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The weekly mining newspaper for Alaska and Canada's North

Week of September 24, 2017

NEWS NUGGETS

Compiled by Shane Lasley

TRILOGY METALS INC.

Trilogy Metal's Bornite project in Northwest Alaska hosts roughly 6 billion pounds of copper. This year's widely spaced drilling aims to double the footprint of the high-grade carbonate hosted deposits found there.

Drilling extends high-grade Bornite

Trilogy Metals Inc. Sep. 18 reported high-grade copper results from this summer's exploration drill program at the Bornite project, part of the Company's Upper Kobuk Mineral Projects in the Ambler mining district of Northwest Alaska. This 10,000-meter program is focused on expanding upon the more than 6 billion pounds of copper Trilogy has outlined at Bornite. Roughly 2.7 billion lb of this copper is encompassed in an open-pit resource averaging roughly 1 percent copper. The remaining roughly 3.7 billion lb is located in a deeper underground resource that averages about 2.9 percent copper. It is this higher grade underground portion of Bornite that is being targeted this year. In 2013, the last year Trilogy had drills turning at Bornite, five holes cut rich copper zones along a 1,000-meter wide front to the north. Hole RC13-0220, the most northeasterly these holes, cut two high-grade intervals from 809.1 meters (at a 0.5 percent cut-off) – 45.6 meters of 1.07 percent copper; and 80.4 meters of 1.89 percent copper. RC13-0224, drilled about 800 meters west of hole 220, cut two high-grade intervals from a depth of 513.3 meters along this northern front – 229.4 meters of 1.73 percent copper; and 6.6 meters of 7.7 percent copper. The first three holes drilled this year cut thick and continuous intervals of copper mineralization up to 300 meters beyond the 2013 drilling. "The initial three step-out holes at Bornite demonstrate that high grade copper mineralization continues to the north and east of previously drilled resources," said Trilogy Metals President and CEO Rick Van Nieuwenhuyse.

RC17-0234, the first hole of the 2017 program, cut three high-grade copper intervals roughly 250 meters north of RC13-0220 – 21 meters of 1.29 percent copper; 26.8 meters of 1.44 percent copper; and 36 meters of 0.72 percent copper. The top of the Bornite mineralization in hole 234 was reached at a drill depth of 935.3 meters. RC17-235W, drilled about 250 meters west of hole 220, cut two zones of copper from a depth of 661.8 meters – 6.1 meters of 0.69 percent copper; and 26.9 meters of 0.94 percent copper. RC17-0234, drilled 300 meters north of hole 224, cut two high-grade copper intervals from a depth of 720.8 meters – 27.1 meters of 0.8 percent copper; and 89.3 meters of 1.13 percent copper. All reported intercepts are at a 0.5 percent cut-off grade. "Our drill program is demonstrating that the Bornite mineralized system remains strong and shows no signs of letting up as we continue to drill on trend to the north and east," said Van Nieuwenhuyse. "In addition, we are starting to see new structural trends and controls on the axis of high-grade mineralization along a northwest vector. A recently completed detailed gravity survey is showing some very promising results and we will be integrating that information into our future targeting."

Trilogy also reported significant amounts of cobalt are also showing up in the assays, particularly in the higher grade cop-

see NEWS NUGGETS page 11

NANA REGIONAL CORP.

Located on NANA Regional Native Corp. land, the Red Dog Mine in Northwest Alaska provides roughly 5 percent of the global new zinc supply each year.

PRODUCTION

More Red Dog zinc

Improved recoveries up 2017 output, expanding discoveries for the future

By SHANE LASLEY

Mining News

After getting off to a relatively slow start, the Red Dog zinc mine in Northwest Alaska is finishing 2017 strong.

Teck Resources Ltd., the operator at Red Dog, said it now expects the mine to produce up to 550,000 metric tons of zinc this year, which is about 12 percent more than the company was anticipating at mid-year.

Adding to the good news for near-term production at Red Dog, Teck reported promising results from a major exploration program at Aktigiruq, a significant high-grade zinc deposit the company is exploring about 7.5 miles north of the Red Dog mill.

DON LINDSAY

"We are pleased with the significant improvements in recovery at our Red Dog Operations in the last few months and consequently production will now exceed previous guidance for the year by approximately 50,000 tonnes (metric tons)," Teck President and CEO Don Lindsay said on Sep. 18. "As well, our exploration results at our nearby Aktigiruq deposit show its potential to be one of the best undeveloped zinc deposits in the world."

Challenging ore

By mid-year, Red Dog had only produced 230,300 metric tons of zinc. While this six months of production was already enough to make the Northwest Alaska operation among the top five zinc mines on Earth for 2017, it was a slow start for an operation that ships roughly 5 percent of the world's new supply each year.

This relatively slow start to the year was due to challenges of processing the higher grade but more complex ore from Qanaiyaq, the third pit developed at Red Dog.

During the first quarter of 2017, ore from Qanaiyaq pit was introduced to supplement declining grade ore from the Aqqaluk pit. However, mill performance was adversely affected by the metallurgically complex ores, particularly the highly oxidized material being mined at the surface of Red Dog.

Due to the difficulties, Teck cut back how much Qanaiyaq ore its was feeding the plant and trimmed its guidance for 2017 Red Dog zinc production to 475,000 to 500,000 metric tons, which is about 12 percent less than the 545,000 to 565,000 metric tons of zinc the company had expected going into the year.

Thanks to changes in mine sequencing and improved metallurgical recoveries, which is resulting in more of the high-grade Qanaiyaq ore being fed to the mill during the second half of the year, Teck now expects to make up most of the 2017 production losses.

With the improvements, Teck is forecasting that Red Dog will produce roughly 300,000 metric tons of zinc during the second half of 2017, or 525,000 to 550,000 metric tons of the galvanizing metal for the year.

Mill upgrades

Teck anticipates strong zinc production to continue at Red Dog in the coming years, thanks to ongoing improvements to the mill.

The company is forecasting annual zinc production at Red Dog to range between 475,000 and 550,000 metric tons over the next five years.

This assumes completion of a US$110 million mill upgrade project that is expected to increase average throughput by about 15 percent over the remaining mine life, which will offset the challenges of processing lower grade and harder ore in the Aqqaluk pit.

These improvements to the mill are expected to be finished by the end of 2019.

While these upgrades will increase the amount of ore being fed through the mill, the current life expectancy of Red Dog remains the same. This is because more lower-grade ore from Aqqaluk and Qanaiyaq will be processed, meaning these deposits will feed the Red Dog mill until 2031.

Decades of zinc

By the time Qanaiyaq is mined out, it seems likely that Aktigiruq on state mining claims to the

see RED DOG OUTPUT page 11

Improved recoveries up 2017 output at Red Dog Mine, expanding discoveries for the future. Read more in Mining News, page 7.

NordAq has P&A'd Tiger Eye; disputes AOGCC fines, bonding

NordAq, an independent oil and gas exploration company, has been in discussions with the Alaska Oil and Gas Conservation Commission over fines and bonding the commission proposed because NordAq failed to plug and abandon two exploration wells, Shadura and Tiger Eye, prior to expiration of its leases at the wells.

Following an April hearing the commission reduced proposed fines of $771,000 for the two wells to $100,000 each, and required bonding for the P&A work.

NordAq asked for reconsideration and an opportunity for oral argument, which occurred Sept. 20.

Attorney Robin Brena of Brena, Bell & Clarkson, representing NordAq, told the commission that the Tiger Eye well has now

see **NORDAQ DISPUTE** *page 14*

Arctic sea ice reaches minimum for year, 8th lowest since 1979

On Sept. 13 the extent of sea ice in the Arctic appeared to reach its minimum for this year, the National Snow and Ice Data Center has reported. Although it is possible that a late-season melt could reduce the ice extent further, it is likely that the Sept. 13 extent of 1.79 million square miles will prove to be the minimum. That minimum level was the eighth lowest level since satellite observations began in 1979. It was 610,000 square miles less than the median extent for the same day between 1981 and 2010, but 193,000 square miles above the 2012 to 2016 extents, NSIDC said. The rate of ice loss in early September was slightly higher than the 1981 to 2010 average.

The 10 lowest ice extents measured from satellite tracking

see **ICE EXTENT** *page 15*

EXPLORATION & PRODUCTION

Excited over Badami

Glacier thinks Starfish well has great potential at a key NS location

By ALAN BAILEY

Petroleum News

Glacier Oil and Gas is excited about the potential of its Badami field on Alaska's North Slope, both in terms of the location of the field and its facilities, and in terms of the Starfish well that the company plans to drill during the coming winter, Carl Giesler, company CEO, told the Alaska Support Industry Alliance on Sept. 14.

CARL GIESLER

"We really do believe that's a game changer for the company," Giesler said of the planned exploration well at Badami.

He characterized the Badami field as occupying a key position in the more eastern part of the North Slope. With processing facilities scaled for production of up to 38,500 barrels of oil but current production of only about 1,000 barrels per day, the facilities have ample capacity to act as a fulcrum for future development.

"We think that could be a central facility for any development, for oil production acreage around us," Giesler said.

And the Badami pipeline can also act as a conduit for transporting oil to the trans-Alaska oil pipeline, he commented.

Moving ahead

Glacier has received bids for ice road construc-

see **BADAMI POTENTIAL** *page 13*

GOVERNMENT

A bonding challenge

Aurora Exploration appeals AOGCC's $6 million order for Nicolai Creek

By ALAN BAILEY

Petroleum News

DNR has jurisdiction over DR&R, while AOGCC has jurisdiction over P&A.

Aurora Exploration has filed petitions with the Alaska Oil and Gas Commission and with the U.S. Bankruptcy Court for the District of Alaska, challenging an AOGCC order requiring a $6 million bond if Aurora Exploration purchases the Nicolai Creek gas field from Aurora Gas. And AOGCC has agreed to reconsider its order.

As reported in the Sept. 10 issue of Petroleum News, Aurora Exploration had proposed to AOGCC a $200,000 bond for the eventual plugging and abandonment of the six wells in the gas field onshore the west side of the Cook Inlet. However, AOGCC demanded a $6 million bond, on the basis that each well might cost $1 million to plug and abandon. As an alternative, Aurora Exploration can establish a $200,000 bond if the company also undertakes to plug and abandon three wells in Aurora Gas's Three Mile Creek gas field, AOGCC has said. Aurora Exploration has no plans to acquire the Three Mile Creek field.

