon emissions and creating environmental impacts, the Energy Outlook says.

A "more energy" scenario assumes that a higher quantity of energy would become available to populations where energy consumption per capita is currently relatively low. This scenario, along with the general challenge of supplying more energy with less carbon emissions, would require improved energy efficiency in countries that consume disproportionately large amounts of energy, the Energy Outlook says.

A scenario involving efficiency gains in industry and buildings could increase the proportion of electricity used in the overall energy mix and somewhat reduce total energy consumption in these two settings. That, in turn, would reduce carbon emissions.

### Low carbon transportation

A low-carbon transportation sector scenario would see factors such as tightening fuel efficiency standards and increased electrification. The result would be a greater proportion of vehicles being powered by natural gas, biofuels and electricity. However, improved energy efficiency rather than fuel switching would have the greatest impact in reducing carbon emissions, the Energy Outlook says.

In a lower carbon power sector scenario carbon pricing and government policies would drive power generation towards low carbon technologies. Coal fueled generation would tend to be phased out, while renewables would become particularly dominant in the power generation mix.

Moving beyond 2040 a wide range of technologies will need to come into play, if net carbon emissions are to drop to zero by the second half of the century, Dale said. Possibilities include the greater use of hydrogen, bioenergy, improved energy efficiency and carbon capture. ●

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# OIL SEARCH

This winter Oil Search is conducting a two-well appraisal program, drilling Pikka B plus a sidetrack at the southern end of the unit and Pikka C and a sidetrack in the central part of the unit. Pikka B is designed to add contingent reserves to the 120,000 barrel-per-day Pikka development around proposed drillsite 3. Pikka C is a "proof-of-concept" development well, to reduce any uncertainty regarding the production characteristics of the Nanushuk reservoir.

Pikka B drilling "has gone very well and has intersected the thickest Nanushuk reservoir seen in the field," Peter Botten, managing director, said. (Testing is following drilling in both wells and their sidetracks.)

Information released to date by state geologists and field operators Oil Search and ConocoPhillips about Nanushuk reservoirs discovered in the region shows net thicknesses of oil-bearing sands are some 200 feet at Pikka and 40 to 70 feet at Willow.

Next winter, Oil Search is "aiming to drill up to three wells … probably some further appraisal wells in Pikka, but also looking at how we look at and appraise the Horseshoe area to the south. We're also reviewing the Alpine reservoir targets in the Pikka unit to determine some appraisal strategies," he said.

The $3 billion the company estimates it will spend on Pikka development from 2019 to production in 2023 represents a 35 percent equity position, per company Chief Financial Officer Stephen Gardiner.