Under current regulations, AOGCC requires bonding of not less than $200,000 for blanket coverage of all of an operator's wells in Alaska.

see **BONDING CHALLENGE** *page 16*

EXPLORATION & PRODUCTION

Deeper sands tested

Hilcorp requests Ninilchik pool rules change for Beluga/Tyonek natural gas pool

By KRISTEN NELSON

Petroleum News

Hilcorp said it successfully tested the Kalotsa No. 4 well this August in the T146 sand.

Hilcorp Alaska LLC has asked the Alaska Oil and Gas Conservation Commission for a change in rules for the Ninilchik Beluga/Tyonek gas pool to include deeper intervals it is now testing.

The change would be in the pool definition, which is now from gas-bearing intervals between measured depths of 1,480 feet in the Paxton No. 5 well and 9,600 feet in the Paxton No. 1 well. Hilcorp's requested change is to gas-bearing intervals between measured depths of 1,555 and 9,035 feet in the Kalotsa No. 3 well.

The Ninilchik unit is on onshore and offshore acreage along the Kenai Peninsula from just north of Clam Gulch to just north of Ninilchik and produces natural gas from onshore pads with bottom-hole locations both onshore and offshore.

Chevron USA drilled the discovery well on what is now unit acreage in 1961; numerous additional exploration and delineation wells were drilled before regular production began in 2003. The unit was formed in 2001 and expanded in 2003 to encompass the Falls Creek unit, with

see **POOL RULES** *page 13*

ALTERNATIVE ENERGY

Argument continues over Delta Wind Farm

RCA investigation attracts contradictory views over whether the proposed facility can be viably connected to GVEA's system

By ALAN BAILEY

Petroleum News

A contentious case over the merits or otherwise of connecting a proposed Delta Junction wind farm to Golden Valley Electric Association's power supply system continues in the Regulatory Commission of Alaska. Recent filings in the case highlight the gulf between the views of the would-be wind farm operator and GVEA, while also illustrating the complexities of wind farm economics.

Delta Wind Farm already operates a small 2-megawatt wind system at Delta Junction, connected to GVEA's system. But Alaska Environmental Power LLC, owner of Delta Wind Farm, wants to build a new, larger farm with a capacity of 13.5 megawatts.

Wind power economics

Wind power presents a challenge to an electricity utility, because the generated power fluctuates with the vagaries of the varying wind strength. That fluctuating power must be counterbalanced by equal and opposite fluctuations in some other power source, such as a gas or oil fired power station. This regulation of the wind power costs money. And the larger the amount of wind power in relation to a utility's total power generation capacity, the greater the impact of the wind power regulation on the economics of the overall power system. On the other hand, the cost of wind power is typically stable over long periods of time because the power generation does not require the purchase of fuel.

Mike Craft, managing partner of Alaska Environmental Power, has argued that the scale of his proposed system is modest in relation to GVEA's total power needs and that the utility already has to use its spinning reserves to guard against shortfalls in non-firm power supplies from Southcentral Alaska. Craft has said that Delta Junction is in a particularly favorable location for wind power generation because of a reliable wind system that flows north through the Tanana Valley.

GVEA has said that it does not need any additional power generation and that a consultant commissioned by the utility found that connecting the proposed farm would not be viable. Essentially, the consultant found that the cost of the increased use of the utility's less efficient power generation facilities to regulate the wind power fluctuations would trigger a rise in the utility's electricity rates.

PURPA regulations

However, under RCA regulations, driven by the federal Public Utilities Regulatory Policies Act, or PURPA, electricity utilities are required to purchase power under reasonable terms from qualifying, independent renewable power producers. And so, with the proposed Delta Wind Farm being a qualifying facility, GVEA filed a Delta Wind Farm tariff in March of this year. After the RCA rejected that tariff, GVEA filed a revised version in May. On June 23 the RCA issued an order saying it was opening an investigation because of some unresolved issues relating to the tariff.

Comments on the tariff have been appearing in the RCA's investigation docket.

The regulations associated with PURPA are complex and require a utility to calculate both the cost of integrating a varying renewable power source into its system and the benefit to be gained from the use of the renewable energy. The regulations use an approach that assumes that a utility will preferentially displace its most expensive power sources through the use of the renewable power. While GVEA has claimed that its tariff complies with the regulations, Alaska Environmental Power has questioned the tariff's accounting for GVEA's capital costs associated with its power generation, its accounting for the avoided costs associated with wind power use and its accounting of wind power integration costs and benefits.

Order following conference

On Aug. 17, following an informal conference between the parties involved in the dispute, the RCA issued an order requiring GVEA to clarify some issues relating to its tariff, and to provide the results of the modeling of three power generation scenarios that the RCA specified. The order said that GVEA's argument in support of its tariff is not completely transparent and hence the required clarification.

On Aug. 28 GVEA responded to the RCA order. Among the comments in this response, GVEA said that

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FINANCE & ECONOMY

EIA projects 28% growth in energy use

Agency's International Energy Outlook 2017 focused on 2015-2040, with most growth from non-OECD countries, especially non-OECD Asia

By KRISTEN NELSON
Petroleum News

Between 2015 and 2040, world energy consumption is projected to grow 28 percent, the U.S. Energy Information Administration said Sept. 14 in its International Energy Outlook 2017.

EIA said most of the growth was projected to come from countries not in the Organization for Economic Cooperation and Development, especially where demand is driven by strong economic growth, as in non-OECD Asia, which includes China and India. That area, EIA said, accounts for more than 60 percent of the world increase in economic consumption from 2015 through 2040.

Energy consumption in non-OECD countries increases 41 percent in that period, compared to 9 percent in OECD countries. World consumption of marketed energy from all fuel sources — except coal — is projected to increase; coal consumption is projected to remain essentially flat, EIA said. The fastest growing energy source is projected to be renewables, increasing on average 2.3 percent per year from 2015 to 2040, with nuclear the second-fastest growing source of energy at an increase of some 1.5 percent per year.

The agency noted that the U.S. projections in the IEO2017 are consistent with the agency's Annual Energy Outlook 2017.

Cases considered

The reference case is the basis for the 28 percent increase, and EIA said it assumes improvement in existing technologies and relies on views of leading economic forecasters. It also considers current policies for major countries.

The agency also produced high and low economic growth cases. The reference case uses a 3 percent per year growth in world gross domestic product; in the high economic growth case the increase is 3.3 percent per year and in the low case 2.7 percent per year.

EIA also produced high and low oil price cases. In the reference case, the price of North Sea Brent crude in 2016 dollars reaches $109 per barrel in 2040, compared to $226 in the high price case and $43 in the low price case.

Total liquids consumption increases from 191 quadrillion Btu in 2015 to 228 quadrillion Btu in 2040, accounting for 31 percent of total world energy use in the reference case. In the low oil price liquids account for 32 percent of total world energy use in 2040, and in the high oil price case, with higher oil prices discouraging liquids consumption, liquids account for 28 percent of total world energy use.

Consumption by sector, fuel type

EIA said the industrial sector continues to account for the largest share of world energy use through 2040 in the reference case, but other sectors grow more quickly, with industrial use rising by an average pf 0.7 percent from 2015 through 2040, compared to 1 percent per year for transportation and 1.1 percent per year for buildings. Most of the growth in the industrial sector use is in non-OECD countries, where it grows by some 0.8 percent per year in the reference case, compared with 0.2 percent growth per year in OECD countries.

Natural gas is the world's fastest growing fossil fuel, with an increase of 1.4 percent per year, compared to liquids at 0.7 percent per year and coal virtually flat at 0.1 percent per year.

Liquid fuels

EIA said that world consumption of liquids fuels in the reference case rises from 95 million barrels per day in 2015 to 113 million bpd in 2040, with non-OECD nations accounting for most of the increase, some 1.3 percent per year, and a slight decrease in OECD nations.

"OPEC countries maintain or increase their combined market share of crude and lease condensate production," the agency said.

In the reference case, consumption of petroleum and other liquid fuels grows by 18 percent between 2015 and 2040, based on growth in non-OECD regions, which have an overall demand increase of 39 percent compared to a 3 percent decrease in OECD regions.

More than 80 percent of the increase in liquid fuels consumption is in non-OECD Asia, with China and India experiencing rapid industrial growth and increased transportation demand.

The transportation sector remains the largest liquids fuels consumer, with a 54 percent share in 2015 increasing to 56 percent in 2040. Industrial use stays steady at 36 percent, buildings use drops from 6 percent to 5 percent and electricity drops from 4 percent to 2 percent.

"The use of petroleum and other liquids to generate electricity declines over the projection as various factors, including increasing oil prices and relatively less costly natural gas, encourage producers to switch to alternative fuel sources," EIA said.

The reference case shows an increase in liquid fuels production by 16.1 million bpd from 2015 to 2040. EIA said more than half of the increase comes from a 10.3 million bpd increase in crude oil and lease condensate — including tight and non-tight, extra-heavy crudes and processed bitumen from oil sands.

Natural gas

Natural gas consumption increases 43 percent from 2015 to 2040 in the reference case, EIA said, with the increase

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● ENVIRONMENT & SAFETY

Fish & Game leading beluga research

NOAA funded projects will try to determine why the Cook Inlet whale population is not recovery as expected following ESA listing

By ALAN BAILEY
Petroleum News

The Alaska Department of Fish and Game is leading two new research projects designed to help figure out why the Cook Inlet beluga whale population is not recovering, despite efforts to conserve the sub-species. The National Oceanic and Atmospheric Administration is funding the research through its Endangered Species Act Section 6 program — in 2008 the whales were listed as endangered under the terms of the Endangered Species Act. Two aquariums are providing matching funding. A number of organizations, including universities, government agencies and an environmental company will participate in the research, which is expected to take about three years to complete.

After a near 50 percent decline in the whale population in the 1990s, thought to result from unmanaged subsistence hunting, a moratorium on the subsistence harvesting of the whales was established in 1999. And the listing of the whales as endangered has resulted in protective measures for the animals. Nevertheless, the whale population has not recovered as anticipated. The reasons for the continuing population shortfall remain an enigma.

Lifestyle

To shed some new light on the whales' lifestyle, and hence help determine what is constraining the whale population, one of the new projects will use existing datasets to gain a better understanding of the whales' social structure and mating strategy. The research will use genetic information gleaned from skin biopsies of Bristol Bay belugas.

"These biopsies were collected to genetically identify individuals and estimate the size of the Bristol Bay beluga population," said research biologist Lori Quakenbush. "We also collected information on whales biopsied within the same group to learn about the social structures of belugas as a species, which we need to better understand why the number of belugas in Cook Inlet is not increasing."

Foraging activity

The second project will use field and laboratory techniques to study the whales' foraging activities and habitat. Fish and Game will use isotope analysis of annual growth layers in the teeth of stranded belugas as a record of the lifelong general diets of individual whales. This data will enable the assessment of changes in diet and foraging areas, and of growth and body condition, over the last 50 years. In addition, passive acoustic monitoring of areas where belugas forage will enable an assessment of whether human-induced noise is interfering with the whales' ability to find and capture prey.

"Understanding the foraging ecology and habitat use of the Cook Inlet beluga is important in determining whether changes in prey availability were a contributing factor in their decline and are currently impeding recovery," said wildlife physiologist Mandy Keogh. ●

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LAND & LEASING

Call for new info for O&G lease sales

The Alaska Department of Natural Resources, Division of Oil and Gas, published a call for new information for the 2018 Cook Inlet and Alaska Peninsula areawide lease sales Sept. 15. Information is due Oct. 20.

The division said the sales are tentatively scheduled for spring 2018.

The Cook Inlet areawide lease sale encompasses some 4.2 million gross acres, 815 tracts ranging in size from 640 to 5,760 acres, within the Matanuska-Susitna, Anchorage and Kenai boroughs. The Alaska Peninsula areawide includes some 4 million gross acres, 1,047 tracts ranging in size from 640 to 5,760 acres, within the Lake and Peninsula Borough, Bristol Bay Borough, Aleutians East Borough and the Dillingham Census Area.

The division said land estate on the tracts may be owned by the state, a municipality or a private entity, and only those tracts in which the mineral estate is free and unencumbered are included in any issued lease.

The most recent best interest findings for those sales were issued in 2009 for Cook Inlet and in 2014 for the Alaska Peninsula. The latest supplement for the Cook Inlet finding was issued in 2011. Findings and supplement are at available on the division's website at: https://dog.dnr.alaska.gov//

The division is looking for substantial new information, which it said is generally considered to be published research studies or data directly related to matters in Alaska Statutes 38.05.035(g). The call for new information on the division's website specifies the type of information requested.

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● LAND & LEASING

Suit to block drilling on US land in Nevada

Sierra Club, Center for Biological Diversity seek reversal of BLM sale, citing potential harm to greater sage grouse, water sources

By SCOTT SONNER

Associated Press

Environmentalists have sued a U.S. agency to try to stop it from allowing oil and gas drilling on a vast stretch of federal land in Nevada, where the government is reversing protections put in place nine months ago under the Obama administration.

The Sierra Club and Center for Biological Diversity say the U.S. Bureau of Land Management illegally failed to consider potential consequences of hydraulic fracturing, known as fracking, ranging from harm to the greater sage grouse to contamination of fragile desert water sources and emission of climate-altering greenhouse gases.

The suit filed the week of Sept. 11 in federal court in Reno seeks an order forcing the bureau to rescind oil drilling leases it sold in June for as low as $2 per acre on three land parcels covering about 9 square miles.

The groups are asking a judge to forbid permits on an additional 103 parcels totaling 296 square miles until the agency complies with the National Environmental Policy Act and other laws they say require a thorough examination of the potential effects of fracking.

"The Trump administration wants to turn public lands into private profits for the fossil fuel industry at the peril of local communities and wildlife," said Clare Lakewood, an attorney at the Center for Biological Diversity's Climate Law Institute in Oakland, California.

The federal mineral leases don't automatically allow companies to drill but provide a 10-year window to apply for permits for gas and oil exploration.

President Donald Trump has taken other steps to open up federal lands to energy production, including proposals to eliminate national monuments designated by former President Barack Obama.

Patrick Donnelley, the center's state director in Nevada, said the drilling leases in Nevada mark the first time the Trump administration has reversed a draft proposal by the previous administration to keep some otherwise unprotected lands off limits to drilling. He says the government is flouting environmental rules "to push their oil and gas agenda."

Fracking has led to a boom in natural gas production but raised widespread concerns about possible groundwater contamination and even earthquakes. The method uses huge amounts of pressurized water, sand and chemicals to extract oil and natural gas from rock formations deep underground.

The lawsuit says it can release carcinogens and other hazardous pollutants into the air and water while emitting massive amounts of methane, a significant driver of climate change.

Bureau of Land Management spokesman Steve Clutter said the agency does not comment on pending litigation. But he said federal law directs the agency to conduct quarterly sales of drilling leases for minerals beneath about 880,000 square miles of land that it manages — an area eight times the size of Nevada.

He said domestic production of oil and gas on those lands account for about 10 percent of the nation's gas supply and 5 percent of its oil.

The federal mineral leases don't automatically allow companies to drill but provide a 10-year window to apply for permits for gas and oil exploration.

The land bureau acknowledged when issuing a 280-page draft environmental assessment of the 106 parcels in January that use of the drilling practice was a "real possibility" but maintains it does not have to examine site-specific effects until a developer submits a formal plan to pursue such a tactic.

Such an analysis "would amount to speculation," agency Acting State Director Marcia Todd said in denying the environmentalists' protest of the lease sales in June.

Only about 20 fracking permits have ever been issued in Nevada and only seven wells have been drilled — five of those in 2014 and one most recently last year, said Richard Perry, administrator of the Nevada Division of Minerals Commission on Mineral Resources.

He testified before a legislative panel in February that there had been "no safety or environmental incidents." ●

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EIA OUTLOOK

largely due to non-OECD countries, "which have expanding industrial sectors and electricity demand."

The growth in non-OECD countries is projected to average 1.9 percent per year, compared to 0.9 percent in OECD countries.

While natural gas consumption increases in all sectors, electric power and industry account for nearly 75 percent of the increase from 2015 through 2040.

The largest increases in natural gas production are in the Middle East, the United States and China, which account for 12 percent, 20 percent and 18 percent of growth. In the United States and China the increase is projected to come from development of shale resources. Russia's increase comes from resource development in that country's Arctic and Eastern regions, while newly developed offshore fields in Mozambique and Tanzania and increasing production from Egypt's Zohr field support liquefied natural gas exports from Africa.

While shale resource development accounted for 50 percent of U.S. natural gas production in 2015, it is expected to account for 70 percent in 2040, "as the country leverages advances in horizontal drilling and hydraulic fracturing techniques and taps into newly discovered technically recoverable reserves," EIA said.

Shale is expected to account for nearly 50 percent of the natural gas production in China by 2040, making that country the second largest shale gas producer after the U.S. ●

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WIND FARM

it was unable to use its coal-fired power capability to regulate varying wind power sources and that its existing wind farm at Eva Creek had been sized in a manner that would enable regulation using GVEA's low-cost units. Any further wind power added to the system would require regulation using higher cost generation sources, GVEA told the commission. Moreover, those higher cost units, if used for regulation, must be operated continuously at some required level, the utility said.

Comments on GVEA filing

On Sept. 12 Delta Wind Farm commented on GVEA's filing, in particular objecting to GVEA's use in its modeling of long-term projections to set fixed annual purchase rates over a 20-year period for wind farm power. Those rates require, for example, the long-term projection of GVEA's avoided costs associated with the use of Delta Wind Farm's power. Avoided costs are inherently variable, Delta Wind Farm said. It is notoriously difficult to make long term forecasts in the energy sector, the wind farm company commented. The Delta Wind Farm filing also raised a series of questions relating to assumptions in GVEA's economic modeling.

And in a Sept. 11 filing the state attorney general's Regulatory Affairs and Public Advocacy Section also homed in on the question of the setting of fixed versus variable rates for the long-term purchase of wind power. This question is at the core of the dispute between GVEA and Delta Wind Farm, RAPA said. State PURPA regulations do not provide clarity over this question and the RCA needs to make a ruling on the issue, RAPA said. ●

GOVERNMENT

Project comment periods extended

The U.S. Army Corps of Engineers has extended the public comment periods for both the Liberty and Nanushuk projects.

The public comment period on the draft environmental impact statement for Armstrong Energy LLC's Nanushuk project, released Sept. 1, was originally Oct. 15; it has now been extended to Nov. 14.

Public meetings on the Nanushuk draft EIS are scheduled for Sept. 25 in Nuiqsut, Sept. 27 in Utqiagvik, Oct. 3 in Fairbanks and Oct. 4 in Fairbanks. For details see the project EIS website at www.NanushukEIS.com.

For Hilcorp Alaska LLC's Liberty project, in August the Bureau of Ocean Energy Management initiated a 90-day public comment period ending Nov. 18. The Corps has now extended its public comment period to end at that time.

BOEM has public hearings scheduled on the Liberty draft EIS for Oct. 2 in Nuiqsut; Oct. 3 in Fairbanks; Oct. 4 in Kaktovik; Oct. 5 in Utqiagvik; and Oct. 10 in Anchorage. See details at: https://www.boem.gov/Hilcorp-Liberty/.

—PETROLEUM NEWS

DOE funding new fuel cell research

The U.S. Department of Energy's Office of Fossil Energy has announced that it is awarding a total of $10.2 million in funding to16 projects that will research solid oxide fuel cell technology. The selected research projects will address the cost and reliability of his particular type of fuel cell technology and conduct field testing of a prototype system for validating the solutions that are determined, DOE says.

A solid oxide fuel cell contains a solid electrolyte and uses a fuel such as natural gas at high temperature to generate electricity while emitting an exhaust containing water and carbon dioxide. This stationary means of generating power from a fossil fuel can be relatively efficient, especially if heat generated by the process can also be captured.

A solid oxide fuel cell contains a solid electrolyte and uses a fuel such as natural gas at high temperature to generate electricity while emitting an exhaust containing water and carbon dioxide.

The projects being funded by DOE involve a variety of research programs, including the development of technology for monitoring fuel cell performance, research into the use of different types of cathode, anode technology testing, and the manufacture of ceramic materials for electrolytes.

Several universities, technical colleges and businesses will conduct the research.