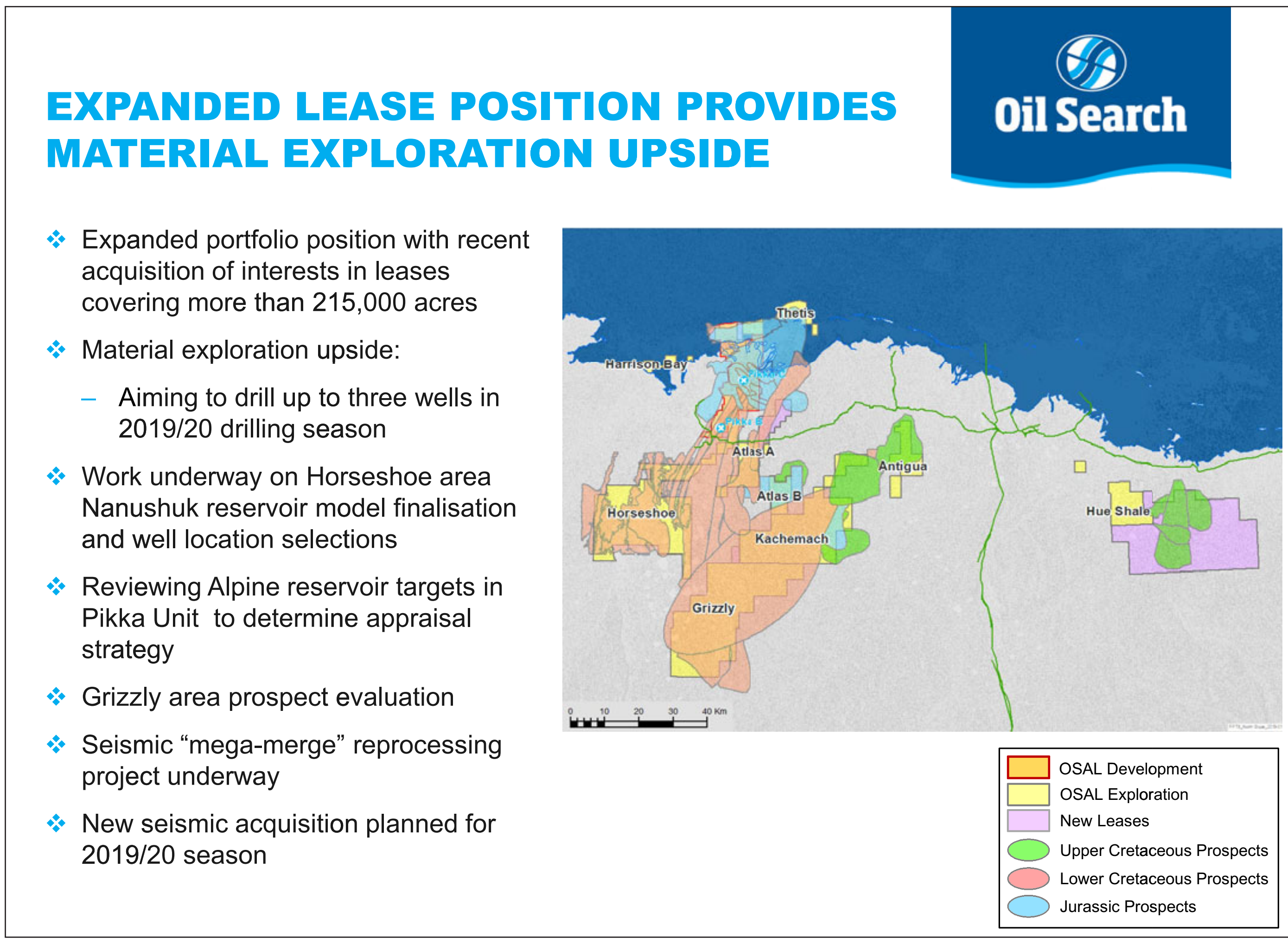
"We view it (as a) … fairly conservative construction cost," he said.

## Little said about Grizzly

With more oil potential in the Nanushuk formation to the north and south of its Pikka development, Oil Search has said it sees Pikka as the first of a series of potential developments in the fairway between the Colville River and Kuparuk River units on the North Slope. The idea is to repeat the 120,000 barrel-per-day initial Pikka project many times over during the next 10 years, with more projects coming down behind the one that is underway, D' Richard D'Ardenne, Oil Search senior vice president of development, said Jan. 18 (see story in Jan. 27 issue of Petroleum News).

But until now no other potential prospects were named.

Unfortunately, almost nothing more was said about the Grizzly prospect in the 2018 annual report, aside from showing it on a map (see that map in the pdf and print version of this issue of Petroleum News) and the fact it was on acreage that was newly acquired.




*With more oil potential in the Nanushuk formation to the north and south of its Pikka development, Oil Search has said it sees Pikka as the first of a series of potential developments in the fairway between the Colville River and Kuparuk River units on the North Slope.*

## Third partner likely

From the start in late 2017, Oil Search, which operates two of the largest North Slope oil discoveries in decades in the Pikka and Horseshoe Brookian oil prospects west of the central North Slope, has said it believes in spreading the risk among a few carefully chosen working interest partners. The ASX-listed independent is currently involved in the process of bringing in a third working interest partner.

Currently, Oil Search has a 25.5 percent interest in the Pikka unit and adjacent exploration acreage and a 37.5 percent interest in the Horseshoe block and the Hue shale.

The company has the option, exercisable until June 30, to purchase all of Armstrong and its minority partner's remaining working interest in the Pikka unit and the Horseshoe block (another 25.5 percent and 37.5 percent respectively) as well as an additional 25.5 percent interest in adjacent exploration acreage and a 37.5 percent in the Hue shale for another $450 million. (The initial buy-in was $400 million.).