—ALAN BAILEY

● ENVIRONMENT & SAFETY

4 years on, cleanup nears end for ND spill

By JAMES MACPHERSON

Associated Press

Cleanup is finally in sight four years after a pipeline break sent more than 20,000 barrels of oil oozing across a wheat field in northwestern North Dakota, state regulators said Sept. 15.

Excavation of the affected site is scheduled for completion by the end of September, with the land ready for replanting next spring, North Dakota Health Department environmental scientist Bill Suess said.

The massive spill from the Tesoro pipeline was discovered by a Tioga farmer in September 2013 and has been called one of the largest onshore spills in U.S. history, covering 13 acres of land — or about the size of 10 football fields.

Suess said about 1 million tons has been excavated from the site, and crews working round-the-clock over the years have had to dig as deep as 60 feet to remove oil-tainted soil.

Tesoro, now known as Andeavor, would not confirm the state's completion timeline. "The excavation of the site is nearing completion and treatment of impacted soil is ongoing," the company said in a statement.

The spill was not far from where oil was first discovered in North Dakota in 1951. The Texas-based company and federal regulators have said a lightning strike may have caused the rupture in the 6-inch-diameter steel pipeline, which runs from Tioga to a rail facility outside of Columbus, near the Canadian border.

State regulators said no wildlife or drinking water sources were affected.

Less than a third of the 840,000 gallons of spilled oil was recovered, and the remainder has been removed by a process called thermal desorption that cooks hydrocarbons from crude-soaked soil, Suess said. That process will continue over the winter, he said.

The pipeline is one of a network of thousands of miles of similar pipelines that crisscross western North Dakota's oil patch to gather oil from wells and carry it to collection points, where it ultimately moves into larger pipelines or railroad tankers destined for refineries across the U.S.

The spill wasn't reported to the public until after state regulators — who had known about the spill for nearly two weeks — were questioned by The Associated Press.

The company originally estimated just 750 barrels of oil was involved in the spill. Even after the size of the spill was increased to more than 20,000 barrels, the company said it expected the cleanup to cost $4 million, with a completion in two years.

The company estimated cleanup costs at $73 million.

State Environmental Health Chief Dave Glatt said cleanup costs could top $100 million for the company.

The state fined the company $454,000 for the spill.

"We saw the cost of the cleanup as a significant penalty," Glatt said. ●

NORTH OF 60 MINING news

page 8 GT Gold extends high-grade gold discovery in BC's Golden Triangle

www.MiningNewsNorth.com *The weekly mining newspaper for Alaska and Canada's North* **Week of September 24, 2017**

NEWS NUGGETS

Compiled by Shane Lasley

TRILOGY METALS INC.

Trilogy Metal's Bornite project in Northwest Alaska hosts roughly 6 billion pounds of copper. This year's widely spaced drilling aims to double the footprint of the high-grade carbonate hosted deposits found there.

Drilling extends high-grade Bornite

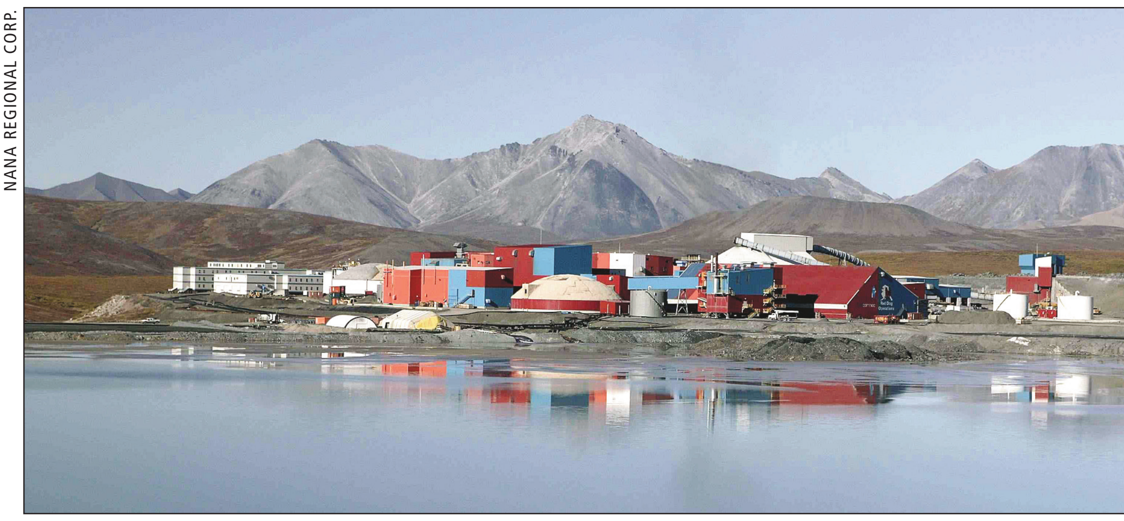
Trilogy Metals Inc. Sep. 18 reported high-grade copper results from this summer's exploration drill program at the Bornite project, part of the Company's Upper Kobuk Mineral Projects in the Ambler mining district of Northwest Alaska. This 10,000-meter program is focused on expanding upon the more than 6 billion pounds of copper Trilogy has outlined at Bornite. Roughly 2.7 billion lb of this copper is encompassed in an open-pit resource averaging roughly 1 percent copper. The remaining roughly 3.7 billion lb is located in a deeper underground resource that averages about 2.9 percent copper. It is this higher grade underground portion of Bornite that is being targeted this year. In 2013, the last year Trilogy had drills turning at Bornite, five holes cut rich copper zones along a 1,000-meter wide front to the north. Hole RC13-0220, the most northeasterly these holes, cut two high-grade intervals from 809.1 meters (at a 0.5 percent cut-off) – 45.6 meters of 1.07 percent copper; and 80.4 meters of 1.89 percent copper. RC13-0224, drilled about 800 meters west of hole 220, cut two high-grade intervals from a depth of 513.3 meters along this northern front – 229.4 meters of 1.73 percent copper; and 6.6 meters of 7.7 percent copper. The first three holes drilled this year cut thick and continuous intervals of copper mineralization up to 300 meters beyond the 2013 drilling. "The initial three step-out holes at Bornite demonstrate that high grade copper mineralization continues to the north and east of previously drilled resources," said Trilogy Metals President and CEO Rick Van Nieuwenhuyse.

RC17-0234, the first hole of the 2017 program, cut three high-grade copper intervals roughly 250 meters north of RC13-0220 – 21 meters of 1.29 percent copper; 26.8 meters of 1.44 percent copper; and 36 meters of 0.72 percent copper. The top of the Bornite mineralization in hole 234 was reached at a drill depth of 935.3 meters. RC17-235W, drilled about 250 meters west of hole 220, cut two zones of copper from a depth of 661.8 meters – 6.1 meters of 0.69 percent copper; and 26.9 meters of 0.94 percent copper. RC17-0234, drilled 300 meters north of hole 224, cut two high-grade copper intervals from a depth of 720.8 meters – 27.1 meters of 0.8 percent copper; and 89.3 meters of 1.13 percent copper. All reported intercepts are at a 0.5 percent cut-off grade. "Our drill program is demonstrating that the Bornite mineralized system remains strong and shows no signs of letting up as we continue to drill on trend to the north and east," said Van Nieuwenhuyse. "In addition, we are starting to see new structural trends and controls on the axis of high-grade mineralization along a northwest vector. A recently completed detailed gravity survey is showing some very promising results and we will be integrating that information into our future targeting."

Trilogy also reported significant amounts of cobalt are also showing up in the assays, particularly in the higher grade cop-

see **NEWS NUGGETS** *page 11*

NANA REGIONAL CORP.



Located on NANA Regional Native Corp. land, the Red Dog Mine in Northwest Alaska provides roughly 5 percent of the global new zinc supply each year.

PRODUCTION

More Red Dog zinc

Improved recoveries up 2017 output, expanding discoveries for the future

By SHANE LASLEY
Mining News

After getting off to a relatively slow start, the Red Dog zinc mine in Northwest Alaska is finishing 2017 strong.

Teck Resources Ltd., the operator at Red Dog, said it now expects the mine to produce up to 550,000 metric tons of zinc this year, which is about 12 percent more than the company was anticipating at mid-year.

Adding to the good news for near-term production at Red Dog, Teck reported promising results from a major exploration program at Aktigiruq, a significant high-grade zinc deposit the company is exploring about 7.5 miles north of the Red Dog mill.

DON LINDSAY

"We are pleased with the significant improvements in recovery at our Red Dog Operations in the last few months and consequently production will now exceed previous guidance for the year by approximately 50,000 tonnes (metric tons)," Teck President and CEO Don Lindsay said on Sep. 18. "As well, our exploration results at our nearby Aktigiruq deposit shows its potential to be one of the best undeveloped zinc deposits in the world."

Challenging ore

By mid-year, Red Dog had only produced 230,300 metric tons of zinc. While this six months of production was already enough to make the Northwest Alaska operation among the top five zinc mines on Earth for 2017, it was a slow start for an operation that ships roughly 5 percent of the world's new supply each year.

This relatively slow start to the year was due to challenges of processing the higher grade but more complex ore from Qanaiyaq, the third pit developed at Red Dog.

During the first quarter of 2017, ore from Qanaiyaq pit was introduced to supplement declining grade ore from the Aqqaluk pit. However, mill performance was adversely affected by the metallurgically complex ores, particularly the highly oxidized material being mined at the surface of Red Dog.

Due to the difficulties, Teck cut back how much Qanaiyaq ore its was feeding the plant and trimmed its guidance for 2017 Red Dog zinc production to 475,000 to 500,000 metric tons, which is about 12 percent less than the 545,000 to 565,000 metric tons of zinc the company had expected going into the year.

Thanks to changes in mine sequencing and improved metallurgical recoveries, which is resulting in more of the high-grade Qanaiyaq ore being fed to the mill during the second half of the year, Teck now expects to make up most of the 2017 production losses.

With the improvements, Teck is forecasting that Red Dog will produce roughly 300,000 metric tons of zinc during the second half of 2017, or 525,000 to 550,000 metric tons of the galvanizing metal for the year.

Mill upgrades

Teck anticipates strong zinc production to continue at Red Dog in the coming years, thanks to ongoing improvements to the mill.

The company is forecasting annual zinc production at Red Dog to range between 475,000 and 550,000 metric tons over the next five years.

This assumes completion of a US$110 million mill upgrade project that is expected to increase average throughput by about 15 percent over the remaining mine life, which will offset the challenges of processing lower grade and harder ore in the Aqqaluk pit.

These improvements to the mill are expected to be finished by the end of 2019.

While these upgrades will increase the amount of ore being fed through the mill, the current life expectancy of Red Dog remains the same. This is because more lower-grade ore from Aqqaluk and Qanaiyaq will be processed, meaning these deposits will feed the Red Dog mill until 2031.

Decades of zinc

By the time Qanaiyaq is mined out, it seems likely that Aktigiruq on state mining claims to the

see **RED DOG OUTPUT** *page 11*

NORTHERN NEIGHBORS

Compiled by Shane Lasley

GT GOLD CORP.

This hole, drilled in August, cut 6.95 meters of 51.53 grams (1.5 ounces) per metric ton gold and 117.38 g/t silver in the Saddle South discovery at GT Gold's Tatogga property in British Columbia's Golden Triangle.

GT Gold expands high-grade at Saddle South

GT Gold Corp. Sep. 18 reported continued expansion of the Saddle South high-grade gold discovery at its Tatogga property in northwestern British Columbia. The latest round of results include 20.71 meters (estimated true width 75 percent) of 5.84 grams per metric ton gold in hole TTD014; 23.66 meters of 5.1 g/t gold in TTD010; and 9.09 meters of 7.51 g/t gold in TTD016. These results expand the deposit to 500 meters down-dip from surface, roughly 50 percent deeper than the 330 meters reported at the end of August. Drilling has also extended the strike length to 360 meters east-west and further extension is anticipated. GT Gold has completed 11,962 meters of drilling in 50 holes at Saddle South so far the year, assays are pending for 36 of these holes. The company plans to continue drilling Saddle South as long as weather allows and then drop down to Saddle North, a nearby gold anomaly that lies at a lower elevation. Two holes drilled at Saddle North show the system to be gold-bearing. "At Saddle South we continue to be rewarded with strong visuals supported by XRF (x-ray fluorescence) in almost all holes, and we've now pushed intercepts to 500 meters down-dip from surface, and 350 meters along strike," said GT Gold President and CEO Kevin Keough. "As for Saddle North, reconnaissance holes TTD011 and TTD012 are really our first attempts at what constitutes a massive IP (induced polarization geophysical) target. Now that we've confirmed it is gold-bearing we plan to get back on to it with more drilling late this month or early next. Because it is topographically lower than Saddle South, our thinking is to carry out work at Saddle North when the weather forces us off Saddle Ridge."

Skeena re-opens historic Snip underground mine

Skeena Resources Ltd. Sep. 14 reported that it is now carrying out an underground exploration program at the Snip gold project in the Golden Triangle region of northwest British Columbia. In July, the company exercised its option to acquire full ownership of the historic Snip Mine property from Barrick Gold Corp. Since that time, crews have re-opened two historic portals in preparation for underground drilling. "A tremendous amount of work has gone into re-opening the Snip mine," said Skeena CEO Walter

see **NORTHERN NEIGHBORS** *page 10*

Petroleum news

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● OPINION

Draft MSHA regs may save $27.6 million

Ever so slowly, the federal government, through regulatory reform, is pulling us back from the edge of the bureaucratic abyss

By J. P. TANGEN

Special to Mining News

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.

Although many of us think that it didn't go far enough, one of the more important first steps that President Trump took in January was the promulgation of Executive Order (E. O.) 13771 which imposed a ceiling on new regulations. "For every new regulation issued, at least two prior regulations [shall] be identified for elimination … the cost of planned regulations [shall] be prudently managed and controlled through a budgeting process."

For the natural resources industries in Alaska, including mining, this first step toward deregulation was a godsend. As the mandate has filtered down to the regulatory agencies, its benefits are becoming increasingly clear.

There are examples galore of the problems associated with regulatory overreach. An egregious example was the midnight promulgation by the Obama administration of a final Mine Safety and Health Administration rule that requires the examination of the workplace in a hard-rock mine to be conducted before miners begin work in that place so that conditions that may adversely affect miners' safety and health are identified before miners are exposed to those conditions and corrective action is promptly initiated.

On its face this might seem to be a reasonable requirement. No one wants anyone to work in a place that "may adversely affect a miner's safety and health," but the hidden burden was the administrative record-keeping requirement associated with that "examination."

As is often the case, the imposition of record-keeping on a business is very expensive, especially when the only identifiable purpose for imposing such a requirement is to support a subsequent sanction.

In the case of this MSHA regulation, the documentation requirement existed regardless of whether the supposedly adverse effect was resolved well in advance of any miner being exposed to the condition.

Pursuant to E. O. 13771, MSHA now proposes to revise the Obama regulation, reasoning that if adverse conditions are corrected promptly and no longer present a danger to miners, a description of the adverse condition should not be required as part of the examination record. MSHA argues that this change may actually improve safety by encouraging mine operators to correct adverse conditions as they are found and before they potentially cause an accident, injury or a fatality.

MSHA estimates that the change will result in an annual cost savings of $27.6 million, given the number of mines and administrative costs that were involved.

MSHA is famous for its Draconian rules. Anecdotal stories of MSHA inspections are rampant. The one I like best is the story about the small ditch that was on a property that miners were routinely stepping over. A MSHA inspector dinged the operator because the condition was allegedly unsafe, so the operator bridged the ditch with a plank. The next inspector then wrote the operator up because the plank lacked a handrail.

There is no doubt that mine operations can be dangerous, as is the case at any industrial operation or location where heavy equipment is being employed. Nor is there an argument that reasonable health and safety requirements save lives and reduce the risk of injury.

The problem, however, is always the hyperactive bureaucrats who generate hyper-technical regulations to address hyper low-risk issues.

MSHA inspections are supposed to be unannounced, presumably on the theory that no one would comply with reasonable health and safety obligations if they

see **TANGEN** *page 11*

NORTH OF 60 MINING | Mining Directory

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NRC Alaska is unrivaled in the management of Hazardous Wastes, automotive fluids and recovered spilled products. NRC is located in Anchorage, Fairbanks, Palmer, Deadhorse, and Kenai.

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Remote site logistics firm specializing in turnkey portable shelter camps – all seasons.

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NORTHERN NEIGHBORS

Coles. “Safety is our top priority, so we are establishing ventilation and installing ground support prior to commencing drilling. The previous owner left the mine in very good condition and the operations team is evaluating what existing services can be used to speed up access and reduce costs.” The company said that proposed drill sites have been visited and access for drilling is possible, significantly de-risking the upcoming exploration program. The initial phase of underground drilling at Snip will consist of 73 holes from 24 drill stations. This program aims to confirm and extend gold mineralization beyond where mining ended at Snip. Drilling is expected to begin in the next two week. In addition to accessing the underground workings, Skeena has winterized the existing camp and facilities at Snip to allow for year-round exploration.

Victoria makes Spinach gold discovery at Dublin

Victoria Gold Corp. Sep. 18 reported results from the first 11 holes drilled at the Spinach target, a previously untested area north of the Olive-Shamrock deposit at the Dublin Gulch gold property in the Yukon. Highlights from this drilling include 14.3 meters of 1.04 grams per metric ton gold in hole DG17-866C; 6.1 meters of 2.38 g/t gold in DG17-860C; and 5 meters of 4.26 g/t gold in DG17-857C. "These first drill holes from the Spinach target underscore the high-grade potential of this new area which lies within 500 meters of the Olive-Shamrock deposit,” said Victoria President and CEO John McConnell.

Victoria also reported the discovery of Bluto, a large gold anomaly about 6,000 meters east of Eagle. During the course of cutting an access trail to Bluto, a six-meter-long heavily fractured quartz vein was uncovered near the headwaters of Indicator Creek. A trench here, TR17-16, returned 0.67 g/t gold across the entire 146 meters of the trench, including 30 meters of 2.44 g/t gold. “Bluto has been a high-priority target on the Potato Hills Trend for many years, and with the exploration trail construction to the Nugget Zone in eastern Dublin Gulch underway this season, we were able to branch off from this corridor and bring the first modern, systematic mineral exploration to the Bluto target,” said McConnell. “The fact that a high-grade gold vein was discovered early in this campaign demonstrates that our Potato Hills Trend mineralization model is working and we look forward to the first ever drill results from this highly prospective area.”

White Gold exploring 1M acres in the Yukon

White Gold Corp. Sep. 14 provided an update on its extensive exploration program in the Yukon, including drill results from JP Ross, one of five properties the company acquired from Kinross Gold Corp. Highlights from the 14 rotary air blast holes drilled in the Rebecca zone at JP Ross include 3.05 meters of 21.87 grams per metric ton gold; and 6.1 meters of 3.1 g/t gold. JP Ross is about 10 miles (16 kilometers) northeast of White Gold, a property that hosts 9.79 million metric tons of indicated resource averaging 2.7 g/t (840,000 ounces) gold; and 2.17 million metric tons of inferred resource averaging 1.8 g/t (125,000 oz) gold in the Golden Saddle deposit. White Gold Corp. has begun a robust reverse circulation and rotary air blast drill program to upgrade and expand the Golden Saddle and Arc deposits on its namesake property. At Golden Saddle, the company is focused on infilling the resource area and testing extensions of the deposit along strike. Past drilling at Arc was widely spaced. The company plans to upgrade the confidence of the resource with infill drilling; test a potential subparallel gold zone below the main Arc zone; and investigate the potential for high-grade gold within a broader envelope of lower grade mineralization found there. The results from Saddle and Arc will be included in an updated White Gold resource estimate slated for completion early in 2018. RAB drilling also turned up interesting results on Loonie, part of the company’s Money claim group to the northwest of the White Gold property. One hole drilled at Loonie returned 7.6 meters of 4.6 g/t gold, another returned 7.6 meters of 4.1 g/t gold. Early staged exploration on the company’s roughly 1 million acres of property in the White Gold District included: 24,855 soil samples collected over the Nolan, Bell, Hunker, Bonanza, IND, Toonie, Reba, CLW, Polar, Pedlar, Betty, Hayes, Carlisle and Rice properties; 42 line-kilometers of induced polarization-resistivity surveys on the Nolan, IND, Dime, Black Hills, Brew and Wolf properties; 2,271 GT Probe (soil-bedrock interface) samples on the Bonanza, IND, Black Hills, Brew, and Wolf properties. In addition, White Gold staked 80 claims at Thor, a property about five kilometers (three miles) west of the White Gold property.