Repsol continues to hold as much as a 49 percent interest in the Pikka and Horseshoe acreage acquired from Armstrong and its minority partner, depending on the lease.

Last summer Oil Search, aligning with Repsol, set up a data room and began to seriously evaluate companies that expressed interest in buying in as a working interest partner.

Botten said in the Feb. 18 presentation that the task of bringing in the third working interest partner is progressing smoothly with several companies on a "good short list," but the process of identifying potential partners was not yet complete, with the data room still open.

"It's not done, it's never done until it's done," he noted.

When asked whether they were considering different partners for Pikka and Horseshoe, he said no: "We'll progress it as a matter of urgency over the coming weeks. I think it's pretty clear though that the optimal value is delivered out of these assets by coordinating appraisal opportunities both at Pikka and Horseshoe and beyond."

Armstrong continues to play a role in Oil Search's exploration strategy, keeping an overriding royalty interest in the leases it sells. ●

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## INSIDER

ment with unit operator ExxonMobil and the other working interest owners,

The two-year Point Thomson Unit 2018 Area F Plan of Development submitted Dec. 21 to the division by Jade did not meet the requirements set forth in regulation, so Jade filed a revised plan and was notified Feb. 20 that it has been approved.

—KAY CASHMAN

### Looking for the Spartan 151?

**SPARTAN OFFSHORE DRILLING HAD THE ONLY** working jack-up rig in Alaska moved from Seward Harbor to ASRC Energy Services Rig Tenders Dock in Kenai. The new location has the Spartan 151 positioned closer to potential upcoming work in Cook Inlet.

As reported by Petroleum News in the last few months, several companies have expressed interest in hiring the rig.

The most likely job for 2019 is to conduct development operations for Furie Operating Alaska, including the addition of new perforations in the Kitchen Lights unit KLU No. A-2A and KLU No. 3 wells, according to an Alaska Division of Oil and Gas drilling plan approval, issued Dec. 11. Furie is also evaluating a fifth development well drilled from a jack-up rig cantilevered over its Julius R offshore production platform.

That said, it is not known how Furie's recent problems with gas production will impact its plans (see related story in this issue), although it is likely they will simply delay rig mobilization by a couple of months.

Hilcorp Alaska plans to use a jack-up rig to plug and abandon the discovery well in the North Cook Inlet unit, along with a previously drilled exploration well, according to an application the company filed with the National Marine Fisheries Service for an incidental take authorization. The work is expected to take 60-90 days in May through July of 2020.

Also in 2020, Hilcorp "plans to possibly drill two and as many as four exploratory wells," pending results of a 3-D seismic survey over its lower Cook Inlet outer continental shelf leases, the company said. The entire program would take an estimated 80-240 days, depending on the well count and drilling depths.

Glacier Oil & Gas Corp. is continuing to seek partners to drill an offshore exploration well at its Sabre prospect, the company said in its most recent development plan filed with the division. The company is continuing its permitting activities for the proposed well, located in an offshore corner of the company's West McArthur River unit. Glacier's plans call for the use of the Spartan 151.

BlueCrest Alaska Operating has considered the use of a jack-up rig to drill various shallow or distant oil and gas targets around its offshore Cosmopolitan unit in Cook Inlet near Anchor Point.

BlueCrest is currently producing oil from an onshore pad, from which the company uses its custom-built BlueCrest Rig No. 1 to drill directional wells and laterals to offshore targets.

In an early 2016 application to the U.S. Fish and Wildlife Service, BlueCrest described a three-well offshore and onshore exploration program, but it withdrew the application in July of the same year.

#### Jack-up wanted

Not long ago, there was no jack-up rig available in Alaska.

The Spartan 151 first arrived in Cook Inlet in 2011, through the efforts of Danny Davis, founder of the Escopeta group of companies. It was the first jack-up rig to work in Cook Inlet in 16 years, following years of effort by Davis and others to attract the needed investment.

The rig's trip to Alaska was a struggle in itself.