Auryn discovers gold zone near Three Bluffs

Auryn Resources Inc. Sep. 14 reported results from discovery drilling at Aiviq, a prospect 12 kilometers (7.5 miles) north of the Three Bluffs deposit at the Committee Bay gold project in Nunavut. One hole drilled at Aiviq, 17RGR003, cut 12.2 meters of 4.7 grams per metric ton gold. The mineralization at Aiviq is situated along a regional shear zone that is defined by a 7,000 meter long gold-in-till anomaly. Auryn drilled a single drill fence across the zone this year, with 17RGR003 being the only hole that cut through the shear zone. In addition to the high-grade intercept, this hole cut a 100 meter wide zone of lower grade structures that demonstrate the overall strength and potential of the gold bearing system. Auryn believes that a follow up drill program along this shear zone is highly warranted given the similar nature of the till signatures and comparable high grade gold values to those found at the Three Bluffs deposit. "We view this high-grade intercept as the first step to defining a significant new discovery at Committee Bay and are looking forward to aggressively exploring the 7-kilometer-long gold-in-tills anomaly along the mineralized shear zone in 2018,” said Auryn COO Michael Henrichsen. "The proximity of the Three Bluffs deposit with this new discovery creates the potential for a multi-deposit scenario utilizing common infrastructure as we expand the Three Bluffs resource and continue our exploration efforts at Aiviq." In addition to Aiviq, positive results were received from the Aarluk, a prospect 17 kilometers (10.5 miles) north of Aiviq. One hole drilled at Aarluk cut 4.57 meters of 2.52 g/t gold. Assays from another three holes drilled there are pending. Auryn said these results indicate the importance of a 30-kilometer- (19 miles) long structural corridor from Three Bluffs through to Aarluk. Auryn completed 30,133 meters of rotary air blast drilling in 156 holes this summer, assays are pending from about 60 percent of the program. ●

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RED DOG OUTPUT

north will be ready to supply high-grade zinc ore to the Red Dog mill – potentially for decades.

This year, Teck is investing C$16 million on an exploration program at Aktigiruq that includes roughly 18,000 meters of drilling in 16 to 20 holes.

While Aktigiruq has not been drilled sufficiently to calculate an NI 43-101-compliant resource estimate, the 25 widely spaced holes drilled there prior to 2017 suggest this exploration target has somewhere between 80 million and 150 million metric tons of material averaging around 13 percent zinc and 4 percent lead.

If realized, this would make the Aktigiruq zinc deposit one of the top undeveloped zinc deposits in the world and could feed the Red Dog mill for several decades beyond 2031.

For comparison, Red Dog has processed 78.3 million metric tons of ore averaging 19.6 percent zinc and 5.3 percent lead over 27 years.

Going into 2017, Red Dog had 50.9 million metric tons of proven and probable reserves averaging 15 percent zinc and 4.2 percent lead.

No analytical results for the 2017 program at Aktigiruq were reported, but the high-grade zinc mineralization is easy to recognize and Teck said visual estimates are consistent with expectations.

Teck plans to report the results from Aktigiruq drilling once all assay results are returned. ●

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TANGEN

weren't enforced.

This cynical worldview is belied by the extremely low incidence of time-lost injuries at hard-rock mines. Our mines in Alaska rarely have such incidents; and, even then, such injuries are as likely to occur in the offices among clerical employees as they are in the equipment yard, on the drill site or even underground.

The most dangerous place for a miner to find himself is on the highway driving to work. Statistically, it is safer for a person to work at a mine than a Walmart.

No one advocates doing away with MSHA at this point, but it is fair to say that firm pressure from the top to question the efficacy and value regulations that impose unreasonable burdens on our industries is fair game. ●

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NEWS NUGGETS

per zones. Van Nieuwenhuyse said the cobalt is "occurring as the mineral carrollite and associated with one or more stages of pyrite – particularly in the higher grade copper zones with bornite and chalcocite." More geochemical and metallurgical work is planned for the cobalt. Trilogy is executing this US$10 million program at Bornite, which has been funded by South32 Ltd. as part of that company's option to earn 50 percent ownership of UKMP. ●

EXPLORATION & PRODUCTION

USGS study of ND oil potential requested

By JAMES MACPHERSON

Associated Press

North Dakota oil drillers and U.S. Sen. John Hoeven want federal geologists to reevaluate the amount of recoverable crude oil in the state, saying a new assessment likely would show stronger production potential and attract investment.

The U.S. Geological Survey once said two massive shale formations found in North Dakota held the largest continuous oil accumulation it ever assessed. But the title was given to a formation in Texas' Permian Basin last year, after a USGS assessment found nearly three times the amount of recoverable oil than in the Bakken and Three Forks formations.

Hoeven now wants the USGS to take into account other formations in western North Dakota's oil patch that could be exploited using technology developed for the Bakken and the Three Forks directly below it.

"The industry wants a broader study," the North Dakota Republican said. "The industry feels it will show a larger resource if the other formations are included."

Hoeven said top officials at the USGS have given assurances that the study would be done, though it could take "a year or two" to begin.

USGS spokesman Dave Ozman said he was aware of the request but no formal decision has been made to do a new assessment.

North Dakota geologists say nearly 20 different geologic formations have been tapped in the state since oil was first brought to the surface 66 years ago. The Bakken and Three Forks, which only have been tapped in the last decade using hydraulic fracturing, now account for 95 percent all of North Dakota's more than million-barrel-per-day oil production, ranking it second behind Texas.

Know-how gained from the Bakken and Three Forks is being tested on other formations in the state and it has been successfully applied elsewhere, creating a rivalry for drilling rigs and investment.

Ron Ness, president of the North Dakota Petroleum Council, said investment dollars have dropped in the state as companies and investors have more options.

"We've certainly seen a lot of competition from other oil shales," said Ness, whose group represents more than 500 companies working in the state's oil patch.

Ness said a new assessment that would consider underdeveloped formations would give a more accurate picture of the state's oil capability.

"Having the best information available would do a lot

see **STUDY REQUESTED** *page 13*

Oil Patch Bits

Fugro establishes hydrography center in Houston

Fugro recently announced plans to establish a hydrography center of excellence for the Americas, supporting its strategic focus on growth in this market sector. Utilizing specialist resources that include autonomous vessels and aircraft, integrated data acquisition techniques, remote processing and large data transfer, the focus is on reducing risk, increasing accuracy and streamlining project timelines for clients.

The Houston-based center will handle a wide range of hydrographic project types, including nautical charting, cable routing and Law of the Sea boundary claims. With continued delivery excellence as its objective, Fugro is formalizing its coastal zone mapping services using complimentary geophysical and geotechnical techniques to benefit a wide range of applications including resource development, infrastructure siting, coastal management and emergency response.

Establishing the hydrography center of excellence is part of Fugro's reorganization of its hydrography services in the Americas, relocating key staff and assets from its San Diego office to its U.S. headquarters in Houston, Texas. Consolidating resources to regional hubs that house a wider range of geophysical and geotechnical offerings is part of Fugro's global effort to meet customer needs more efficiently.

"The need for hydrography services continues to increase," said Fugro USA President Ed Saade. He cited as evidence the company's recent collection of more than 1 million km² of high resolution bathymetry data annually, as well as involvement with seabed mapping initiatives such as the Shell Discovery XPRIZE and Seabed 2030. "Our new structure will allow us to meet growing demands for hydrography data, participate in important industry programs and maintain focus on our core customers, most specifically NOAA."

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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POOL RULES

Marathon Oil as operator holding 60 percent working interest and Union Oil Company of California holding 40 percent. Hilcorp acquired Union's interest Jan. 1, 2012, and Marathon's interest Feb. 2, 2013, at which time Hilcorp became operator.

Paxton No. 8

In its application for amended pool rules Hilcorp said it drilled and completed the Paxton No. 8 well in the Ninilchik Beluga/Tyonek gas pool in August 2014. That well was completed to the base of the T142 sand, the company said. Hilcorp said the current pool definition includes gas-bearing intervals from the B8 sand down to the T142 sand. Log analysis from the Paxton No. 8 "indicated the possible presence of gas in the deeper Tyonek gas sands lying below the T142 sand," the company said, something also indicated by log analysis from offset wells, but none of the sub-T142 sands were ever tested.

Sub-T142 sands

Hilcorp said it successfully tested the Kalotsa No. 4 well this August in the T146 sand, which is below the gas pool as currently defined by AOGCC. That well had an initial flow rate of about 500 thousand cubic feet per day between 9,021 feet measured depth and 9,084 feet MD, with results from that well confirming "the presence of economic quantities of gas in the sub-T142 sands."

Hilcorp said it drilled the Kalotsa No. 3 well this June, a well designed to penetrate and test sub-T142 sands and determine the presence of gas pay and reservoir quality, and in its Aug. 29 pool rules change application the company said it was currently testing sub-T142 sands in various Ninilchik field wells.

Initial results from the Kalotsa No. 4 well suggest the Ninilchik Beluga/Tyonek gas pool extends below depths defined in Conservation Order 701A, with further testing needed.

"In order to delineate and develop the sub-T142 sands, the base of the Ninilchik Beluga/Tyonek Gas Pool requires modification for adequate development," the company said.

The commission has tentatively scheduled a public hearing on the application for Oct. 25 at 10 a.m. ●

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BADAMI POTENTIAL

tion for the Starfish drilling: Road construction should start in November and continue into January. Everything should be in place for the start of drilling by the end of January. The Nabors 27E drilling rig that the company plans to use is expected to take about 60 days to complete the well. Following the use of fracking to test the prospect, drilling results should be in hand by the end of April.

"If this well works close to what we think it will, it should open five to seven more prospects similar to it," Giesler said.

Giesler told Petroleum News that the Starfish well is targeting a potential reservoir interval immediately above the oil source rock and below the Badami sands that form the reservoir for the Badami field.

Three buckets

In his talk to the Alliance Giesler grouped his company's overall operations into three buckets: oil on the west side of Cook Inlet; gas onshore the east side of the inlet; and Badami. He said that his company is also engaged in three key plays: oil development in the Redoubt field in western Cook Inlet, the planned Sabre exploration well on the west side of the inlet and the drilling at Badami.

Likening the three plays to the dealing of three flop cards in Texas hold 'em poker, he said that one of these cards, the Redoubt development, is already face up on the table. A combination of drilling, fracking and the use of waterflood has successfully boosted oil production from the field — the drilling of the Redoubt Unit No. 3 well in the first half of this year added a little more than 1,100 barrels per day to field production, he said.

The second card, the drilling of the Sabre well, northwest of Glacier's West McArthur River field, is under evaluation for potential drilling in the summer of 2018. And the card representing the Badami drilling remains face down until the drilling results are known.

In Cook Inlet, Glacier has the potential to more than triple its oil production, Giesler said.

Giesler characterized his company's Cook Inlet gas interests as the production of a nice fuel but not a game changing operation. The company operates the North Fork gas field on the Kenai Peninsula.

"If people want more gas, we can make more gas," he said.

Emerged from bankruptcy

Glacier Oil and Gas is the company that emerged from the bankruptcy of its predecessor, Miller Energy Resources Ltd. and its subsidiaries Cook Inlet Energy LLC and Savant Alaska LLC, operator of the Badami field. Although Glacier still has those two subsidiaries, the company views itself very much as a single entity, Giesler said.

And the company has now established a strong financial position, having dramatically cut its costs while also increasing production levels, Giesler said. In particular through the elimination of unnecessary cost elements, overall costs including operating costs and capital expenditure have dropped 60 percent relative to costs in 2014, he said. Previous to the bankruptcy the company had "spent a ton of money and got a whole bunch of nothing," he commented.

With a completely new executive team at the helm, the company is now focused on disciplined growth, Giesler said. And the company culture emphasizes safety as the top priority, while being technically driven and financially disciplined.

"If it's not safe, we're not doing it. If the technicals don't merit it, we're not doing it. We don't drill or workover hope. And if it doesn't make money or we don't think it will make money, we're not doing it," Giesler said.

The company has a clean balance sheet, no third-party debt and no litigation to deal with. The company's equity owners, Apollo and HPS Investment Partners, have provided $40 million in revolving liquidity. And a recent audit raised no issues, Giesler said.

He also commented on factors that particularly enable Glacier to efficiently manage its costs and investments: The company enjoys 100 operatorship across all of its facilities, and with each field being close to existing infrastructure, the company can grow production on a fixed cost base.

Emphasis on safety

Emphasizing the priority that Glacier gives to safety, Giesler said the company's first capital investment upon emerging from bankruptcy had been the multiple millions of dollars spent moving West McArthur oil processing from the field's aging and problematic facilities to the more modern and reliable Kustatan facility that processes oil from Redoubt. As well as reducing environmental risk, the changeover will ultimately reduce production costs for the fields, Giesler said.

In addition, the company spent nearly $1 million stabilizing its subsea pipelines in Cook Inlet; plugging and abandoning six onshore wells; and switching to the use of twin-engined helicopters for personnel support. The company has a strong health, safety and environmental record, with no spills to the environment since 2013 and no lost time incidents for employees in 2017, Giesler said.

"We really do try to operate safely and to strictly adhere to all regulatory rules," he said.

Giesler commented that the biggest challenge for a company like his operating in Alaska is the ability to obtain capital. For 80 percent of the small banks that typically lend to exploration and production companies, upon mentioning of operating in Alaska the investment conversation stops, he said. There are relatively few operators in the state and banks have to consider a number of issues including the political environment, the geological environment and gaining an understanding of remote operations. Moreover, some banks were burned by the deferral of the payments on state tax credits, Giesler said, adding that he understands that the Alaska governor and state legislators have difficult problems to deal with. ●

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STUDY REQUESTED

for development and reaffirm and show the potential," he said.

The Bakken formation encompasses some 25,000 square miles within the Williston Basin. About two-thirds of the acreage is in western North Dakota, where the oil is trapped in a thin layer of dense rock nearly 2 miles beneath the surface. The Three Forks formation underlies most of the Bakken.

In 2013, the USGS released data that showed 7.4 billion barrels of oil could be recovered from the Bakken and Three Forks spanning parts of North Dakota and parts of Montana, nearly double the amount the agency previously estimated for the region in 2008.

The USGS's study last year found Wolfcamp shale, located in the Midland Basin portion of Texas' Permian Basin, contains 20 billion barrels of recoverable oil.

Billionaire oilman Harold Hamm, chairman and chief executive officer of Oklahoma City-based Continental Resources Inc., has long said that government estimates of recoverable oil in the Bakken and Three Forks formations are too conservative. ●

FINANCE & ECONOMY

Harvey curtails industrial production

U.S. industrial output plunged 0.9 percent in August, the most in eight years, mostly because of Hurricane Harvey's damage to the oil refining, plastics and chemicals industries.

The storm, which slammed into the Gulf Coast in Texas and Louisiana in late August, lowered industrial production by about 0.75 percentage point, the Federal Reserve said Sept. 15. That suggests production would have slipped without the hurricane.

The Gulf Coast is home to many of the nation's oil refiners, and petroleum is a key component in the manufacturing of plastics and chemicals.

Manufacturing has picked up since last summer as the dollar has fallen in value, which makes U.S. goods cheaper overseas, boosting exports. Manufacturing production fell 0.3 percent in August, though the Fed said that without the hurricane, it would have increased roughly 0.5 percent.

And a survey of manufacturing firms that preceded Harvey found that factory activity rose to a six-year high in August.

Still, the report illustrates how Harvey has disrupted the wider U.S. economy. Jennifer Lee, senior economist at BMO Capital Markets, said the data included signs of weakness, even excluding the impact of Harvey.

Lee cut her estimate for third-quarter growth to 2 percent at an annual rate, from an earlier forecast of 2.4 percent. A drop in retail spending in August was also a factor. But she also expects growth to rebound in the fourth quarter as rebuilding from Harvey and Irma gets underway.

Industrial production includes mining and utilities as well as manufacturing. Utility output tumbled 5.5 percent as milder temperatures on the East Coast reduced air conditioning use. And mining production fell 0.8 percent in August as Harvey temporarily shut down the drilling of oil and natural gas and refining operations.

—ASSOCIATED PRESS

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NORDAQ DISPUTE

been plugged and abandoned, and asked that the bonding requirement for that work be lifted.

In a Sept. 13 application for reconsideration of the $800,000 surety bond the commission had required for the Tiger Eye, Brena said plugging and abandonment of the Tiger Eye was complete, including clearance of the location, and said a commission inspector had approved the work.

P&A issues

Brena said Sept. 20 that NordAq was requesting flexibility for bonding on the Shadura well; he said the commission was flexible with the company on Tiger Eye, and said the company had done what it said it would do at that well.

An AFE, authorization for expenditures, has been approved for Shadura and permitting and contracting are complete, Brena said. The company is just waiting for the weather to allow construction of the needed snow road, and plans to have the P&A work at Shadura done by the end of February.

The Tiger Eye AFE was some $667,000, because the well was on the west side of Cook Inlet, off the road system. Brena said the cost ended up being more than $700,000 because an 800-foot ice plug in the well had to be addressed, requiring a special tool and an expert to be brought in.

Without that, he said, the P&A work at Tiger Eye would have come in under the AFE.

The AFE for Shadura, he said, is $483,826. The well is 2.1 miles from the road on the east side, and is a simple well, a straight hole, not as complex as Tiger Eye, which was a deviated well requiring more plugs.

Bonding issues

Brena said, the commission is requiring a $1.2 million bond for the Shadura P&A work. The commission said NordAq provided no evidence that the bond should be lower, Brena said, but the AFE for Shadura, provided to the commission, was not recognized.

The company is asking for reduced bonding, he said, and to have until the end of February to get the Shadura P&A work done before the bond is imposed. He said the company was in the middle of getting the work done.

As an alternative, he said, NordAq has a $500,000 bond at Tiger Eye and with a couple of months that could be freed up and that amount is more than the AFE for Shadura.

Penalty issue

Brena did not address the fact that the commission had already reduced the proposed fines.

He said the $100,000 proposed fine for each well was the maximum, and said the commission was required to consider mitigating factors; he requested that the fines be reduced to $10,000 for each well.

The problems with the delay in P&A work were based on NordAq's belief that there were other uses for the wells, Brena said: with Tiger Eye the company thought other people were interested in using it, and there was a similar situation at Shadura, with the potential that the well bore could be used for additional drilling.

He acknowledged that NordAq had not communicated well with the commission, but said the company's goal was to find a way to make the wells work commercially.

Commissioner Dan Seamount asked Brena if snow road construction and mobilization and demobilization were included in the AFE.

Bob Warthen, special consultant to NordAq, told the commission that the AFE included those items.

Asked if the equipment and crews were in place to do the P&A at Shadura, Warthen said they were.

Commission Chair Hollis French asked about the timeline for the return of the $500,000 Tiger Eye bond NordAq has with the Department of Natural Resources.

Brena said availability of that bond was estimated to be 30 to 60 days.