Davis hired a purpose-built self-propelled heavy lift vessel for the notoriously treacherous voyage around the southern tip of South America from the Gulf of Mexico to the Pacific Ocean. The rig was delivered to Nanaimo, on the east coast of Vancouver Island, Canada, where the rig was floated off the transport ship for testing and repair of the legs and jacking systems that Escopeta suspected might have been damaged in pounding storms encountered on the first attempt to round Cape Horn.

Following repairs, three tug boats powered the rig on its journey from Canada to Cook Inlet.

—STEVE SUTHERLIN

### Elixir loans Entek funds for federal leases

**ELIXIR PETROLEUM, PARENT OF ITS ALASKA OPERATING** entity Emerald House, has decided to lend the recent buyer of its Alaska assets, Entek Energy, the $500,000 Entek has to pay the U.S. Bureau of Land Management for 10 federal leases Elixir was high bidder on in the Dec. 12 National Petroleum Reserve-Alaska lease sale.

Entek is expected to close in March on the three leases it is buying from Elixir that were originally acquired from oil and gas investor and independent Paul Craig in mid-November. The prospect was called South Nanushuk by Craig but has been renamed Project Peregrine.

The 13 leases are connected in a block south of Armstrong's Nanushuk discoveries at Pikka and Horseshoe and south of ConocoPhillips' Willow oil find, all west of the central North Slope.

On Feb. 11, Elixir received formal lease documentation from BLM for the 10 leases that it is transferring to Entek, requiring payment of the balance of the lease bid price by Feb. 26.

Both Elixir and Entek are Australia-based independents.

—KAY CASHMAN

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## LNG CANADA

access to a Coastal GasLink worksite. That protest camp was dismantled Jan. 11 after the Royal Canadian Mounted Police arrested 14 protesters.

The RCMP and hereditary leaders agreed at that time to a deal that will comply with an interim court injunction that expires on May 31.

#### Majority stake for sale

Apparently TransCanada is prepared to retreat from its position as sole owner of the C$6.2 billion Coastal GasLink pipeline, having hired RBC Capital Markets to manage its plans to sell a majority stake in the line.

In a filing with the National Energy Board, Coastal GasLink said "third-party joint venture partners could acquire up to 75 percent of the equity in the ownership structure. Assuming a transaction proceeds, one or more arm's-length third parties will hold the majority of the equity."

Crystal Smith, chief councilor of the Haisla Nation, said her First Nation is interested in becoming a co-owner.

"Any advancement that we could make to have a social impact on our communities is possible.

Karen Ogden-Toews, chief executive officer of First Nations LNG Alliance, said her organization is leading efforts by elected chiefs to buy into Coastal GasLink, challenging protests by hereditary chiefs.

She said all elected councils "see responsible LNG development in BC as a way out of poverty, as a source of revenues that will enable First Nations to tackle their huge social issues and as a path towards employment, education, income, self-government and economic reconciliation."

Bill Gallagher, an attorney who examines conflicts between First Nations and energy companies, told the Globe and Mail that elected aboriginal communities "would probably want somewhere totaling a 10 percent stake as an entry level."

A TransCanada spokesman some company officials are "in the early stages of discussions as we seek investors to take a stake in CGL," though he would not cross the line into any confidential matters.

#### TC Energy

The offer of a pipeline stake coincided with TransCanada's disclosure that — assuming shareholder approval — it will rebrand itself as TC Energy, hoping that will "help to further unite our employees and will enable us to better connect with our diverse stakeholders," said Chief Executive Officer Russ Girling.

Jennifer Rowland, a St. Louis-based analyst for Edward Jones, said some of the company's investors have "grown leery of investing in Canada. I think this is a way to de-emphasize Canada, quite frankly."

Calgary-based TransCanada has 3,500 employees in Canada, 3,200 in the United States and 300 in Mexico and is involved in pipelines, power generation and energy storage operations.

About 52 percent of the company's earnings before interest, taxes, depreciation and amortization were expected to flow last year from the U.S. compared with 40 percent in Canada.

A company spokesman said, "we continue and plan to remain a Canadian-based corporation," although some observers have suggested that moving company headquarters to the U.S. would make it easier for TransCanada to advance projects such as Keystone XL. ●

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