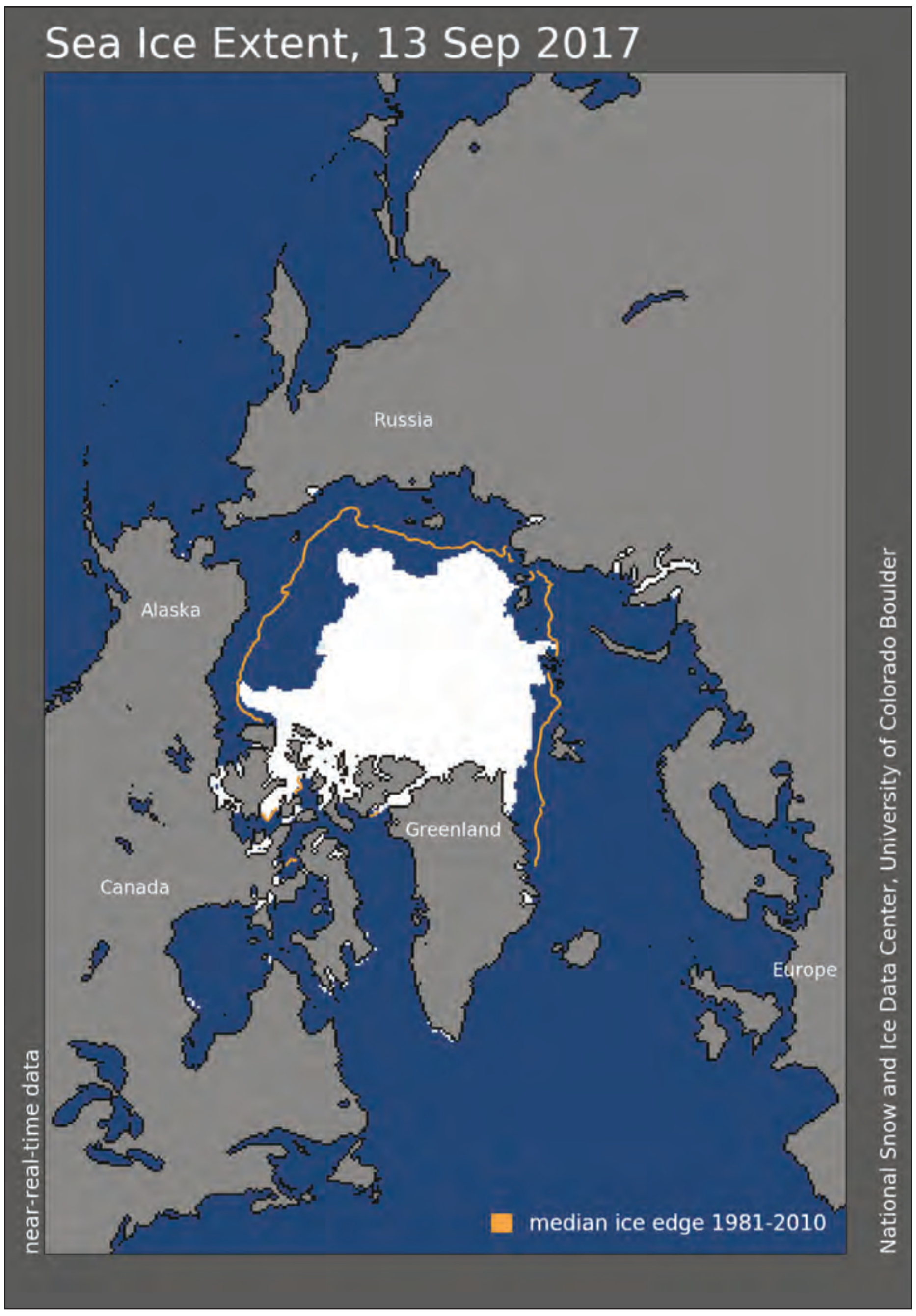
Commissioner Cathy Foerster asked if NordAq could demonstrate that contracts are in place. Warthen said the company has a master service agreement with All American Oilfield which subcontracts for the work.

Brena noted that affidavits, including one from All American Oilfield, were included in the company's filing with the commission.

Forester asked if the AFE would go away at the end of the budget cycle and Warthen said no, that the NordAq board had approved the AFE, which had been submitted to the commission.

Brena said funds were in place, but that if the commission required a separate account for the Shadura work the company would be happy to do that, as long as that account could be drawn down to pay for the Shadura work.

—KRISTEN NELSON



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ICE EXTENT

have all been observed since 2010.

NSIDC reported that the Arctic sea ice edge continued to retreat in the Chukchi, East Siberian and Kara seas during the first two weeks of September, but expanded slightly in the Beaufort and Laptev seas during the same time period. The ice edge is far north of its average position in the Chukchi Sea.

Navigation possible

The Northern Sea route around the north coast of Russia is largely open. However, Amundsen's Northwest Passage, the more southerly route around northern Canada, has up to 50 percent sea ice cover in some places. The more northerly Northwest Passage, through the McClure Strait, is blocked by consolidated, thick, multi-year ice.

Some ships have successfully navigated the southern Northwest Passage using icebreaker assistance, NSIDC said. According to the Crystal Cruises website, the cruise ship Crystal Serenity successfully transited the Northwest Passage for a second year in late August/early September. The Crystal Serenity was escorted by the icebreaker Ernest Shackleton.

Low air pressure

NSIDC said that this year a pattern of low air pressure at sea level across the central Arctic Ocean inhibited summer sea ice loss. However that pattern changed in the first half of September, with above average pressure over the Barents Sea and part of the Arctic Ocean.

The 10 lowest ice extents measured from satellite tracking have all been observed since 2010.

NSIDC also reported that an analysis of the Chukchi Sea and Beaufort Sea ice extent conducted by the National Weather Service in Fairbanks found that the 2017 extent tracked near record lows for the region through most of the summer. However, the pace of ice loss slowed relative to recent years after mid-August. The minimum ice extent in this region tends to occur later than for the Arctic as a whole, but it appears likely that the Chukchi/Beaufort minimum extent this year will be among the four or five lowest on record.

Apparently the National Weather Service has predicted that because of extensive open water, air temperatures over the Beaufort and Chukchi seas and along the North Slope will probably be far above average through the autumn.

Meanwhile, in the Antarctic the sea ice extent is approaching its winter maximum, an extent that looks likely to be among the five lowest recorded during the era of satellite observation, NSIDC said.

—ALAN BAILEY

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BONDING CHALLENGE

There are actually two related issues in play in the bonding dispute: the eventual dismantlement, removal and restoration, or DR&R, of the field's surface facilities; and the plugging and abandonment, or P&A, of the field's wells. DNR has jurisdiction over DR&R, while AOGCC has jurisdiction over P&A.

Although that $200,000 has become the norm for bonding requirements in the state, the commission does have the right to set a higher bonding level if it sees fit. The commission is currently reviewing its bonding requirements for the plugging and abandonment of wells and has expressed concern about small-scale operators having the financial wherewithal to deal adequately with defunct wells.

Aurora Gas bankruptcy

The issue relating to the Nicolai Creek field has arisen from the bankruptcy of Aurora Gas, the field's current operator — Aurora Exploration has offered to purchase and operate the field as part of the bankruptcy settlement. The bankruptcy court has approved the purchase. But completion of the purchase requires approval by the Alaska Department of Natural Resources of the transfer of the Nicolai Creek leases to Aurora Exploration, and the acceptance by AOGCC of a well plug and abandonment bond.

According to court filings, DNR has accepted in principle the lease transfer but the AOGCC bonding order has placed a major question mark over the Nicolai Creek sale. In a Sept. 15 AOGCC filing from Aurora Exploration, the company said that if it needs to post a $6 million bond "the Nicolai Creek unit becomes non-commercial and the Aurora Exploration transaction will not close." In that case, the gas field would likely shut down and, given Aurora Gas's insolvency, the state would presumably have to take on the plugging and abandonment of the Nicolai Creek wells.

But "AOGCC is charged with preventing waste of Alaska's resources," Aurora Exploration's filing says, referencing the loss of gas production if the gas field shuts down.

According to an affidavit filed with the bankruptcy court by Ed Jones, president of Aurora Gas, Aurora Gas recently received bids for the plugging and abandonment of the company's gas wells on Cook Inlet Region Inc. land on the west side of the Cook Inlet. Those bids indicated estimated costs ranging from $100,000 to $250,000 per well, Jones said.

Aurora Exploration has requested AOGCC reconsider its order. And on Sept. 19 the commission announced that it will reconsider and that it has scheduled a public hearing at 10 am on Oct. 9.

Two related issues

There are actually two related issues in play in the bonding dispute: the eventual dismantlement, removal and restoration, or DR&R, of the field's surface facilities; and the plugging and abandonment, or P&A, of the field's wells. DNR has jurisdiction over DR&R, while AOGCC has jurisdiction over P&A. P&A is important in ensuring that hydrocarbons do not escape to the environment from defunct wells.

According to Aurora Exploration's AOGCC filing, the company has executed a DR&R agreement with the state under which the company would establish a trust account and a $500,000 bond for the DR&R liability at Nicolai Creek. The combination of this with a $200,000 P&A bond with AOGCC would make $700,000 available to the state, should Aurora Exploration fail. That would come in addition to $700,000 already under bond to the state from Aurora Gas for all of that company's gas fields. However, should Aurora Exploration's purchase of Nicolai Creek fall through, the state would not be entitled to the benefit of the $700,000 in bonding from Aurora Exploration, the filing says. In other words, in this eventuality the state would have just Aurora Gas's $700,000 to cover some of the total cost of DR&R and P&A for all of Aurora Gas's fields, including Nicolai Creek.

Court order requested

In the event that AOGCC does not relent on its $6 million bonding requirement, Aurora Exploration has requested the bankruptcy court to order the commission to accept a $200,000 P&A bond — Aurora Exploration argues that the court can issue such an order because the AOGCC order violates U.S. bankruptcy law. In particular, U.S. bankruptcy code prohibits governments from discriminating against debtors in order to coerce the payment of dischargeable debts, Aurora Exploration told the court.

In this case, AOGCC's requirement that, for approval of a $200,000 bond, Aurora Exploration must P&A the Three Mile Creek wells, wells that have not been assigned to the company and that the company has no interest in, is an impermissible demand that is unenforceable and void, Aurora Exploration argues. Moreover, a bond of more than $200,000 as a consequence of a transfer of field operating rights has no precedent in Alaska and, in a bankruptcy, it is not permissible to use a bonding rule that is not consistent with rules used in other situations Aurora Exploration says.

In addition, the bankruptcy code requires a stay or freeze on the business arrangements of the debtor in a bankruptcy case. As a consequence, the contract between AOGCC and Aurora Gas for Nicolai Creek must transfer intact to Aurora Exploration upon transfer of the operatorship of the field. And so, if AOGCC is unwilling to agree to a $200,000 bond as a result of the sale of the field to Aurora Exploration, the court should order that the purchase of Aurora Gas's $200,000 bond must be included in the transfer of field operatorship, Aurora Exploration says.

Comparisons

By way of comparison for the potential cost of P&A for onshore wells in the Cook Inlet basin, there was a case earlier this year involving AOGCC levying fines against NordAq Energy for that company's failure to permanently abandon the Shadura well on the Kenai Peninsula and the Tiger Eye Central No. 1 on the west side of the basin. Both of these wells were exploration wells and not wells associated with existing gas fields.

NordAq told the commission that the estimated P&A cost for the Shadura well was about $400,000, although the cost would more likely be about $500,000 in the winter because of issues including the need for an ice road. In the event, the commission imposed a $1.2 million bonding requirement for the Shadura well. The commission reduced an initial bonding requirement of $1.3 million for the Tiger Eye well to $800,000 in recognition of available road access to the well site. ●

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